THE INTERRELATIONSHIPS BETWEEN ADULT MUSEUM VISITORS' LEARNING IDENTITIES AND THEIR MUSEUM EXPERIENCES

A thesis

Submitted for the degree of

Doctor of Philosophy

by

LYNDA JOAN KELLY

BA, Grad Dip Emp Rel

University of Technology, Sydney

2007

CERTIFICATE

I certify that the work in this thesis has not previously been submitted for any degree nor has it been submitted as part of requirements for any other degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

_____

Acknowledgements

I sincerely thank my supervisor Dr Janette Griffin. Her generous, intelligent and practical feedback given with good humour was always valued and appreciated.

I also acknowledge the contribution of my co-supervisors, Professor Lyn Yates and Dr Peter Aubusson, who gave valuable feedback from an external perspective, and Peter in particular for his support in the final stages of the thesis.

Several people assisted me during the preparation of this thesis. Phil Gordon continually encouraged me to persist with the thesis and assisted in reading early chapter drafts; Tim Sullivan commented on several papers prepared throughout the course of the study and continually believed the work was important; Dr Rob Hall and Allison Bartlett gave insightful comments on the surveys and questionnaires; Heather Clark, a doctoral student at University of Technology Sydney, gave invaluable assistance with data analysis; Blanche Savage assisted with data gathering; and Carl Bento from the Australian Museum Photography Unit kindly supplied the exhibition photographs.

I also acknowledge the Australian Museum, Sydney, for supporting this research, especially my former supervisors Gwen Baker and Jan Barnett, and my current supervisor, Janet Carding, who has been extremely supportive and interested in the study. Many of my professional colleagues and friends, from the Museum and across the sector, were also very enthusiastic and encouraging.

Finally, thanks to my children, Madeleine and Nicholas, for putting up with a somewhat distracted mother for the past eight years!

This thesis is dedicated to my father, John Lewis Kelly, 24 July 1928 – 20 March 2002—a great man and sadly missed.

Note on publications

Parts of the thesis have been published during the course of the study as follows.

Refereed conference proceedings

Kelly, L. (2001). *Researching learning…and learning about research.* In *Change and Choice in the New Century*, Change in Education Research Group Symposium Proceedings (pp. 115-121). Sydney: University of Technology.

Kelly, L. (2003). Extending the Lens: A Sociocultural Approach to Understanding Museum Learning. In L. Kelly & J. Barrett (Eds.), *Proceedings of UNCOVER - graduate research in the museum sector Conference 2002* (pp. 183-189). Sydney: Australian Museum and University of Sydney.

Kelly, L. (2006). *Visitors and Learners: investigating adult museum learning identities.* In Proceedings of the Australian Association for Educational Research Annual Conference, Adelaide.

Refereed journal articles

Kelly, L. (2000). Finding Evidence of Visitor Learning. *Informal Learning Review, 42*(May/June), 1, 8-12.

Kelly, L. (2003). What Does Learning Mean For Museum Visitors? *International Journal of Learning, 10*.

Kelly, L. (2005). Evaluation, Research and Communities of Practice: Program Evaluation in Museums. *Archival Science, 4*(1-2), 45-69.

Kelly, L. (2006). Museums as Sources of Information and Learning: The Decision-Making Process. *Open Museum Journal, 8*.

Books and book chapters

Kelly, L., & Gordon, P. (2002). Developing a Community of Practice: Museums and Reconciliation in Australia. In R. Sandell (Ed.), *Museums, Society, Inequality* (pp. 153-174). London: Routledge.

Kelly, L., Savage, G., Griffin, J., & Tonkin, S. (2004). *Knowledge Quest: Australian families visit museums*. Sydney: Australian Museum.

Kelly, L., Savage, G., Landman, P., & Tonkin, S. (2002). *Energised, engaged, everywhere: older Australians and museums*. Sydney: Australian Museum.

Contents

Tables

Figures

Abstract

Many museums around the world are reviewing the ways they are thinking about visitors and learning. Current theories of learning focus on the meaning individuals make based on their experiences—alone, within a social context and as part of a community. A critical aspect in better understanding the process of learning for individuals is to find out how people view themselves as learners across the rich array of available formal and informal learning experiences. Research has shown that when asked why they visit museums people often say "to learn" but there has been little exploration into what this means. What do museum visitors think learning is? How do visitors view themselves as learners within the context of a museum visit and does this change during and after their visit?

The research question investigated in this study was *What are the interrelationships between adult visitors' views of learning and their learning experiences at a museum?* A key focus of the study was on how adults describe learning, the place of learning in their lives and where museums are situated. Other areas examined included the relationship between learning, education and entertainment, as well as the roles visitors play during a museum visit. The framework of *learning identity* was used to characterise how individuals describes themselves as learners within a sociocultural context, including their future views of learning and the roles learning plays in their lives.

The study was undertaken in two parts—**Stage One** investigated individuals' personal philosophies and views about learning, and **Stage Two** explored how a museum exhibition experience provided insights into visitors' learning identities.

It was found that participants in the study describe learning in very rich and detailed ways, yet there were also a number of common ideas that emerged. It is proposed that museum learning can be framed under six interrelated categories—person, purpose, process, people, place and product—called the *6P model of museum learning*. The literature review showed that visitors learn a great deal from museums across a diverse range of content areas and at many different levels. However, the method used in this study also revealed that visitors could learn more about the concept of learning as well as their own learning processes—likes, dislikes, preferred strategies—if they are encouraged to think about themselves as a learner before they engage with an exhibition.

Chapter 1. Introduction

This thesis is about museums and visitors' learning. A large range of people visit museums: from the very young to the very old; and across different groups: families, friends, schools, couples. Museums are exciting places for visitors as they tell stories about the objects they hold and the research they undertake in a variety of ways. Museums are unique contexts for learning, often called "free-choice" learning environments (Falk & Dierking, 2000). Museums have the opportunity to shape identities—through access to objects, information and knowledge visitors can see themselves and their culture reflected in ways that encourage new connections, meaning making and learning (Bradburne, 1998; Carr, 2003a; Falk, 2004; Falk & Dierking, 1992, 2000; Hein, 1998; Hooper-Greenhill, 2000; Silverman, 1995; Weil, 1997).

Current theories of learning focus on the meanings individuals make based on their experience—alone, within a social context and as part of a community (Falk & Dierking, 1992, 2000; Hein, 1998; Leinhardt & Knutson, 2004; Malone, 1990; Matusov & Rogoff, 1995; Woolfolk, 1998). A critical aspect in better understanding the process of learning for individuals is to find out how they view themselves as a learner across the rich array of both formal and informal learning experiences available—their *learning identity*. Research has shown that when asked why they visit museums people often say "to learn" (Combs, 1999; Falk, 1998; Falk, Moussouri & Coulson, 1998; Jansen-Verbeke & van Rekom, 1996; Prentice, 1998) but there has been little exploration into what learning means for visitors. What do museum visitors think "learning" is? How do visitors view themselves as learners within the context of a museum visit and does this change during and after their visit?

This study examines the question What are the interrelationships between adult visitors' views of learning and their learning experiences at a museum?, addressing the following sub-questions:

- How do adult museum visitors describe learning?
- What role does learning play in their lives?
- How do these views match their museum experiences?
- How well do learning opportunities provided by museums match how an individual likes to learn?
- What roles do visitors play in a museum visit and do these roles influence their learning identity?

The framework of *learning identity* is used to characterise how individuals describe themselves as learners within a sociocultural context, including their future views of learning and the roles learning plays in their life.

This chapter introduces the research, beginning by detailing the background to the study and the research questions. Then, the context of the research is outlined followed by a discussion of significance of the thesis. The final section provides an overview of how the thesis is structured and conventions used.

1.1 Background: why is this study needed?

Museums have developed from being repositories of knowledge and objects to having a '… multifaceted, outward looking role as hosts who invite visitors inside to wonder, encounter and learn' (Schauble, Leinhardt & Martin, 1997, p.3). Falk and Dierking (2000) suggested that museums '… need to be understood and promoted as integral parts of a society-wide learning infrastructure' (p.225) as they are an important part of a broader educational environment and complement other forms of learning. Schauble et al. (1996) also recognised that research '… needs to address how informal learning environments are nested within [their] surrounding contexts' (p.21).

Museums are considered to be free-choice, or informal, learning environments (Falk, 2004; Falk & Dierking, 2002; Hein, 1998; Hein & Alexander, 1998). Free-choice learning has been described as '… self-directed, voluntary, and guided by individual needs and interests—learning that we will engage in throughout our lives' (Falk & Dierking, 2002, p.9). Informal learning is different from the formal contexts of school and universities, being described as:

- occurring outside of the formal, structured school or university environment
- a lifelong process, given that humans spend more time outside, than inside, school
- happening across a variety of mediums, such as television, the internet and museums
- linking to formal learning in an unplanned way
- voluntary (Crane, Nicholson, Chen & Bitgood, 1994; Falk & Dierking, 1992).

However, in the twenty-first century there are many challenges facing museums. These include increased competition and pressures on attendances because of the proliferation of leisure choices for more sophisticated consumers and the rise of access to the internet (Lynch, Burton, Scott, Wilson & Smith, 2000). Across the world museums are finding themselves competing in the marketplace with other leisure, learning and educational providers (Falk & Dierking, 2000; Lynch et al., 2000; Mintz, 1994) within what has been called the "experience economy", defined as the wide range of currently available educational leisure experiences (Pine & Gilmore, 1999).

The demands of the "information age" have raised new questions for museums, particularly in the areas of access and authority (Cameron, 2003, 2006; Freedman, 2000). It has been argued that museums need to move from being suppliers of information to providing usable knowledge and tools for visitors to explore their own ideas and reach their own conclusions (Bradburne, 1998; Hein, 1997a) because increasing access to technologies, such as the internet, '… have put the power of communication, information gathering, and analysis in the hands of the individuals of the world' (Freedman, 2000, p.299). Freedman also

argued that museums should become mediators of information and knowledge for a range of users to access on their terms, through their own choices, and within their own place and time:

> The role of museums in the future … lies in legitimising information and information processes and in being an advocate for knowledge as the province of the people, not the sole property of the great institutions (Freedman, 2000, p.303).

Funding cuts have resulted in more limited resources, requiring museums to operate on a more commercial basis and to be more collaborative through partnerships (Brown, 1997; Garnett, 2002). As well, there is a need for museums to stay relevant and be responsive to pressing social and environmental issues such as population and sustainability, social justice and Indigenous rights (Bradburne, 1998; Brown, 1997; D. Griffin, 1998; Kelly, Cook & Gordon, 2006; Kelly & Gordon, 2002; Skramstad, 1999; Weil, 1994, 1999). These pressures have resulted in a fundamental shift for museums from being primarily curator-driven to becoming market-responsive, focusing on the needs of audiences with a particular emphasis on their learning (Seagram, Patten & Lockett, 1993; Weil, 1999).

Museums have always seen themselves as having an educational role. The earliest museums were founded on the premise of "education for the uneducated masses" (Bennett, 1995a), "cabinets of curiosities" (Weil, 1995) established to

> … raise the level of public understanding … to elevate the spirit of its visitors … to refine and uplift the common taste (Weil, 1997, p.257).

More recently there has been a conceptual change from thinking about museums as places *of education* to places *for learning*, responding to the needs and interests of visitors (Bradburne, 1998; Carr, 1999, 2003b; Falk, 2004; Falk & Dierking, 2000, 1995; Pitman, 1999; Rennie & Johnston, 2004; Weil, 2002). Weil (1999) stated that museums need to transform themselves from '… being *about* something to being *for* somebody' (p.229, emphasis in original).

Hooper-Greenhill (2003) noted that this conceptual change was an important development in the ways museums thought about their visitors and provided services for them:

> The shift from "education" to "learning" signals a very significant philosophical change within museum culture. "Museum education", as an expression, has less of a visitor focus than "museum learning". To consider museums and learning immediately demands a focus on who is learning what … The discussion of the "educational role" of the museum runs the risk of focusing on delivery systems and methods … [which] encourages an internally-oriented museum philosophy, whereas thinking about learning … demands much more of an external orientation (Hooper-Greenhill, 2003, p.2).

Given that learning is a key issue for museums, the literature revealed three reasons for studying what learning means for visitors, which are described in the next sections.

1.1.1 People visit museums to learn

Literature about why people visit museums has revealed that the overwhelming reason given was for some type of "learning experience", usually described as education, getting information, expanding knowledge or doing something worthwhile in leisure. Often the word "learning" was used, which was linked to higher-order fulfillment of personal needs and enhancing self esteem (Hood, 1983, 1995; Lynch et al., 2000; Prentice, Davies & Beeho, 1997; Prentice, Witt & Hamer, 1998; Ryan & Glendon, 1998; Sachatello-Sawyer et al., 2002; Silverman, 1995; Tian, Crompton & Witt, 1996). Falk (1998) reported that people who visited museums valued learning, sought it in many ways and were usually better educated than the general population:

> The primary reason most people attend museums, whether by themselves or with their children, is in order to learn. … [Therefore they are] likely to see museums as places that provide opportunities for them to expand their own and their children's learning horizons (p.40).

Prentice's research (1998) into recollections of why people visited museums found that '… motivations of "to learn" and "broaden general knowledge" were reported irrespective of visitors' educational level, social class or age' (p.53). Jansen-Verbeke and van Rekom's study of visitors to Rotterdam (1996), specifically the Museum of Fine Arts, demonstrated that the central motivation for visiting the art museum was '… to learn something' (p.367). Similarly, Combs (1999) discovered that people visited the Winterthur Museum, Gallery and Garden (in the United States) primarily for learning and recreation. Mitchell's (1999) study of family visitors to the Australian Museum, Sydney found that while many factors triggered the decision to visit, the most important reason cited for family groups was "to learn" closely followed by "entertainment". Results from surveys of 413 visitors to the Australian Museum (Kelly, 2001) demonstrated a number of factors that motivated museum and gallery visits, with the principle ones (in order of choice) being experiencing something new, entertainment, learning, family interests and doing something worthwhile in leisure.

1.1.2 Meaning of concepts: learning, education, entertainment

Falk, Dierking and Holland (1995a) observed that

> … if researchers use the term "learning" to talk with visitors it might affect the outcome of the study, since many of them might [associate] "learning" with formal education and [therefore] have difficulty with the question (p.27).

Therefore, a second reason to investigate the meaning of learning in museums is a perceived confusion between the words "learning" and "education", as well as the concept of "entertainment".

Prince (1990) investigated a range of attitudes and perceptions that were key to museum visiting. He found that visitors' previous experiences with museums, as well as with learning and education generally, determined whether people then visited museums and the subsequent experiences they remembered. Prince suggested that if museums were perceived as "educational" this could be a deterrent, due to peoples' past negative experiences with formal education. He proposed that people made positive choices to do things in their leisure time

because they valued and enjoyed them. He then concluded that if people valued the concept of learning more highly than education museums may be doing themselves a disservice if they portrayed themselves as being educational.

To illustrate this problem, a study of school-museum learning uncovered an unintended outcome (J. Griffin, 1998). When students were asked about learning generally, or what they had specifically learned during their visit to a museum, they expressed the view that they didn't consider they were learning when looking, playing, using interactives, watching videos and participating in other hands-on experiences:

> There seemed to be a strong belief that *just looking around*, although they enjoyed it, did not count as learning (1998, p.91, emphasis in original).

Griffin concluded that students thought they weren't learning unless they were undertaking a formal task, as they '… identified learning almost exclusively with the type of activities that go on at school, especially pen and paper activities' (1998, p.91).

Prentice (1994; 1998) found that people perceived museums as educational, places to obtain information and for pleasurable viewing, yet

> … to a significant minority the educational function identified would seem *not* to appeal to them as pleasurable and, thus, this dominant educational role may be a deterrent to a substantial minority of visitors (1994, p.276, emphasis added).

However as described above, learning *is* a key reason for people visiting museums. If, as Prentice argued, museums were perceived as educational would this put people off visiting? Does associating a museum with an "educational experience" make it less attractive for visitors? Would it be better to use the word "learning"?

Roberts (1991) stated that 'The term "education" has long been associated with the kind of information-based instruction that occurs in classroom settings' (p.163). Hooper-Greenhill (2003) identified five underlying assumptions about education: that it was a cognitive process; hard work; instructive; involved both experts and novices and was associated with schooldays. However, these

propositions have not been tested further. How is the word "education" perceived? Is it different to "learning"?

Senge (1992) also speculated that there could be problems associated with using "learning" because of a perceived negative perception about that word. Senge suggested that

> … learning has lost its central meaning in contemporary usage. Most people's eyes glaze over if you talk to them about "learning" or "learning organisations". Little wonder—for in everyday use, learning has become synonymous with "taking in information" (p.13).

Is learning seen as a passive, imposed activity without any control or choice for the learner? Has learning "lost its central meaning" as Senge proposed?

Pitman (1999) argued that further research into museum learning was required as there was a lack of consensus within the museum community about what learning in museums actually meant and how it was manifest. The issue raised was that approaches to and modes of learning were changing so rapidly that users '… have become more sophisticated and more selective in what, how, and why they wish to learn' (p.73), with a wide variety of learning opportunities now available. How do learners make choices about their approach to learning from the wide variety of experiences available? Where are museums placed within a range of educational and learning experiences?

Some writers have suggested that any attempts to be popular through listening to and responding to visitors and providing experiences tailored to their needs leads to "dumbing down" by taking the emphasis away from objects, content and scholarship:

> The usual argument is that to focus on experience is to pander to the audience and to attenuate the subtlety and nuance of what is being communicated (Skramstad, 1999, p.123).

A related issue is that entertainment as a concept has become problematic, with a belief that if museums become entertaining they are somehow dumbing down to the audience and not being as educational as they are expected to be (Kilian,

2001; Kimmelman, 2001). Falk et al. (1998) concluded that museums '… need to redefine/rethink how we use the terms *education* and *entertainment'* (p.116, emphasis in original). Can learning experiences in museums be both educational *and* entertaining? Do visitors think there are real or perceived differences between the concepts of learning, education and entertainment? Do they think that if museums offer entertaining experiences they are failing in their learning goals or dumbing down?

1.1.3 "Thematising" learning

The third reason to study perceptions of learning in museums is that both Saljo's (1979) and Marton and Svensson's (1979) early work suggested that learning outcomes would be better if learners thought *about* their learning rather than merely learning *how* to learn. Saljo (1979) argued that real learning was concerned with abstraction of meaning and that the nature of what was learned was holistic, a point of view and an interpretation. He also proposed the idea of "thematising" learning, where individuals thought about learning as a concept beyond the acquisition and application of specific facts. Saljo concluded that the research focus should be on how learners conceptualised their ways of thinking about learning rather than how they thought they learned or what they learned.

Work with university students concluded that individuals who understood themselves as learners exhibited better learning outcomes across a range of measures (Biggs, 1979; Clarke, 1995, 1998; Hand, Treagust & Vance, 1997; Norton & Crowley, 1995; Saljo, 1979; van Rossum & Schenk, 1984). Taylor (1996) found that students who were most reflective about their learning, as well as flexible and adaptable in their approaches to learning, tended to be more academically successful. Pramling (1996) discovered that children who recognised and understood the process of learning were more focussed on *why* they were learning as well as the content of their learning.

Museum research has demonstrated that visitors with strong learning agendas learned more from their visit (Falk et al., 1998; Packer, 2004). Hooper-Greenhill (2004a) found that museum experiences which were active and encouraged

investigation led to more positive "learner identities" among the children sampled. Rowe (1998) suggested that further work needed to be undertaken to obtain broader views about learning from a range of stakeholders, including visitors, in order to understand the different assumptions made and the impact these have on the way the organisation thinks about learning and their public program policies.

Sfard and Prusak (2005) argued that *learning* played a key role in shaping identities, especially given

> … these times of incessant change, when the pervasive fluidity of social memberships and of identities themselves is a constant source of fear and insecurity (p.19).

Hooper Greenhill (2004a) discussed the idea of learning identities in a museum context. In this thesis learning identity has been defined as how individuals describe learning within a sociocultural context, including their future views of learning and the roles learning plays in their lives.

1.2 Research Questions and Approach

The primary research question addressed in this study was:
What are the interrelationships between adult visitors' views of learning and their learning experiences at a museum?

The research was framed under an *interpretive approach* which aims to investigate meanings from an individual's point of view. The main assumption underlying interpretive research is that the complexities of social realities can only be revealed through understanding the personal meaning of an individual (Carr & Kemmis, 1986; Silverman, 1995; Usher, 1996). It has also been suggested that there is no one single explanation of an action, there are multiple ones (Merriam & Simpson, 1995). The goals of interpretive research are to uncover these meanings and make sense of them across a range of sociocultural contexts (Erickson, 1987; McIntyre, 1998; Schauble et al., 1996; Schauble et al., 1997).

The interpretive approach was considered appropriate as one aim of this study is to investigate new ideas and develop theories about how individuals' learning identities both inform and are informed by experiences when visiting museums. The interpretive approach is concerned with human choice and meaning (Carr & Kemmis, 1986; Erickson, 1987; Usher, 1997), therefore, investigating how the elements of visitors' museum learning experiences can be understood could inform strategies that lead to improvements in practice.

The study was undertaken in two phases. **Stage One** investigated learning from the individual's perspective, uncovering personal philosophy and views about learning. The following areas were focussed on:

- How do adult museum visitors describe learning?
- How is learning viewed in relation to education and entertainment?
- How do adult museum visitors go about learning something new?
- What resources and places are accessed when learning?
- Where do museums fit in people's learning lives?
- Are there similarities and differences across samples in the ways learning is described?

Eight in-depth interviews and 100 questionnaires with adult visitors to the Australian Museum, Sydney were conducted in Stage One. As well, a telephone survey of 300 Sydney adults was undertaken to compare responses of Museum visitors with the general population.

After analysing the data from Stage One a new question arose: *How does a visit to an exhibition interact with an adult visitors' learning identity?* This was explored in **Stage Two**, which addressed the following sub-questions:

- How well do the learning opportunities provided by museums match how an individual likes to learn?
- What roles do visitors play in a museum visit and do these roles influence their learning identity?

Ten groups of visitors were interviewed before and after a visit to an exhibition at the Australian Museum. During the visit their conversations were audio-taped and detailed behavioural observations undertaken.

1.3 Research Context

Yates (2004) argued that educational research needs to both fit within the research community in which it is based, as well as extending it. This study was situated within the museum sector, specifically the Australian Museum, Sydney, with methods being developed from approaches to museum audience research and museum learning research. The next sections expand on these areas to provide the overall context for the study.

1.3.1 Audience research in museums

Audience research is a discipline of museum practice that provides information about visitors and non-visitors to museums and other cultural institutions, influencing the ways museums think about and meet the needs of their audiences and stakeholders. Audience research is also a strategic management tool that provides data to assist museums more effectively plan and develop exhibitions and programs; to meet their corporate goals; and to learn as organisations. McManus (1991b) pointed out that

> … audience evaluation is fundamental to all aspects of museum planning. If changes are to be made in any avenue of institutional endeavour they need to be informed by a comprehensive description of the audience and it's likely behaviour (p.35).

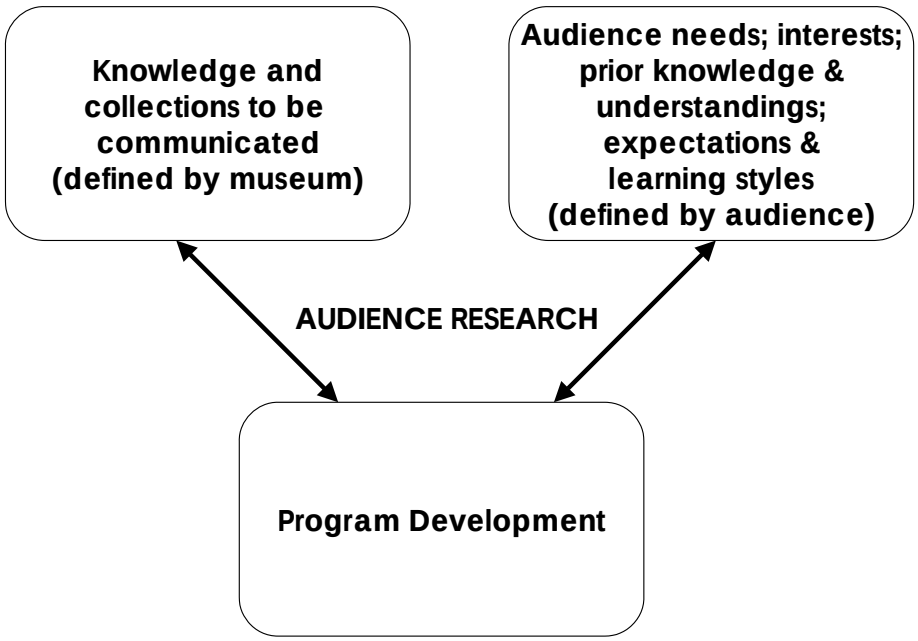
In audience research a range of methods are used to address issues such as who visits; motivations; behaviour; satisfaction and learning; as well as who does not visit and why. Areas examined include visitor demographics, visitor behaviour, leisure habits and learning strategies and outcomes.

One way of explaining the relationship between audience research and museum practice has been described as the "transaction approach" (Seagram et al., 1993), where audience research is the intermediary between mission and market approaches to museum programming. Public programs and exhibitions are

> … informed by the transaction between the body of knowledge to be communicated on the one hand [mission], and the public's interests, initial biases, and understandings of the subject matter on the other [market]. The goal of such a transaction is informative, challenging, and enjoyable dialogue between the museum and its diverse audiences (Seagram et al., 1993, p.33).

The transaction occurs through bringing together organisational goals and audience requirements by developing programs that satisfy the needs and objectives of both, illustrated in Figure 1.1.

Figure 1.1. Transaction approach to museum program development



(adapted from Seagram et al., 1993, p.33)

The long history of audience research in the cultural sector demonstrates the interest museums have had in their visitors over time (Black, 2005; Gilman, 1923; Hein, 1998; Loomis, 1987). Studies have been conducted since the late nineteenth century, with one of the first undertaken in the 1880s with visitors to the Liverpool Museum, United Kingdom (Hein, 1998). An early influential figure in audience research, Benjamin Gilman, wrote in 1918:

> To fulfil its complete purpose as a show, a museum must do the needful in both ways. It must arrange its contents so that they can be looked at; but also help its average visitors to know what they mean. It must at once install its contents and see to their interpretation (quoted in Black, 2005, p.121).

Gilman's work formed the foundations of what is currently a rich and prolific field of museology (Black, 2005; Hein, 1998; Kelly, 2005; Loomis, 1987).

1.3.2 Museum learning research

Over the past 15-20 years increasing emphasis has been placed on research into museum learning. This paralleled the move towards a body of research that is more qualitatively-based, answering complex questions, rather than quantitatively-focussed on narrow organisational problems (Hilke, 1993; Kelly, 2005; Miles, 1993). For example, a range of new research into learning in museums, undertaken by the Museum Learning Collaborative in the United States, examined learning in art, history, natural history, science, living history museums and other outdoor venues with a focus on visitors' conversations (Leinhardt, Crowley & Knutson, 2002; Leinhardt & Knutson, 2004; Leinhardt, Knutson & Crowley, 2003; Paris, 2002). These researchers recorded and analysed visitor conversations and investigated the subsequent meaning making they revealed in visitors' everyday lives, within part or whole exhibitions, and among groups of visitors. Their work also demonstrated the trend towards an increasing emphasis on research that gives voice to visitors themselves (Kelly, Savage, Griffin & Tonkin, 2004; Rennie & Johnston, 2004). This builds together into a '… multilayered, compelling, accurate, but still comprehensible story: a story of real people, living real lives' (Falk, 2004, p.S93).

1.3.3 Research location: The Australian Museum, Sydney

This study was undertaken with visitors to the Australian Museum, Sydney. The Museum was established in 1827 and is Australia's (and one of the world's) oldest natural history and anthropological museums. The current building and collections reflect that century's approaches to natural history museums (Bennett, 1995a; Strahan, 1979) seen in similar museums around the world (such as the American Museum of Natural History, New York; Field Museum, Chicago; Smithsonian Natural History Museum, Washington; and the Natural History Museum, London).

The mission of the Australian Museum is 'Inspiring the exploration of nature and cultures' (Australian Museum, 2005, p.1). The primary functions of the Museum are to make information, collections and research available to a wide range of audiences through undertaking scientific research and managing a vast range of collections in the areas of zoology, mineralogy, palaeontology and anthropology. As well, public communication and learning through physical exhibitions, public programs, publishing, regional outreach and online delivery of services are ways the Museum communicates with a wide variety of audiences (Australian Museum, 2005).

The Museum attracts between 250,000-400,000 visitors to the College Street site each year, depending on what exhibitions and programs are showing during the year (Australian Museum Audience Research Centre, 2006). There are currently about 235 staff working at the Museum, with almost 100 based in the public programs and creative services areas. The Museum has a changing exhibition program, with a combination of exhibitions shown that are either developed in-house by Museum staff or externally by other museums in Australia and overseas. Project teams, comprised of staff from both curatorial and public program areas, are formed to work on exhibitions. Audience research plays a key role in exhibition planning, with findings from targeted evaluation studies and more general research projects being accessed at all stages of the development process (Kelly, 1996, 2005).

1.4 Significance

This study is significant in four ways. First, the literature review identified that learning is a key issue for museums, yet the ways that visitors think about learning has not been addressed in any detail so far. One study with visitors (Combs, 1999) and two with museum staff (Environmetrics, 1998; Rowe, 1998) have been undertaken to date looking at this area. This thesis uncovered descriptions of learning from adult museum visitors, enabling the concept of learning to be unpacked from both an individual visitor's perspective and across a broader sociocultural context.

Second, the thesis makes a contribution to general knowledge about how adult museum visitors think about learning. When given the opportunity to articulate their personal views about learning, adult museum visitors revealed wide-ranging and deep understandings of themselves as learners. The literature review showed that visitors learn a great deal from museums across a diverse range of content areas and at many different levels. However, it was also found that visitors could learn more about the concept of learning as well as their own learning processes if they were encouraged to think about learning before they engage with an exhibition.

Third, a framework for understanding museum learning from the visitor perspective was developed. The *6P model of museum learning* encompasses person, purpose, process, people, place and product. It was found that each of these elements impact differently on visitors in many ways. It is suggested that, when developing museum public programs, addressing each category could assist in both providing better learning experiences for visitors, and in researching subsequent visitor learning.

Finally, the outcome of this research will assist museums to better understand learning from the visitor's perspective, therefore enabling them to provide better learning outcomes for visitors and to position themselves as places of learning in ways that match how visitors describe learning.

1.5 Thesis Structure

Chapter 2 is the literature review outlining the context of the study with a focus on learning and identity. First, the issue of learning is discussed, looking generally at how learning has been defined; the major theories that have informed museum education and learning; and how the concept of learning has been studied across a range of environments. Then, the concept of identity and how it both relates to and has been researched in museums is detailed.

Chapter 3 outlines the interpretive approach as a framework for the study. It then reports the methods—in-depth interviews, questionnaires, pre- and post-visit interviews, conversations and observations. Sampling, reliability and validity, and data analysis challenges for Stage One and Stage Two are also discussed.

Chapter 4 presents the findings from Stage One, looking at how learning was described by museum visitors, whether it was seen as being different from education and entertainment and how participants learned something new.

Chapter 5 analyses and discusses the Stage One findings and their relationship to the literature. The chapter introduces the *6P model of museum learning* which was used as a framework to organise the discussion of the findings. One outcome from Stage One was that an individual's ideas about learning forms an integral part of their identity, which led to a range of further questions examined in Stage Two.

Chapter 6 describes Stage Two of the study, which was located within the context of an Australian Museum exhibition and the impacts of that experience on adult visitors' learning identities. The sample, analysis and findings from Stage Two are also included in this chapter.

Chapter 7 draws together the findings from the entire study. It was found that a visitor's learning identity was both *integral*, a part of themselves, and *derivative*, influenced by the sociocultural context of the museum visit. It is proposed that the 6P model of museum learning can be used as a way to both explain and theorise museum learning. The implications these outcomes have for museums are also presented.

1.5.1 Terminology and Conventions

Table 1.1 describes the terms and the conventions used throughout this thesis.

Table 1.1. Terminology/Conventions

Term	Meaning Applied In This Thesis
audience research	A discipline of museum practice that provides information about visitors and non-visitors.
informal learning	Learning which occurs outside places such as schools and universities, that happens without the intervention of an instructor or teacher.
learning identity	A person's learning identity is defined as how individuals describe themselves as a learner within a sociocultural context, including their future views of learning and the roles learning plays in their lives.

museum	For the purpose of this study the term "museum" covers cultural institutions including natural history and social history museums, science centres, historic houses and art galleries, that have public programs and exhibitions that are physically visited by a variety of people.
Museum, first letter capitalised	Refers specifically to the Australian Museum, Sydney.
public program	The activities, services and exhibitions offered by museums to a range of audiences at a physical location (excluding online experiences offered via the internet).
exhibition	A type of public program where museum collection items are exhibited and augmented by interpretive devices such as text panels, object labels, interactives (physical and computer), audio-visuals and face-to-face interpretation. Specific Australian Museum exhibitions referred to in the text are named in *Italics*.
exhibit	A part or component of an exhibition, for example a computer interactive; video; a showcase of objects and accompanying text; or a smaller section of an exhibition.

Conventions Used In This Thesis	
Bibliography and referencing	The bibliography and referencing follow APA Published style (American Psychological Association).
data presentation	*n* is used to represent the total number of questionnaire respondents. *N* is used to represent the total number of responses to a specific open-ended question.
headings	Three levels of major headings and sub-headings are used in this thesis. Within a paragraph the use of **bold** denotes a new subject under the third heading level.
photographs	All photographs in Chapter 6 are from the *Uncovered* exhibition, and are ©Australian Museum, Sydney.
quotes	Quotes from the literature are presented between ‘ and ’. Quotes from the literature which are 20 words or longer are presented in this typeface and indented. *Quotes from the data are presented in this typeface.*
tables, figures and appendices	Tables and figures have been numbered consecutively within each chapter. Appendices are numbered consecutively.

terms used to denote different sets of study participants	***In-depth interviews***: eight adults interviewed who had visited the Australian Museum in the previous six months. ***Questionnaire respondents***: 100 adult visitors interviewed at the Australian Museum. ***Telephone survey:*** 300 adults from the Sydney region interviewed by telephone. ***Participants*** is used when referring to the total sample in Stage One and Stage Two. ***Primary participant*** is used when referring to the individual, within the group, whose conversation was recorded in Stage Two.

Chapter 2. Learning and Identity: Literature Review

This chapter focusses on literature that addresses learning and identity, both as general concepts and their application within a museum context. First, general theories of learning are outlined, with a particular emphasis on those that have influenced museological theory and practice. Then, literature that has investigated what learning means in the general population, and specifically in museums, is examined. Third, literature describing identity that shaped Stage Two of the study is presented, followed by how the concept of identity has been applied in a museum context. From the literature reviewed in this chapter a gap was identified in studying what museum visitors think learning is and the role museums play in shaping an individual's learning identity—the focus of the present study.

Learning and identity are fundamental parts of being human and are inextricably linked. The philosopher Rene Descartes' thoughts about the nature of human existence were grounded in the processes of thinking and learning:

> I can doubt everything except one thing, and that is the very fact that I doubt. But when I doubt I think; and when I think I must exist … I think, therefore I am (quoted in Hergenhahn, 1982, p.37).

Learning is essential to our humanity, something that separates us from other species: 'Learning is as crucial and fundamental as being alive' (Claxton, 1999, p.6). Learning is an individual and social process that humans are constantly engaged in, both consciously and unconsciously. As management theorist Peter Senge (1992) said:

> Real learning gets to the heart of what it means to be human. Through learning we re-create ourselves. Through learning we become able to do something we were never able to do. Through learning we reperceive the world and our relationship to it. Through learning we extend our capacity to create, to be part of the general process of life. There is within each of us a deep hunger for this type of learning (p.14).

Learning is a rich, complex, active and lifelong process of '… change in an individual's knowledge, skills, attitudes, beliefs, feelings, and concepts' (Hein & Alexander, 1998, p.10), which is undertaken both alone and as part of a community within a sociocultural context, where

> … learning is not something that happens, or is just inside the head, but instead is shaped by the context, culture and tools in the learning situation (Hansman, 2001, p.45).

A person's identity is how they see themselves in relation to their world and their role within it. Identity is fluid, shaped by the social context and membership of a community and changes across a person's life cycle (Kidd, 2002; Vander Zanden & Pace, 1984; Wenger, 1998). It includes a range of factors such as age, gender, cultural background, socioeconomic status as well as general life experiences (Fienberg & Leinhardt, 2002). Identity is an integral part of a person's personality and how others perceive them (Paris, Byrnes & Paris, 2001). Identity not only influences who a person is now, but also how they behave and conceive of themselves in the future. Identity assists individuals to '… cope with new situations in terms of … past experiences [while providing] tools to plan for the future' (Sfard & Prusak, 2005, p.16). Sfard and Prusak argue that learning plays a key role in shaping identities, given

> … these times of incessant change, when the pervasive fluidity of social memberships and of identities themselves is a constant source of fear and insecurity (p.19).

2.1 Early learning theories and classifications

Theories about learning have been proposed since the times of the philosophers Confucius (551-479 BC), Plato (428-348/7 BC) and Aristotle (385/4-322 BC). Aristotle used empirical observations about biological and physical phenomena to suggest that all knowledge was based on sensory experiences that had been processed by the mind (Bowen & Hobson, 1987; Hergenhahn, 1982). Aristotle had a profound influence on the further development of both educational and psychological theory, probably being the first to associate learning with pleasure through his ideas about the inextricable links between happiness, virtue and

contemplation, and the '… idea of liberal education as a leisure time activity and as an end in itself' (Bowen & Hobson, 1987, p.87).

Confucius framed learning as an essential quality of how life is led based on a person's moral obligations to others:

> To love benevolence without loving learning is liable to lead to foolishness. To love cleverness without loving learning is liable to lead to deviation from the right path. To love trustworthiness in word without loving learning is liable to lead to harmful behaviour. To love forthrightness without loving learning is liable to lead to insubordination. To love unbending strength without loving learning is liable to lead to indiscipline (Confucius, undated, p.144-145).

Reviewing the learning theory literature was a complex task. Part of the difficulty was that learning theory is embedded within a number of overlapping and interrelated fields, such as educational theory, psychological theory and educational psychology. Each of those areas have developed a whole body of theoretical discourse and research relevant to learning. Sometimes the terms "education theory" and "learning theory" have been used interchangeably (Bowen & Hobson, 1987; Woolfolk, 1998). Similarly, some views about learning and education are located within a social and political context, where education is seen as a political process, a force for change and equality, and a fundamental human right (Bruner, 1986; Dewey, 1916, 1938; Freire, 1970). Malone (1990) observed the close link between learning theory and the development of psychology. Given these complexities however, several ways that learning theories have been classified and organised were identified.

One historic review of learning theory was undertaken by Malone (1990), who described seven "foundational" theories of learning:

1. Pavlov's theory of classical conditioning.
2. Thorndike's examination of the laws of effect through studying cats in maze boxes.
3. Behaviourism as illustrated by Watson's work.

4. Guthrie's "simple" theory of learning that in a given situation humans will do what they did in the previous one, and that learning does not necessarily mean improvement.
5. Hull's emphasis on biology, stimuli and response, and testing assumptions through experimentation.
6. Tolman's cognitive theory focussing on the capacity of humans to form representations of their environment.
7. Skinner's comprehensive ideas focussing on the relationships between stimulus-response and consequences.

Malone noted that new theories did not necessarily supersede older theories because elements were often expanded and integrated into new applications that could not have been imagined by the original proponent. Some examples he cited included:

- Studying attitude formation through understanding Pavlov's theory of classical conditioning.
- How John Watson applied his theory of behaviourism in his post-academic advertising career.
- The development of information processing and computer programming systems that used ideas first proposed by Hull.
- Treating drug addiction through applying elements of Skinner's theory of behavioural consequences and stimulus-response behaviour.

Another way of examining learning theory was the proposition that historical approaches to theorising and researching learning were contained within four paradigms: functionalist, associationistic, cognitive and neurophysiological (Hergenhahn, 1982; Hergenhahn & Olson, 1997). These authors noted that these categories were only indicative, as theories of learning have elements that cross-over into other paradigms, with each emphasising certain aspects of learning and de-emphasising others. They also further divided theories into two types according to whether they were predominantly *behaviouristic*, relying on some external influence on the learner, or *individual*, with the learning generated from within the person (Table 2.1).

Table 2.1. A classification of learning theories

Behaviouristic: external	Individual: internal
Functionalist: reflects the influence of Darwinism in stressing the relationship between learning and the environment. Includes theorists such as Thorndike, Skinner and Hull. Believe that learning should be studied empirically. Watson argued that behaviour was the only thing we could actually see (as opposed to the internal workings of the mind that we can't see).	***Cognitive***: stresses the cognitive nature of learning. Includes theorists such as Piaget and Bandura, as well as the field of gestalt psychology which focussed on a holistic approach to understanding the individual. Emotions, attitudes, perceptions and intellects are key to reaching understanding.
Associationistic: studied learning using laws of association first proposed by Aristotle, and taken up by philosophers such as Locke, Berkeley and Hume. Believed that ideas came from sensory experiences and build from simple to complex and that nothing existed unless we associate it with something we know from experience. Includes theorists such as Pavlov and Guthrie.	***Neurophysiological***: attempts to isolate learning, perception, thinking and intelligence through looking at the processes that happen in the brain and the nervous system. Pioneered by Hebb's laboratory work that included the study of sensory deprivation, fear, arousal and memory.

(Source: adapted from Hergenhahn, 1982; Hergenhahn & Olson, 1997)

Hergenhahn (1982) concluded that learning needed to be viewed in many ways because

> … in order to obtain the most accurate picture of the learning process, one must be willing to view it from a number of different angles (p.49).

Dewey (1938) stated that true learning has '… longitudinal and lateral dimensions. It is both historical and social. It is orderly and dynamic' (p.11). More recent learning theories have focussed on the conjunction between the individual learner and the sociocultural context of the learning, with an emphasis on the individual as an agent of change (Fosnot, 2005; Rennie & Johnston, 2004). Those theories that have been particularly applied in museums are reviewed and discussed in the next sections.

2.2 Theories informing museum education and learning

The practice of education in museums has a long history (Hein, 1998; Hooper-Greenhill, 1994; Roberts, 1997). Whichever theory was foregrounded by scholars and practitioners was largely dependent on both their epistemological position; their background and training; and their beliefs about how knowledge was created. As Hein argued (1998) whether knowledge was acquired independently of the learner or constructed in the mind by the learner was an important component of how learning was viewed and what epistemological path was followed. This section outlines the major theories that have impacted on the practice of museum education and learning and how each has been applied in museums. As noted previously it was difficult to classify theories neatly into distinct groups. For the purposes of the literature reviewed in this section five categories have been used to organise the relevant theories—behavioural; cognitive; social; constructivist and sociocultural—with their relevance to museums also outlined. Finally, as museums are located within the leisure sector (Lynch et al., 2000; Merriman, 1989; Prentice et al., 1997) the idea of enjoyment in learning is discussed.

2.2.1 Behavioural theories

Theories that are behaviourally-based were first proposed by Pavlov, and then further developed by psychologists such as Skinner and Watson (Hergenhahn & Olson, 1997; Hilgard, Atkinson & Atkinson, 1979). The behaviourist paradigm suggests that learning is the result of a change in behaviour in response to some external stimulus. The change could be brought about either through "classical conditioning" when two stimuli go together, demonstrated through the experiments conducted by Pavlov. The other way is through "operant conditioning", when an organism learns that a response leads to a particular consequence, shown in work of Skinner (Hilgard et al., 1979).

Hein (1998) stated that museums with stimulus-response approaches to education would have exhibitions based on **didactic** (or expository) education, illustrated by modes of transmission that incrementally add to knowledge through

traditional lectures and text. Didactic learning is based on a teacher-student model where the teacher imparts information which the student absorbs in a logical, rational sequence. It mainly involves teaching facts to an "empty vessel" that may not be relevant or interesting. Hein identified that museum exhibitions based on a didactic model are sequential and ordered; have a clear beginning and end; with ideas arranged from simple to complex; and texts that describe what is to be learned.

Another aspect of behaviourist approaches to learning is **discovery learning** (also called "hands-on" learning). Discovery learning represented a shift in thinking from imparting information, to focussing on the needs of the learner, with the emphasis moving from teaching to learning. Discovery learning became widely embraced in informal learning and museum contexts with children's museums, in particular, utilising discovery learning as a framework for structuring their exhibitions and programs (Falk & Dierking, 2000; Zervos, 2003). Museum exhibitions based on a discovery learning model have a wide range of active learning modes that allow for exploration, asking questions and encouragement for visitors to find out for themselves (Hein, 1998).

However, some problems with discovery learning have been identified. Although discovery learning encouraged an active process of engagement it still focussed on '… specific educational outcomes … the learners will learn those things *we* wish them to learn' (Hein, 1998, p.31, emphasis added). The difficulty with the discovery approach to learning is the concern that learners may not attend to key aspects of the situation or materials presented or may "discover" things that were not intended or relevant, resulting in misinterpretations of the message (Borun, Massey & Lutter, 1993; Hein, 1998).

2.2.2 Cognitive theories

Cognitive theories view learning as a process that happens inside a person's head, and are developmental, occurring across all stages of an individual's life. Cognitive theories most relevant to museums are Piaget's stages of development, Gardner's multiple intelligences and Bruner's work on narratives.

Jean Piaget (1896-1980) was a Swiss developmental psychologist and a significant figure in influencing not only thinking about development, cognition and learning (Flavell, 1977; Piaget, 1952, 1963), but also the methods used to gather and report data (Hein, 1998). Piaget proposed that thinking processes constantly change as humans grow and mature from birth to death, and the ways humans interact with the environment, both learning from it and shaping it. **Piaget's stages of development**—sensorimotor, preoperational, concrete operational, and formal operational—formed the basis for many approaches to education, teaching and learning. Although Piaget was a pioneering figure in the study of children's cognition, his theories were criticised in three areas (Woolfolk, 1998). First, it was felt that not all children develop in the same way and pass through the stages sequentially. Second, there is a belief that Piaget underestimated the cognitive abilities of children, especially very young children. The third criticism is that he didn't adequately account for the effects of social and cultural groups on development and learning. Yet, as Hein (1998) explained, one of Piaget's lasting legacies was in the naturalistic methods he employed, including the detailed reporting of raw data that gave children a voice within the research process.

Howard Gardner (1993) proposed seven different intelligences in his theory of **multiple intelligences**:

1. *Linguistic intelligence* where a learner is sensitive to the spoken language and exhibits skills in learning languages and uses language as a tool of persuasion.
2. *Logical-mathematical intelligence* which is the logical and analytical aspects of learning, with a focus on problem solving and scientific thinking.
3. *Musical intelligence* where a learner has good listening abilities and responds well to sound, pitch, tone and rhythm.
4. *Bodily-kinesthetic intelligence* where active learning takes place through physical, hands-on activity, and is also related to mental activity.
5. *Spatial intelligence* covers the visual aspects of learning, where a learner has good visual recall and is able to recognise patterns.
6. *Interpersonal intelligence* means that a person is able to work well with others and often exhibits a good understanding of the motivations and intentions of others.
7. *Intrapersonal intelligence* is where a learner has good self-awareness and is self-motivated, able to regulate and control their life.

Gardner (1999) later added an extra intelligence, *naturalistic intelligence*, focussing on a preference for outdoor activities and the rhythms and patterns in nature.

Gardner argued that these were not learning styles, but ways to understand and assist learners in activities where they may be experiencing difficulties or that provide new challenges. Gardner revisited the intelligences after twenty years to see if they were still applicable (2003). He concluded that while there could be arguments made for new intelligences, such as emotional, spiritual and sexual, he felt that these were already addressed through investigating the relationship between the eight intelligences and better understanding how they worked together. Gardner also welcomed the fact that new ways to conduct biological research, for example genetics and electrophysiological technologies, could mean that evidence might be found in future that could confirm or revise his theory.

Roberts (1997), in discussing Gardner's work, speculated that different views of the world (such as those that may be presented in a museum exhibition) would be derived from the intelligences that the visitor was best equipped to deal with. She also recognised that his theory was a '… way of talking about the mental processes that are used to represent the world' (p.141). Zervos (2003) used the frame of multiple intelligences when researching the role that computer technology played in assisting young children's learning in art museums, focussing on art theory and visual literacy.

The potential of **narrative** approaches to learning have been explored more recently by museums. It is recognised that humans are natural storytellers—since ancient times humans have been using stories that represent an event or series of events as ways to learn (Abbott, 2002). Bruner (1986) suggested that humans employed two modes of thought—paradigmatic (or logico-scientific) and narrative. He described imaginative narrative as leading to

> … good stories, gripping drama, believable (though not necessarily "true") historical accounts. It deals in human or human-like intention and action and the vicissitudes and consequences that mark their course. It strives to put its timeless miracles into the particulars of experience, and to locate the experience in time and place (Bruner, 1986, p.13).

Museums are ideal places where stories can be told that encourage visitors to make their own meanings. Bedford (2001) noted that:

> Stories are the most fundamental way we learn. They have a beginning, a middle, and an end. They teach without preaching, encouraging both personal reflection and public discussion. Stories inspire wonder and awe; they allow a listener to imagine another time and place, to find the universal in the particular, and to feel empathy for others. They preserve individual and collective memory and speak to both the adult and the child (p.33).

Ideas about narratives have been developed and applied to museums by a range of writers and researchers. Allen (2004b) researched the use of narrative tools as ways for visitors to make meanings about science. Allen defined narrative in a museum context as taking the personal perspective; involving a series of events; containing emotional content and authentic in origin, with someone telling the

story. Allen (2004a) also drew attention to the problem that the museum sector still does not clearly understand how the power of narrative could be used to enhance visitor learning, specifically about scientific principles. McLean (2003) described the ways visitor experiences could be constructed in different types of learning environments, using the analogy of "the campfire, the cave and the well".

Bedford (2001; 2004) and Rounds (2002) considered that narrative was a powerful way that cultural and social history museums, in particular, engaged visitors, with Bedford even proposing that storytelling was the "real work" of museums. Bedford argued that stories aided humans in defining their values and beliefs and allowed the listener to project their own thoughts, feelings and memories onto the story and '… make connections between museum artifacts and images and visitors' lives and memories' (Bedford, 2001, p.30). Roberts (1997) used the framework of narrative to explain the shifts in museum education theory over time, and suggested a narrative approach to educational practices as a way to enhance the ways visitors engaged with museums.

2.2.3 Social theories

Social learning has been widely discussed in the general learning literature (Dewey, 1938; Hansman, 2001; Lave & Wenger, 1991; Vygotsky, 1978; Wenger, 1998; Woolfolk, 1998). Confucius (undated) recognised the social nature of learning:

> If one learns from others but does not think, one will be bewildered. If, on the other hand, one thinks but does not learn from others, one will be in peril (p.65).

Dewey (1938) also talked about learning from both an individual and social perspective, concluding that learning was a lifelong experience that involved growth through personal judgment and the capacity to act intelligently in new situations. Learning is the interplay and interaction of objective (external) and internal factors, as well as a transition between the individual and the environment at the time. Dewey argued that the social situation was the key to learning, a shared common experience requiring an impulse and a desire through

interaction with the environment. He saw the "directing" of learning not as an exercise of power, but as a shared group event, given that learners are part of a community held together by common goals.

Rogoff (1999) referred to the conjunction between an individual and the social as the context of learning:

> … the physical and conceptual structure as well as the purpose of the activity and the social milieu in which it is embedded. One must attend to the content and the context of intellectual activity in order to understand thought processes … In order to function, people must be able to generalise some aspects of knowledge and skills to new situations (p.2-3).

Hooper-Greenhill (2000) describes how individuals are part of an "interpretive community", where meaning making is both personal and mediated through a range of interpretive communities with a shared common language and frame of reference. Visitors make their own personal meaning based on prior knowledge and experiences, and use their preferred approaches to learning within the context of an interpretive community. The resulting social interaction tests ideas and meanings, with others in the group acting as a frame of reference. "Communities of learners" (Matusov & Rogoff, 1995) is another term used to describe a participatory approach to adult learning, recognising that all participants share interests and expertise as equal partners in their learning.

Wenger (1998) identifies a number of principles of learning based within a social perspective. He concludes that learning (p.226-228):

- is inherent in human nature
- is first and foremost the ability to negotiate new meanings
- is fundamentally experiential and fundamentally social
- transforms identity
- builds personal histories in relation to histories of communities
- requires an individual to deal with boundaries
- is a matter of social energy and power
- includes engagement, imagination, and alignment
- involves an interplay between the local and the global.

Social learning theories have been applied to museums as they are ideal places where group learning can be encouraged and enhanced (Falk & Dierking, 1992, 2000; Fasoli, 2001; J. Griffin, 1998; Hooper-Greenhill, 2000; Leinhardt, Crowley et al., 2002; Matusov & Rogoff, 1995; McManus, 1987, 1988, 1994; Paris, 2002; Sachatello-Sawyer et al., 2002). People also tend to visit museums in groups (Falk, 1998; Falk & Dierking, 2000; Hood, 1995; Kelly, 2001; Landman, Fishburn, Kelly & Tonkin, 2005). The advantages of group visits are in the different levels of expertise that exist among members which allow for a broader range of meanings to be made and shared (Falk & Dierking, 2000; Fienberg & Leinhardt, 2002). Gunther (1994) stressed that social interaction is an important factor for adult participation in cultural events, with young adults and parents of young children in particular, valuing activities that promote social interaction and are entertaining. Packer and Ballantyne (2005) explored the social dimensions of learning by comparing solitary visitors with those in groups. They found that while the nature of learning differed during the visit, both sets of visitors had shared and discussed their experiences with others after their visit.

Of particular relevance to this study is **family group** learning. The role of the family is recognised as important in learning, and especially so in museum learning (Anderson, Piscitelli, Weier, Everett & Tayler, 2002; Ash, 2004; Baillie, 1996; Borun, 2002; Borun, Chambers & Cleghorn, 1996; Borun, Chambers, Dritsas & Johnson, 1997; Borun & Dritsas, 1997; Dierking, 2002; Ellenbogen, Luke & Dierking, 2004; Falk & Dierking, 2000; J. Griffin, 1998; Mitchell, 1999; Morrissey, 2002; Moussouri, 1997; Paris, 2002; Puchner, Rapoport & Gaskins, 2001). Over time a family's behaviour has been developed and refined and, coupled with the rich experiences provided by museums, combine to ensure that families are successful learning units. Families are used to learning together and have developed a range of personal learning behaviours and practices enhanced by their culture of sharing knowledge and experiences (Borun, 2002; Borun et al., 1996; Ellenbogen, 2002; Falk, 1991; Kelly et al., 2004; McManus, 1994; Moussouri, 1997; Stanton, 1999).

Falk and Dierking (2000) acknowledged the key role **accompanying adults** played in facilitating family learning:

> Parents can be effective facilitators for their children's learning when exhibitions are designed with collaborative learning in mind and when adults feel comfortable with the content and experiences provided in the museum (p.95).

One key finding from research into learning in children's museums showed that

> … children stayed longer at exhibits and learned more when they were accompanied by an adult who was actively involved in the activities (Puchner et al., 2001, p.255).

Stanton (1999) found that mothers and fathers took on different roles within a visit, with mothers more concerned with the logistics of the visit, and fathers seeing museums as "family business". Work on literacy and adult learning suggested that an orientation to lifelong learning and readiness to learn in later life was strongly linked to the family (Rubenson, 2000).

Lave and Wenger (1991) proposed a view of learning that located the process of learning as a co-participation in a **community of practice** rather than just in the heads of individuals. They argued that learning involved the whole person, including their relation to both specific activities and to social communities. Lave and Wenger's work made a significant contribution to the discussion of the social dimensions of learning advocated by Vygotsky (Daniels, 1996; Vygotsky, 1978). Their underlying premise was to look beyond learning as a cognitive process to a focus on the social context for learning, concentrating on what kinds of social engagement provided the best conditions for learning. Lave and Wenger suggested that learning requires involvement in a practice, not just as an observer but as a participant who also has a responsibility for the outcome: 'Learning is a process that takes place in a participation framework, not in an individual mind' (1991, p.15). They saw learners as active and contributing members of communities, becoming learners through involvement with, participation in and, finally, full acceptance into a community.

Hansman (2001) described communities of practice as

> … self-organised and selected groups of people who share a common sense of purpose and a desire to learn and know what each other knows (p.48).

Communities of practice also '… share expertise and passion about a topic and interact on an ongoing basis to further their learning' (Wenger & Snyder, 2000, p.3). Relationships over time and across contexts are important, as is the relation to many other communities of practice that co-exist and overlap (Lave & Wenger, 1991).

Communities of practice can be small, such as friends visiting a museum together where learning is '… always socioculturally "situated" within a larger culture and within the social setting of an event' (Falk & Dierking, 2000, p.47). On the other hand, a community of practice could also involve a broader involvement and engagement with multiple groups. Matusov and Rogoff (1995) proposed that museum learning was active participation in a community of learners, where all participants were recognised and treated as learners who shared interests and expertise. The museum's responsibility was to guide the process, but not control it:

> … both the visitors and museum staff are seen as active in structuring the inquiry, with museum staff assuming responsibility for guiding the process and visitors learning to participate in the management of their own learning (1995, p.98).

Fasoli (2001) used communities of practice to describe the ways that young children engaged with art galleries and to demonstrate how and what they were learning. The learning that resulted was seen as '… a social accomplishment – context embedded and continuously negotiated' (p.76). Fasoli particularly found that it was the aspects "outside" of a specific exhibition or program that children remembered and used in their post-visit constructions of their learning, which included their interactions with museum staff and actual features of the building.

2.2.4 Constructivism

Constructivism is a theory of learning that focusses on the learner and the meanings they make based on their prior experience, knowledge and interests. Fensham et al. (1994) noted that the underlying principle of constructivism is that

> … people construct their own meanings for experiences and for anything told [to] them. The constructed meaning depends on the person's existing knowledge, and since it is inevitable that people have had different experiences and have heard or read different things, all have different (though often similar) meanings for any concept (Fensham et al., 1994, p.5).

Fosnot (2005) suggested that constructivism was not a theory about how to teach, but a different way to think about how learning takes place through the relationships between teachers and learners:

> … a constructivist view of learning suggests an approach to teaching that gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns; raise questions; and model, interpret, and defend their strategies and ideas (Fosnot, 2005, p.ix).

A constructivist approach sees knowledge as being constructed in the mind of the learner with new information being integrated into an individual's existing cognitive schemata, and validated not by conforming to '… some external standard of truth, but whether they "make sense" within the structured reality of the learner' (Hein, 1998, p.34).

The learner as an active agent in control of their learning is an important feature of constructivist thought through '… building understanding and making sense of information' (Woolfolk, 1998, p.346). Harlen (1996) also mentions the active role of learners in

> … constructing ideas or concepts already formed from previous experience rather than absorbing them passively from teachers or other sources. In constructing meaning, a learner uses the ideas or concepts already formed from previous experience and attempts to make sense of new experience in terms of these existing conceptions (p.6).

It is also recognised that all cognition is situated within the context of the learning activity—what is learned is inseparable from how it is learned and how it is used (Fensham et al., 1994).

Constructivism as a theory has been discussed extensively in the context of science learning (Carr et al., 1994; Driver, Asoko, Leach, Mortimer & Scott, 1994; Harlen, 1996; Osborne & Freyberg, 1985), which makes it very relevant to museums, as many are concerned with visitor learning about nature, the environment and scientific constructs. Osborne and Freyberg (1985) developed the following set of principles for learning science based on constructivism:

- Understand different points of view (*clarify and analyse*).
- Understand how these views relate to everyday life (*relevance*).
- Clarify ideas that are relevant to the topic (*consolidation*).
- "Test" ideas against other viewpoints (*modification*).
- Consider these new ideas across a range of contexts/situations (*application*).

Harlen (1996) applied constructivism to developing childrens' scientific thinking through clarifying meanings; raising questions; developing hypotheses; predicting; gathering evidence (by planning, observing and interpreting); communicating and reflecting. Harlen also identified other important elements of constructivist approaches to learning science as curiosity; respect for evidence; flexibility; critical reflection and sensitivity.

Woolfolk (1998) summarised the main features of constructivist theory as displaying

> … complex, challenging learning environments and authentic tasks; social negotiation and shared responsibility as a part of learning; multiple representations of content; [and an] understanding that knowledge is constructed' (p.346).

Fensham et al. (1994) pointed out that 'Construction does not mean "anything goes"; some meanings are better than others' (p.6).

A good summary of the learning principles that emerged from constructivist thought were outlined by Hein (1991):

- learning is an active process of constructing meaning from sensory input
- people learn about the process of learning, as well as the content, as they learn
- learning happens in the mind
- language and learning are inextricably linked
- learning is a social activity in conjunction with others
- learning is contextual, in that we learn in relation to what we already know, to our beliefs and our prejudices
- previous knowledge is a pre-requisite to learning
- learning occurs over long periods of time, through repeated exposure and thought
- motivation is essential for learning.

Constructivism had a major influence on the ways that museums thought about learning during the 1990's. Hein (1999) explained that constructivist exhibitions enhanced learning through enabling visitors to both validate and also re-think their own interpretations of a subject by allowing them to consider other interpretations, perspectives and ideas about a topic. Museum learning experiences provided under a constructivist framework would encourage learners to use both their hands and their minds to experiment with the world and reach their own conclusions, through choosing what they want to attend to (Hein, 1998).

Many aspects of constructivism have been discussed in the museum literature, with particular attention given to prior knowledge, interest, choice and meaning making. Dewey (1916) recognised the role of **prior knowledge** and experience in learning, where learners must interpret new ideas within the context of their current interests and understandings. Paris (1997a) acknowledged the significance of prior knowledge where

> … people learn best when they actively manipulate the information to be learned and when that information builds on previous knowledge (p.22).

Roschelle (1995) noted that it was impossible to learn without some form of prior knowledge as that underpinned the construction of meaning. Hein (1999) identified the challenge for museums was in finding ways to make their exhibitions both relevant to people's everyday experiences, while assisting them to apply these experiences outside of the museum. Cole (1995) also maintained that experience was inextricably linked to the past, present and future and reiterated, as did Hein, the important role of the learners' prior experiences and how these related to their museum experiences. Doering and Pekarik (1996) proposed that visitors' came to museums with rich and deep prior experiences, or storylines, that they drew on to make sense of what they were interacting with, which they termed their "entrance narrative".

Interest has been identified as a key motivator in learning (Csikszentmihalyi & Hermanson, 1995; Pressick-Kilborn & Walker, 2002; Roschelle, 1995). Moussouri (1997) found that visitors' interests and motivations were often stronger after their visit than before. Csikszentmihalyi and Hermanson (1995) discussed applying their research into motivation for learning to museum settings. They suggested that if a museum visitor was both interested and engaged in an exhibition they would be ready to experience an intrinsically rewarding, optimal experience, which they called "flow".

Studies in museums have continually demonstrated that if people are not interested either in the content or the look of an exhibition they will just walk past without engaging with it (Allen, 2002; Beer, 1987; Bitgood & Patterson, 1993; Falk, 1991; Hein & Alexander, 1998; Kropf, 1992; Moussouri, 1997; Screven, 1995; Serrell, 1998).

Closely related to interest is the notion of **choice**. Key factors that support an individual's learning are being able to choose both what they want to do and how they access information (Dewey, 1916, 1938; Vygotsky, 1978; Wenger, 1998), especially in informal settings such as museums (Borun & Dritsas, 1997; Falk & Dierking, 2000; J. Griffin, 1998; Hein, 1998; Paris, 1997a; Schauble et al., 1996). Dewey (1916) recognised that education was not about "being told" or "telling

others", but an active construction by the learner. Park (1994) found that 89% of those surveyed in the United Kingdom agreed with the statement "People get more out of learning that they have chosen to do than they get from learning they are made to do". Griffin (1998) demonstrated that school children visiting a museum were well-able to be self-directed learners, and consistently declared their satisfaction with museum visits that provided them with choices.

In various studies of visitor behaviour in exhibitions, choice formed a key part of how visitors used exhibitions in terms of following their *own* paths, not those set by the museum, with visitors actively choosing which sections they did and did not attend to (Allen, 2004a; Beer, 1987; Falk, 1991; Falk, Koran, Dierking & Dreblow, 1985; Hein, 1998; McManus, 1987; Screven, 1990, 1995; Serrell, 1998). Choice is an important way that families, in particular, learn through screening information, interpreting meaning, and sharing their discoveries about interesting aspects of their visit (Borun et al., 1996; Borun & Dritsas, 1997; Ellenbogen, 2002; Kelly et al., 2004; McManus, 1994; Schauble et al., 1996).

A central tenet of constructivism particularly relevant to museums is **meaning making**. Jeffrey-Clay (1997) pointed out the relationship between prior knowledge and meaning making:

> Constructivist theory holds that prior knowledge is of primary importance. Rather than learners being empty vessels into which information can be poured, they come … with a wealth of knowledge already organised. It is upon this knowledge structure that learners hang new information, creating new links to their pre-existing knowledge. To learn meaningfully, a person must integrate new knowledge into his or her conceptual structure (p.3).

Hein (1991) stated that learning is the construction of meaning and argued that meaning making is an essential part of constructivism. Falk and Dierking (2000) suggested that meaning making is an innate mammalian response that constructs order out of chaos through finding patterns in nature. Meaning making has been described as making sense of complexities by building understanding through an individual's own experiences (Rice & Yenawine, 2002), in a constant and

iterative progression of remembering and forgetting (Silverman, 1995). Meaning making is achieved through

> … the stories we tell ourselves … In that sense, the individual viewers or learners are the ones who are best equipped to make their own meanings (Rice & Yenawine, 2002, p.292).

Meaning making can also be shared through a

> … process of negotiation between two parties in which information (and meaning) is created rather than transmitted … influenced by the social and cultural norms, attitudes and values that surround the communicators (Silverman, 1995, p.161).

As well as a social process, meaning making also occurs through engagement with cultural tools and materials exchanged and modified in conjunction with others (Stevens & Martell, 2003).

Although constructivism is supported by many museum practitioners, there are still some debates about its usefulness as an approach to developing museum exhibitions and public programs (Bitgood, 1997; Hein, 1997b; Miles, 1997). However, as Hein (1999) noted, constructivism is as much an epistemological approach to thinking about learning as it is a way to approach museum education. Silverman (1995) suggested that the challenge for museums in providing constructivist learning experiences is that:

> … the more personal and subjective ways in which visitors make meaning (such as through life experiences, opinions, imagination, memories, and fantasies) are at best ignored and more often invalidated in museums, where they tend to be regarded as naïve and inappropriate (p.165).

2.2.5 Sociocultural theory

Sociocultural theory is becoming increasingly prominent in current museum learning literature as a framework for research (Ellenbogen, 2003a, 2003b; Leinhardt, Crowley et al., 2002; Schauble et al., 1997). Sociocultural theory is based on the idea that human activities take place in cultural contexts through social interactions that are mediated by language and other symbol systems and shaped by an individuals' historical development (Ash, 2003; Matusov & Rogoff, 1995; Sedzielarz, 2003). It also understands, accounts for and makes explicit the '… unplanned intersection of people, culture, tools and context'

(Hansman, 2001, p.44), emphasising the importance of culture, environment and history in every learning context and event (Schauble et al., 1997). Sociocultural theory came from the work of Vygotsky (1978), who proposed that learning is a socially-mediated process where learners, both adults and children, are jointly responsible for their learning. Many of Vygotsky's ideas have been applied to museums (Anderson, 2003; Ash, 2003; Matusov & Rogoff, 1995; Roberts, 1997).

Falk and Dierking (2000) suggested that '... who we are, what we are, and how we behave are products of the sociocultural context in which we are immersed' (p.38). They concluded that learning was essentially an individual construct: 'The sociocultural context defines both who we perceive ourselves to be and how we perceive the world we inhabit' (p.39), as well as a social experience where

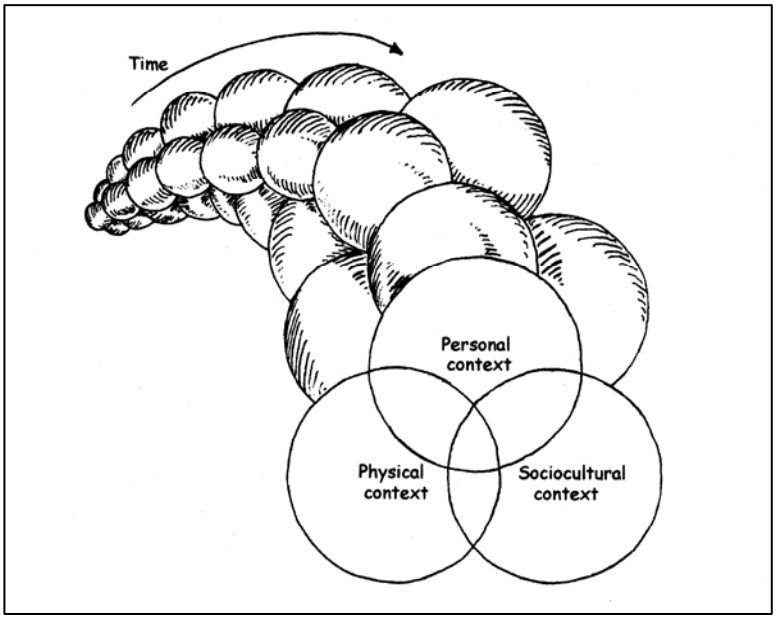
> … meaningful learning results when a person is able to actively construct and find personal meaning within a situation. Virtually all such learning is either directly or indirectly socially mediated (p.41).

They further argued that

> … all learning is situated within a series of contexts … an organic, integrated experience … a product of millions of years of evolution, an adaptation that permits an ongoing dialogue between the whole individual and the physical and sociocultural world he or she inhabits (p.10).

Falk and Dierking proposed the **contextual model of museum learning** to account for factors already identified in their earlier work (1992), but with a more holistic view that recognised the long-term nature of learning (Figure 2.1).

Figure 2.1 The contextual model of learning

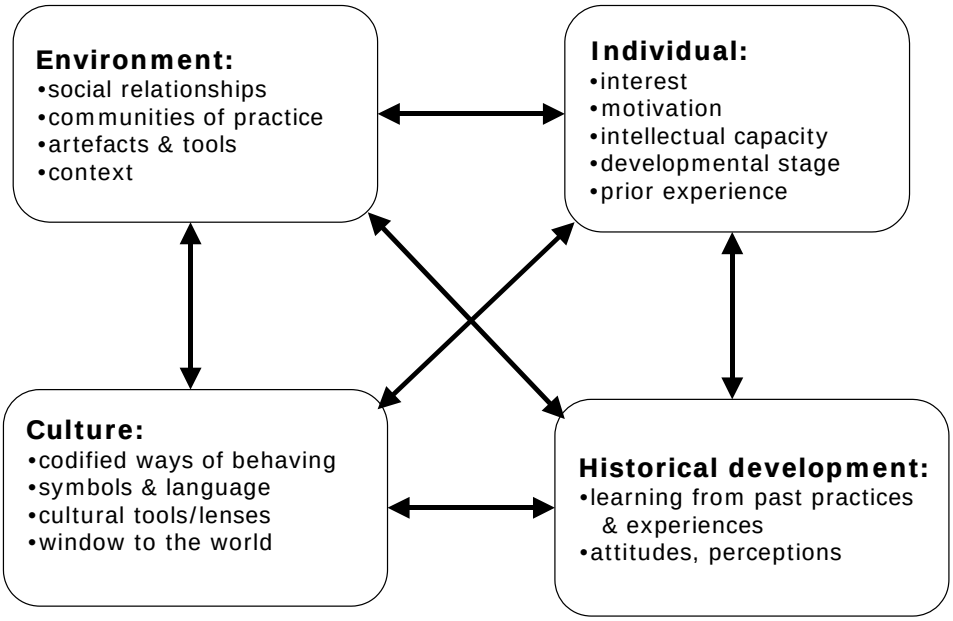


(Source: Falk & Dierking, 2000, p.12)

In the contextual model the *physical context* consists of the tools and settings of the museum, including architecture, design, objects and subsequent reinforcing events and experiences outside the museum. The *personal context* includes motivations and expectations, prior knowledge, experience and beliefs, interests, choice and control; as well as how these are perceived, filtered and ultimately incorporated into memory and learning. Finally, the *sociocultural context* accounts for within-group mediation, facilitated mediation by others and cultural mediation (Dierking, 2002; Falk & Dierking, 2000). Knowledge is constructed through social mediation across members of a group, both as an individual process and through participation in a community of practice.

Four elements that underpin sociocultural theory as applied to museums have been identified from the literature: individual, culture, environment and historical development (Ellenbogen, 2003a, 2003b; Falk & Dierking, 2000; Leinhardt, Crowley et al., 2002; Matusov & Rogoff, 1995; Paris, 1997b, 1998, 2002; Schauble et al., 1997). Figure 2.2 illustrates these ideas, demonstrating how they are interlinked.

Figure 2.2. Sociocultural theory



Several aspects of sociocultural theory relate to the **individual**, including interests, motivation, intellectual capacity and development. Initial approaches to museum learning were often focussed on the learner as an individual (Hein & Alexander, 1998; Screven, 1990). Although knowledge, learning and meaning making is essentially an individualised process, the social context and tools provided at the time are key factors in both what is learned and why it is learned, based on a person's interests and motivation. The important role of individuals, their intellectual capacity and level of development need to be acknowledged, coupled with the recognition that individuals also function within a sociocultural framework (Wenger, 1998).

Culture refers to a person's adaptive way of life which is formed through customary ways of behaving; sets of codes and signals; use of artefacts and tools; participation in formal and informal institutions and within a set of social relations. These, in turn, are codified through language (Falk & Dierking, 2000; Ogbu, 1995). A set of underlying assumptions make customary behaviours meaningful within a particular culture:

> Culture is the framework or "window" through which members of the population see the world around them, interpret events in that world, behave according to acceptable standard, and react to perceived reality (Ogbu, 1995, p.80).

As children develop they learn the appropriate behaviours and social norms of their culture that make customary behaviours meaningful within that culture. Falk (2004) points out that culture also plays a strong role in shaping an individual's identity.

In sociocultural theory **environment** encompasses the physical context, including the artefacts and tools that are provided, as well as social relations within a group and communities of practice (Lave & Wenger, 1991; Matusov & Rogoff, 1995). As discussed in Section 2.2.3, in a museum context a community of practice is comprised of the interplay between the mediation provided by the museum environment, in terms of objects, interpretive tools and texts, and individuals and their participation in a community such as a family, a school or a group of friends. These ongoing social interactions with artefacts and tools are where meaning is made and learning happens:

> … collective learning results in practices that reflect both the pursuit of enterprises and attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of shared enterprise (Wenger, 1998, p.45).

The **historical development** dimension in sociocultural theory accounts for cultural practices, as previously discussed (Ogbu, 1995), as well as lived histories and experiences within multiple communities of practice. The role of prior knowledge and interests (Roschelle, 1995) that shape attitudes, values and learning are also accounted for in historical development. Perceptions and expectations of museums, as well as previous experiences with them, are key

historical factors impacting on the individual. Research has continually found that the characteristic with the most impact on adult museum visits is whether they were taken to museums as children and the types of experiences they engaged in (Ellenbogen, 2002; Ellenbogen et al., 2004; Falk & Dierking, 1997; McManus, 1993).

Leinhardt et al. (2003) proposed a sociocultural definition of museum learning:

> … learning as meaning construction, a socially mediated phenomenon that was a consequence of dialogue among the curatorial premise, the supporting tools of signage and other symbol systems, and the visitors themselves … learning as a conversational elaboration [where] the language becomes enriched by specific details of objects and themes from the museum and reflects the affective and personal connections to the museum in a way that goes beyond simple statements of like or dislike or identification (Leinhardt et al., 2003, p.25).

It has been recognised that museums are sites where a sociocultural framework could be applied to learning since most people visit in some type of social group and come with specific prior interests and knowledge (Leinhardt, Crowley et al., 2002; Paris, 2002; Schauble et al., 1997). Museums are mainly free-choice, providing a wide range of tools which visitors use to make their own meaning, both as an individual and part of a community (Falk & Dierking, 2000; Hein, 1998). Paris (1997a) outlined the way that sociocultural views of learning could be integrated into a theory of museum learning. He stated that to facilitate meaningful learning museums need to create environments that encourage exploration and enable meaning to be constructed through choice, challenge, control and collaboration, leading to self-discovery, pride in achievements and learning, where visitors '… may "learn" more about themselves and their experiences through reflection' (Paris, 1997a, p.23).

Sociocultural theory has been suggested as an appropriate theoretical framework for museum learning research as it accounts for meanings made within a social context, rather than facts learned (Ellenbogen et al., 2004; Falk, 2004; Jeffery-Clay, 1998; Leinhardt, Crowley et al., 2002; Paris, 1997b; Rennie & Johnston, 2004; Schauble et al., 1997). In discussing museum learning Matusov & Rogoff (1995) stated that

> Museums, as educational institutions, provide opportunities for people to bridge different sociocultural practices and, through this process, to bridge different institutions and communities (p.101).

They further suggested that museum learning needed to be assessed

> … by analysing individuals' changing roles … [and] how they coordinate with others in shared endeavours, with attention to the dynamic nature of the activity itself and its meaning in the community (p.102).

The range of learning theories described in this section have played a key role in informing the practice of museum education over many years. However, learning as an enjoyable process and a meaningful leisure time activity has not been widely addressed in the literature. Bennett (1995b) discussed the early roles of museums in influencing "the masses" both as a leisure and an educational activity. More recently museums have been seen as integral components of the leisure sector (Burton & Scott, 2003; Lynch et al., 2000; Packer, 2003). Leisure and enjoyment are two areas investigated in this thesis, as described in the next section.

2.3 Enjoyment, leisure and learning

Museums have been intimately linked with the leisure sector, especially in studies related to marketing of museums (Burton & Scott, 2003; Crang, 1996; Harkin, 1995; Lynch et al., 2000; Masberg & Silverman, 1996; Packer & Ballantyne, 2002; Prentice et al., 1998; Ryan & Glendon, 1998; Scott & Burton, 2000; Tian et al., 1996; Witcomb, 2003). As discussed in Chapter 1 it was reported that strong motivations to visit museums are for leisure and entertainment (Moore, 1997; Packer, 2004; Packer & Ballantyne, 2002). For example, a survey of 413 Australian Museum visitors found that 71% of adults visited museums generally for entertainment purposes (Kelly, 2001).

Research into motivations and expectations from visits to educational leisure settings reinforced the importance of learning as both a key motivator and a measure of satisfaction with a visit, especially for museums (Packer, 2004; Packer & Ballantyne, 2002). In comparing what visitors felt about learning at a museum compared with an aquarium and art gallery, Packer (2003) found that learning at the aquarium was perceived as fun; at the art gallery learning was emotionally engaging; and at the museum learning was educational. Packer's work raised questions about the distinction between learning, education and enjoyment:

> … the museum was seen as more educational than entertaining, the aquarium was seen as more entertaining than educational, and the art gallery was seen as equally educational and entertaining (Packer, 2003, p.194).

Enjoyment coupled with a sense of achieving outcomes in interesting ways can significantly enhance learning (Anderson et al., 2002; Fasoli, 2001; Griffin, 1996; J. Griffin, 1998; Griffin, 2004; Groundwater-Smith & Kelly, 2003; Hein & Alexander, 1998; Kelly et al., 2004; Packer & Ballantyne, 2002; Roberts, 1997). Morgan and Beaty (1997) reported that students found learning easier if they could relate what they were learning to something already familiar to them and if the learning was enjoyable. Work undertaken in the formal education sector found that teachers who balanced scholarship *and* fun and made efforts to make

schoolwork interesting and enjoyable were better able to engage students in school learning (Martin, 2003).

However, fun and enjoyment is one component of learning that has not been examined in the museology literature in a great deal of detail (Dierking & Griffin, 2001; Roberts, 1997; Sachatello-Sawyer et al., 2002). Griffin (1998) found that school children visiting the Australian Museum felt that having fun just looking around and enjoying themselves didn't necessarily count as learning to them. Griffin suggested that this could be due to the tension that can exist between the perception of playing and learning among the adults accompanying the students.

A study with parents and museum staff (Schauble et al., 2002) found that museum staff described playing as the "children's agenda" and learning as the "museum's agenda". On the other hand, parents perceived these two components as a "trade-off". Does this suggest that a perceived lack of "purposeful activity" meant that learning was not happening? However, Griffin (1998) concluded that enjoyment was critical in engaging school students, both at the time of the visit and for developing future visiting habits and positive perceptions of museums:

> If students' experiences of museums can be made enjoyable and valuable, there are enormous impacts on childrens' and subsequently adults' views of museums as enjoyable and rewarding places to visit (p.308).

A later study reported by Griffin (2004) found that 'Visitors interviewed in the museum were more likely to consider photos of people having fun as learning' (p.S64).

2.4 Studying the concept of "learning"

There is a large body of literature about how people learn, where they learn, and what they learn, yet less work has been published on what "learning" actually means as defined by the learner. A range of studies were found in the phenomenographical literature as well as two with the general population. To date, there has been little research that looks at learning from the learners' perspective in a museum context, with three studies sourced—one focussing on museum visitors and two with staff.

2.4.1 Conceptions of learning: phenomenography

A substantial amount of research into understanding learning has been undertaken within the discipline of phenomenography (Bowden, 1994; Marton, Hounsell & Entwistle, 1997; Marton & Saljo, 1997; Prosser, 1994). Phenomenography is a technique of analysis used by a group of Swedish, United Kingdom and Australian scholars who argue that in order to understand learning the starting point must be the learner's experience and the context of learning, rather than the content or outcome of their learning:

> If we want to understand more about learning, then it is the subject pole of experience—the learner—that we must focus on. [This involves] putting the person's experience of a phenomenon into a context of, and in relation with, her experience of other phenomena (Marton & Booth, 1996, p.538).

Marton and Svensson (1979) mentioned three key aspects of studying conceptions of learning: how the person related themselves to the situation; how the learner made meaning from content; and how the learner thought about their learning as a conscious act. They argued that too often researchers focussed on the observable behaviours of students (such as note-taking and underlining) to draw conclusions rather than trying to unravel the underlying reflections of students about their learning. Saljo (1979) suggested that learning should be defined by the individual who is engaged in learning and, as peoples' experiences are not the same, to categorise these experiences in different ways.

van Rossum, Deijkers and Hamer (1985) proposed that learning was a progression through a set of five conceptions:

1. the acquisition of knowledge or increasing knowledge
2. memorising
3. applying specific facts or procedures
4. abstracting meaning
5. interpreting and understanding reality.

In later work, Eklund-Myrskog (1998) added a sixth conception to this list—learning as personal change.

In their synthesis of the phenomenographic research literature Marton et al. (1993) identified the following six hierarchically-arranged conceptions of learning that were consistently found:

1. Learning as increasing one's knowledge, where learning is the consumption of ready made facts and information.
2. Learning as memorising and reproducing, where learning is entirely devoted to regurgitating facts and information for a specific purpose, such as passing an examination.
3. Learning as applying, where the learner applies what is learned as the need arises, such as driving a car.
4. Learning as understanding, where the individual develops some meaning from their learning.
5. Learning as seeing something in a different way and gaining new perspectives.
6. Learning as "changing as a person"—through developing insights and points of view the learner sees both the world and themselves differently, being an agent of change and responsible for their own learning.

Tynjala (1997) researched students' conceptions of learning through examining 62 essays submitted by university students that described what they thought learning was. From Tynjala's phenomenographic analysis the following seven themes emerged:

- Learning is an externally determined event/process.
- Learning is a developmental process.
- Learning is student activity.
- Learning is strategies/styles/approaches.
- Learning is information processing.
- Learning is an interactive process.
- Learning is a creative process.

Entwistle (1997) described learning as a combination of memory, intelligence, cognition and personal development shaped by the interaction of the environment with an individual's personality and genes. He stated that learning was the construction of meaning, tested and modified, with new information being '… interpreted in terms of prior knowledge and concepts which contain shared, but also unique, shades of meaning' (p.10). Entwistle argued that for effective learning to take place individuals required not only self-confidence in their ability to learn, but also experiences that were personally rewarding and meaningful.

The phenomenographic approaches to studying learning described above are a potentially useful way of understanding how people see themselves as learners and for charting developmental changes in a learner. However, what is not clear from this body of work was the influence of age, life experience and education on conceptions, given that much of the work was undertaken with university students. What factors in the social, interpersonal and cultural contexts shape how individuals think of themselves as learners? Another problem is that seeing learning as a hierarchy that reaches some end point of understanding and change does not account for different views of learning as an iterative, ongoing process of making meaning.

2.4.2 Researching understandings of learning: general population

Two investigations into views of learning of the general population were sourced: one with young children (Pramling, 1996), and the other a study of adults in the United Kingdom (Park, 1994; Taylor & Spencer, 1994).

Pramling (1996) researched **children's ideas about learning** with a focus on those aged from three to eight. She argued that in order to better understand and improve children's learning we first need to figure out how they view learning. In her initial study she found that '… children's awareness of what they learned was described in terms of learning to do, to know and to understand' (p.571). Pramling discovered that this awareness was a function of age—for the youngest children learning was equated with doing, whereas the eight-year-olds demonstrated some understanding that they needed experience in order to learn.

In the next stage of her research, Pramling encouraged five and six-year-olds to study the phenomena of weather. They were then asked to reflect on their learning through making predictions. The underlying idea was that by using a concrete example children would develop a deeper understanding of the variety of ways that people thought. Pramling found this to be the case: as the children started to think differently about learning, their descriptions of learning changed from learning meaning to "do something" to learning meaning to "know something". Pramling also noted that childrens' learning increased when the teacher focussed on the what, when *and* why of what they were doing, rather than on only imparting content.

The study of adults in the United Kingdom was commissioned by the Employment Department, Sheffield. The aim of the **Sheffield study** was to find out the extent of knowledge about the education and training opportunities available to adults beyond formal schooling. A focus was on investigating learning in order to identify perceived barriers to post-school education and learning. Attitudes to four concepts were examined: education, training, studying and learning. An initial qualitative study using nine focus groups was undertaken to broadly examine attitudes, knowledge and perceptions (Taylor & Spencer,

1994) followed by a detailed quantitative survey of 1,405 residents across a range of locations in the United Kingdom (Park, 1994).

The qualitative component found that respondents thought of education as a formal process usually associated with school, something '… imposed and prescriptive' (Taylor & Spencer, 1994, p.3), left behind when they finished school. Of the four concepts learning was the most difficult for participants to define. Respondents were able to give concrete examples of learning rather than easily discuss what the word meant. It wasn't until they were asked to contrast learning with the other constructs, including education, that they were able to begin to describe it. Learning was generally seen as a positive process, being '… voluntary, broad, open ended … seen as an implicit part of *"normal"* life' (p.5, emphasis in original). One respondent in their study put it succinctly as 'Learning is you doing it and education is somebody doing it to you' (p.5). The results showed that learning was viewed as ongoing, everyday and lifelong, broadening horizons and taking an active interest in the world in many diverse ways, such as talking to friends, reading books and watching television. It was described as a subliminal process rather than a conscious activity that was sought out by the individual. A clear relationship was found between a person's early learning or educational experiences and their attitudes to later, post-school learning. Participants felt that positive reinforcement and encouragement early in their lives resulted in a continued desire for learning, particularly when that came from parents, teachers and peers.

The quantitative stage of the Sheffield study was designed to assess what people thought about vocational learning (Park, 1994). A sample of 1,405 adults aged between 16 and 54 years were surveyed by telephone. The questions included a series of statements about attitudes to learning, such as consequences of learning, systems for learning, relevance of learning and responsibility for learning. It was generally found that respondents valued learning and understood that it was a life-long activity. Overall, the findings echoed the qualitative study—people generally recognised the benefits of learning and the role it played in their lives,

and saw education as formal, imposed, prescriptive and negative. One major conclusion from the Sheffield study was that

> Most respondents felt that learning that has been chosen by the individual is associated with higher levels of fulfillment than learning imposed upon him or her (Park, 1994, p.34).

2.4.3 Researching views of learning in museums

Three studies undertaken into the meanings attributed to the word learning in the museum sector were sourced—one with visitors (Combs, 1999) and two with museum staff (Environmetrics, 1998; Rowe, 1998).

Research conducted by the **Winterthur Museum, Garden and Library**, Delaware, United States, looked at motivations for visiting and where learning, education and entertainment fitted (Combs, 1999). The objectives of the study were to see if learning was the main motivation for visiting Winterthur and the relationships between learning, recreation and entertainment. Sixteen focus groups were conducted with a total of 97 visitors to Winterthur. Results were analysed using grounded theory (Strauss & Corbin, 1998a) to generate a set of terms that best described the reasons why people visited Winterthur.

Six primary motivations for visits emerged—recreation; learning; beauty; history; social and amusement—with the main reasons being recreation (30%) and learning (29%). These two concepts were closely related in the minds of those sampled, with the recognition that learning was both recreational and enjoyable. Combs also discovered that learning and recreation were defined very differently from education and entertainment, particularly in relation to perceived choice. Choice was seen as the way that recreation and learning were linked:

> When visitors felt like they had made the conscious choice to learn without the pressure of producing quantifiable results to an outside agency, then learning became a leisure pursuit (p.193).

Compared to these views Combs reported that

> Focus group members often felt that *education* implied strenuous exercise in an environment beyond their control … *Education* connoted the absence of choice

> … [and] implied a much more passive experience than what visitors hoped to encounter (p.193, emphasis in original).

Participants in the Winterthur study wanted active learning experiences that were worthwhile putting their energy into, with the opportunity to see new and unusual objects and to learn through active discovery. Interestingly, another finding that emerged from Combs' work was negative views about "entertainment" and "amusement", with participants associating entertainment with passivity and not being personally enriching. Combs reported that visitors to Winterthur did *not* want "educational experiences", as they associated these with receiving information inactively and being told what information, knowledge or skills that they should be acquiring. Combs suggested that

> Entertainment and education appear to have a uniquely symbiotic relationship in museums; in order to captivate and educate visitors one must fulfill their leisure needs and entertain them (p.188).

Combs concluded that learning and recreation were two of the main reasons for museum visiting and were defined separately from education and entertainment, which were seen as passive processes. Learning was a '… personal, social discovery experience for the group viewing [an] exhibition' (p.195), as well as '… the act of acquiring knowledge with little effort or conscious intention … *Self growth … Enriching*' (p.190, emphasis in original).

Two studies of museum staff perceptions of learning were found. The **St Louis Science Centre**, Missouri, United States, used a series of staff interviews to map the similarities and differences in meanings held about a range of concepts, including learning (Rowe, 1998). Twenty-three staff were interviewed in-depth about a range of terms—learning, formal and informal, science, research and museums—which had been sourced from a literature review coupled with the aims of the Centre identified from the strategic plan and mission statement. The idea behind the study was to develop programs and partnerships that would improve the experiences of visitors to the Centre. Findings of most relevance to this thesis are summarised in Table 2.2 (over the page).

Table 2.2. Key findings: St Louis Science Centre study

Term	Description
Formal	Structured, systematic, regimented settings, definite right and wrong answers, teacher/expert has power and choice over what is acquired. Also organised and systematic.
Informal	Self-led, self-paced, self-motivated, connects to "real" experience, learner/visitor has power and choice to direct interactions, people are empowered.
Museum	Collections and research-based, hands-off, presenting "static" artefacts rather than ideas or activities.
Learning	Reflective, relevant, physical, social, choice, something that is applied in the future, enjoyable, experiential and "owned" by the learner.

(Source: Adapted from Rowe, 1998, p.11-13, 16-17)

Overall, learning was viewed as a positive process, something lifelong, with the learner having choice and ownership important features. Learning was also seen as natural and enjoyable. From the results Rowe suggested that

> … [staff] who talked about learning as a natural process also tended to hold that the most important thing the [Centre] could do to promote learning is to spark interest and engagement and that visitors will naturally "use exhibits and programs the way they decide at the time" to learn at their appropriate developmental or educational level (1998, p.17).

Research was commissioned by the **Australian Museum**, Sydney, to see what perceptions staff held about learning in order to move them towards a learning focus when developing programs for the public (Environmetrics, 1998). Four focus groups were conducted to uncover views of learning and how those ideas had underpinned the public programs that staff had worked on. The wide-ranging discussions revealed a variety of individuals' ideas about learning and the role that the Museum should play in visitor learning. Learning was seen as an active process of construction by the learner, with a shared recognition that the museum learning environment was not conducive to rote learning. The role of emotions in learning was identified as particularly relevant for museums in providing rich and memorable learning experiences. There was a general view that learning was about change, from acquiring new facts or knowledge, and gaining "wisdom" through applying new understandings.

It was also concluded that, although there seemed to be a broad agreement of what learning was, the language used by staff to express these concepts varied according to their professional backgrounds:

> To some extent, it appeared that staff had shared understandings, but did not always have the shared language that would facilitate communication [about learning] (p.5).

Both of the studies with museum staff found that the differences in opinions identified related to people's *professional backgrounds*, with their epistemological views on learning and education being heavily influenced by their training and experience. Another finding was that although there seemed to be a broad agreement of what learning was, the *language* used by staff to express these concepts varied according to their professional backgrounds and work areas. These ideas are closely linked to their identity, which influenced how people saw themselves in a professional sense based on their experiences. Identity issues are explored in the next section of this chapter.

2.5 Exploring identity

Identity is a concept that has received increasing attention across a range of research disciplines (du Guy, Evans & Redman, 2000; Levinson, 1990; Maslow, 1999; Sfard & Prusak, 2005). Identity can be a political term related to issues of power and conflict (Hall, 1996), also addressing questions about participation, inclusion and exclusion (Wenger, 1998). There is a large literature dealing with identity generally, and the politics of identity specifically, across diverse fields such as sociology (Kidd, 2002), educational psychology and personality theory (Atchley, 1989; Pervin, 1984; Shaffer, 1979; Vander Zanden & Pace, 1984) and cultural studies (du Guy et al., 2000; Hall & du Guy, 1996). Identity has also been recognised as a tool that can be used in educational research as a framework for analysis (Gee, 2001).

As identity is a very complex notion, with a number of debates surrounding the use of the term across a range of contexts, the literature reviewed in this chapter focusses on descriptions of identity that informed Stage Two of the study which examined visitors' learning identities in relation to a Museum exhibition.

An influential figure who wrote about the concept of identity in adult development and personality theory was Erik Erikson (1902-1994). Erikson proposed a theory of identity formation in childhood and adolescence that, while based on the Freudian view of development, extended Freud's ideas through recognising the role identity played across a person's adult life (Erikson, 1963). Erikson suggested that humans advanced through eight stages during their lives, with progression through levels contingent on solving some crisis. Erikson identified identity as a critical issue faced by adolescents in particular. He introduced the terms "identity crisis" and "role confusion" to explain the nexus between childhood and adulthood that needed to be resolved by a person in order to define their role and purpose in life and, ultimately, their identity as an adult (Erikson, 1963). Shaffer (1979) noted that Erikson had addressed the idea of shared identities, where individuals become intimate with others, experiencing mutual trust and an ability to care about others. Pervin (1984) suggested that Erikson made a major contribution to personality theory in three ways: by emphasising the psychosocial aspects of personality; through extending stages of development to encompass individuals entire life cycles; and in recognising that both the past and the future have a major impact on how people constructed their identities at different times in their lives.

Educational psychologists Vander Zanden and Pace (1984) applied Erikson's ideas in defining identity as

> … an individual's sense of placement within the world—the meaning one attaches to oneself as reflected in the answers one provides to the questions, "Who am I" and, "Who am I to be?" (p.74).

Atchley (1989) also drew on the work of Erikson when he suggested that identity was

> … a set of characteristics that differentiates self from others and that persists over time. Identity can also be a goal through which people try to arrive at a conception of themselves as loving, competent, and good (p.115).

A useful set of terms describing identity in adult development were articulated by Levinson (1990). The *self* was how a person perceived themselves; *personality* how a person appeared to others; and *life structure* the pattern of a person's life that resulted from the interaction of self, personality and external world. Levinson suggested that these were unstable and ever-changing, as both the person and the world were constantly in transition. Identity was also strongly related to the concept of the self in combination with membership of various social and cultural groups (Paris et al., 2001), as well as the cultural tools that people interacted with, such as schools, museums, films, literature or other forms of cultural engagement. Paris et al. (2001) also argued that people constantly formed, re-formed and shaped their identity in order to understand themselves '… partly in relation to their own histories and anticipated futures' (2001, p.257).

Kidd (2002) stated that identity was the way sociologists framed how individuals thought of themselves and their world. He defined identity as '… the characteristics of thinking, reflecting and self-perception that are held by people in society' (p.24). Kidd identified three forms of identity:

- *Individual identity* – the unique sense of personhood held by each person in their own right.
- *Social identity* – a collective sense of belonging to a group, identifying themselves as having something in common with other group members.
- *Cultural identity* – a sense of belonging to a distinct ethnic, cultural or subcultural group.

Sfard and Prusak (2005) proposed that individuals had multiple identities defined by the narratives, or stories people told themselves. They outlined three narrative-defined identities—*first-person* identity as told by the person themselves; *second-person* identity as told to another person; and *third-person* identity told by a third party to a third party. Sfard and Prusak identified two subsets of identity and narrative:

> … *actual identity*, consisting of stories about the actual state of affairs, and *designated identity*, consisting of narratives presenting a state of affairs which, for one reason or another, is *expected* to be the case, if not now then in the future (2005, p.18, emphasis in original).

Gee (2001) described a person's "core identity" as a combination of their many different experiences and self-perceptions: 'Being recognised as a certain "kind of person", in a given context, is what I mean … by identity' (p.99).

Wenger (1998) proposed that the relationship between identity and practice was critical in informing the ways that individuals operated within a community. He recognised that identity was the bridge connecting individuals with society:

> Building an identity consists of negotiating the meanings of our experience of membership in social communities … it is the social, the cultural, the historical with a human face (p.145).

Wenger identified the following characterisations of identity as:

negotiated experience, defining who we are through our participation in a community

community membership, defining who we are through the familiar and unfamiliar

a *learning trajectory*, defining who we are by our past experiences and future paths

nexus of multimembership, how we reconcile and integrate different aspects of our identity

a *relation between the social and global*, local ways of belonging that link to the bigger picture (adapted from Wenger, 1998, p.149).

2.5.1 Identity described in a museum context

Falk (2004) noted that research has consistently found that learning from museums was

> … affected by within group social mediation, by social mediation and facilitation from individuals outside the visitor's social group, and by the cultural values and beliefs visitors hold relative to culture and identity (p.S84).

Identity has been discussed and researched in recent museum literature (Falk, 2006; Hooper-Greenhill, 2004b; Leinhardt, Crowley et al., 2002; Leinhardt & Knutson, 2004; Rounds, 2006; Spock, 2006). Researchers have speculated that the museum experience influences identity. It has been recognised that museums can play a crucial role in shaping both individual and national identities through their collections, research and public programs (Gurian, 1999; Rounds, 2006; Weil, 1997). As the focus in this thesis is on visitors as learners, rather than the broader issue of the ways museums shape nationhood and cultures and tell narratives about the wider world humans occupy, the literature described in this section relates to individuals' identities and their museum experiences.

A broad and inclusive definition of identity was presented by Fienberg and Leinhardt (2002):

> One common conception of identity is that it is comprised of a set of demographic characteristics such as age, gender, socioeconomic status, race, and ethnicity, characteristics that influence people's attitudes and behaviour and sometimes influence how they are treated by others in the society. Another conception of identity is that it includes the kinds of knowledge and patterns of experience people have that are relevant to a particular activity. This second view treats identity as part of a social context, where the prominence of any given feature varies depending on which aspects of the social context are most salient at any given time (p.168).

A visit to a museum can influence both a person's identity and their sense of self (Falk, 2006; Hooper-Greenhill, 2000; 2003; Leinhardt & Gregg, 2002; Leinhardt, Tittle & Knutson, 2002; Rounds, 2006). The interplay between the backgrounds that visitors bring and their reactions to objects and experiences can lead to subtle changes in views of themselves, their identity and meaning making, both individually and collectively (Hein, 1998; Leinhardt & Knutson, 2004;

Silverman, 1995; Stainton, 2002). Ivanova (2003) recognised that a two-way process of exchange occurred between a visitor's identity and the sense of identity that was present within the content of the museum. She noted that museums both preserved history and memory as well as constructed them. She felt that it was important, then, that '… museums in general … understand how they influence the development of identity, explicitly or implicitly' (p.22).

Museums also have objects which can strongly resonate with a person's experiences, contributing to both forming and affirming a visitor's identity (Gurian, 1999; Ivanova, 2003; Leinhardt, Crowley et al., 2002; Paris, 2002), as Hooper-Greenhill (2000) noted:

> Objects are used to construct identities, on both a personal and a national level. Objects can become invested with deeply held feelings and can symbolise powerful convictions through which life is led (p.109).

Identity can be shaped by visitors' interactions with museum objects: '… visitors recall meaningful objects during museum visits that elicit feelings relevant to their own personal identities' (Paris & Mercer, 2002, p.418). In researching visitor's responses to objects, other manifestations of identity examined by Paris and Mercer were '… gender, ethnicity, historical generation, self and family' (p.418). Hooper-Greenhill (2000) recognised that museums play a key role, not only in maintaining and transforming culture on a broad scale, but also through '… the recognition of the significance of objects in relation [to] the construction of the self' (p.150).

Leinhardt and Knutson (2004) in reporting the work of the Museum Learning Collaborative, suggested that identity could be considered in three ways. The first was through demographic factors such as age, gender and ethnicity; the second being the changing roles people play in relation to others in the group and the activity being undertaken. The third was viewing identity through the '… collective past of visitors' (p.50), including their prior knowledge and experiences, motivations and agendas. They proposed that identity was defined by the individual: 'I am who I think I am, and we are who we think we are' (p.51).

In relation to a museum visit they suggested that identity is participatory and changing in response to the visit itself. Leinhardt and Knutson concluded that:

> Identity was measured less by the demographics and more by the details of how the groups were enacting a particular visit, specifically by their level of interest, motivation and curiosity, and by their appreciative and experiential knowledge (p.75).

In exploring long-term memory and visits to World Expos Anderson (2003) suggested that *sociocultural identity* was a critical factor that contributed to people's memories. In this context Anderson defined sociocultural identity as

> … the inherent set of interests, attitudes, beliefs, social roles, stage of life and behaviours that collectively define the participants at the time of their Expo experiences (p.406).

He found that the social dimension of a person's sociocultural identity elicited the strongest memories of their experiences, more so than specific exhibitions and displays. However, he noted that, not only what a person remembered, but how they reflected on their experiences through the "frame" of their identity and their role in the visit, were important. Anderson concluded that 'Memories were overwhelmingly dominated and mediated by the socio-cultural identity of the individual at the time of the visit' (Anderson, 2003, p.409).

Worts (1996) also reflected on the social nature of identity in art museums, suggesting that there were two kinds of identity—*personal identity* that made an individual unique, and *collective identity* in belonging to family, friends and community, both culturally and globally. He advocated that identity was experienced by '… reaffirming the sense of self, [and] evolving a new or varied sense of self' (p.128). Worts suggested that identity was a complex notion, both conscious and unconscious, and was the way that people made meaning when visiting a museum:

> Cognitions, emotion, imagination, intuition and physical interactions all contribute to the experience of an individuals' sense of identity – either by affirming an existing sense of self, or by providing an impetus for an evolving sense of self. This identity is generally reflected in one's knowledge, beliefs, taste and skills (p.128-129).

Leinhardt, Tittle and Knutson (2002) found that participants in their study

> … deliberately blurred the lines between the exhibit and themselves, developing a personal meaning for the object, or exhibit, or drawing an interpretation out into their own lives (p.130),

and concluded that

> Visitors shape and reshape their own personal activity of museum going and each museum visit—be it a novel experience, or checking in with an old friend—adds to the identity of who that visitor is (p.131).

Hooper-Greenhill (2004b) identified a range of learning outcomes that could be expected from students visiting museums which related to identity, including '… the development of a more complex view of self, family, neighbourhood, or personal world' (p.164). She recognised that attitudes towards the self and others could also be changed as a result of a museum visit. In reporting on her work with school students and teachers, Hooper-Greenhill (2004a) concluded that children exhibited more positive *learning identities* after visiting a museum, particularly when they engaged in active learning experiences, were able to handle objects and were provided with opportunities to talk to experts.

Leinhardt and Gregg's research (2002) about trainee teachers' engagement with a social history exhibition found that their views about civil rights were formed based on an understanding of both who they were (their *individual identity*) and the tools they had acquired as part of their professional training (their *professional identity*). Leinhardt and Gregg noted that

> How the content is understood and appropriated by visitors is a consequence of their own sense of identity, prior knowledge, and exploratory engagements, as well as their uses of the devices and tools built into the museum environment (p.142).

Significant changes to a person's identity can occur as visitors move from a dispassionate stance to a position of critical thinking about a subject, particularly those that deal with difficult or emotive issues such as racism, social justice, human rights and the environment (Adelman, Falk & James, 2000; Kelly & Gordon, 2002; Leinhardt & Gregg, 2002; Swanagan, 2000).

Rounds (2006) proposed that visitors use museums for "identity work", defined as

> … the processes through which we construct, maintain, and adapt our sense of personal identity, and persuade other people to believe in that identity (p.133).

Rounds suggested that identity is created and sustained through reflexive actions and wondered how this would be demonstrated through a museum visit, particularly given the dominance of "browsing behaviour" among visitors (Rounds, 2004). He also noted that when studying identity the focus should be not on what a person's identity *is*, but what they are *doing about it* in terms of how their identity unfolds and changes over time. In thinking about the role of museums Rounds advocated that they offer '… opportunities both to confirm our existing identity, and to safely explore alternatives' (Rounds, 2006, p.138), particularly as museums display order that enables visitors to understand relationships between objects and their place in the world.

Falk (2006) observed that

> … an individual's motivations relative to learning are closely aligned with that individual's sense of self and identity … learning expresses identity (p.154).

He proposed that identity is not fixed, that people have multiple identities, expressed at different times and situated within the realties of the world. Falk emphasised the importance of motivations as a way to describe a visitor's "entering identity", under the categories of explorers, facilitators, professional/hobbyists, experience seekers and spiritual pilgrims.

However, both Rounds and Falk make broad claims based on an initial set of somewhat restricted data. Rounds draws on secondary sources, admitting that he is undertaking an '… exploratory reinterpretation of existing studies of how visitors behave in museums' (2006, p.138). Although Falk sampled over three thousand individuals, his work was confined to science centres, zoos and aquariums. Falk did acknowledge these constraints, and wondered whether his conclusions would apply to other types of museums.

In critiquing these two papers in the context of what identity might mean for museum education practice Spock (2006) noted that:

> In order to captivate, the museum experience has to resonate with something deeply felt in the personal identity of the museum-goer (p.179).

How then could visitors' identities be studied within the context of a museum exhibition?

2.6 Understanding museum learning and identity

The literature sourced for this chapter shows that identity is how a person sees themselves in relation to their world and their role in it, as well as to others. Identity is fluid and shaped by the social context and membership of a community. Identity changes across a person's life cycle. It includes a range of factors such as age, gender, cultural background, socioeconomic status as well as general life experiences. Identity not only influences who a person is now, but also how a person behaves and conceives themselves in the future. As suggested by Sfard and Prusak (2005) learning plays a critical role in influencing a person's identity.

The literature revealed that learning is a creative process of change in a person's identity—from not knowing to knowing, or being able to do something that hasn't been done before. In a broader sense learning could also lead to some major change within an individual's identity—in their perceptions, attitudes, behaviour, or the way they see themselves, others, and their world.

Although learning is complex with many interrelated factors, the essential elements found consistently across the literature reviewed in this chapter are that learning is:

- both unique to an individual and a shared process that all humans engage in consciously and unconsciously
- dependent on context, and across many different contexts
- lifelong and lifewide, across all facets of a person's life
- a process that is both immediate and happens over time
- reflective, leading to self-awareness and change

- an activity that is chosen by individuals based on their own interests and preferences
- shaped by a person's prior knowledge and experiences
- meaning making through making new connections
- creative and innovative
- enjoyable
- facilitated by a wide range of tools: a dynamic between a person and something.

Motivation and purpose are key components of learning, with the social dimensions of learning being critical. Learning is an essential part of being human and is linked to our identity and sense of self—we all have an intrinsic desire to learn.

Several areas emerged from the literature review that warranted further investigation—how museum visitors describe learning; where learning fits in their lives; how they see themselves as a learner within the context of a museum visit; and how a museum visit influences their learning identity. Another area of contention identified from the literature was a potential conflict between the words "learning" and "education" and whether perceptions of one influence the other. Studies reviewed found that education can be viewed as passive; formal; being told to do something; imposed, not chosen; associated negatively with school and teachers and hard work; as well as structured and systematic. As suggested by Prince (1990) if visitors associate museums with education could this influence their views of museums and how they engage with them?

These issues were investigated in two stages of this study, outlined in the following chapters.

Chapter 3. Studying Learning Identities: Methodology

The purpose of this study was to understand the interrelationships between adult visitors' views of learning and their learning experiences at a museum. A key focus was on how individuals viewed themselves as a learner across a variety of learning contexts, with an emphasis on museums. This investigation included examining the relationship between learning, education and entertainment, and the impact of a museum visit on visitors' learning identities.

This chapter outlines the methods used in both stages of the study. The first part discusses the theoretical framework followed by the research methods for each stage, including the rationale for sampling adults, ethics and the pilot studies. Finally, reliability, validity and data analysis challenges are addressed.

3.1 Theoretical framework: an interpretive approach

This study is framed under an interpretive approach to research that is

> … concerned with the relation between meaning-perspectives of actors and the ecological circumstances of action in which they find themselves (Erickson, 1987, p.127).

One of the main assumptions underlying interpretive research is that the complexities of social realities can only be revealed through understanding the personal meanings of an individual (Carr & Kemmis, 1986; Silverman, 1995; Usher, 1996). It has also been suggested that there is no one single explanation of an action, there are multiple ones (Merriam & Simpson, 1995).

There were five reasons for choosing an interpretive approach for this study. First, as mentioned above, a feature of this approach is uncovering the multiple meanings that individuals give to a particular construct—in this case how the concept of learning was described. Second, it recognises that these meanings are based on both an individual's cultural background and the wider sociocultural context (Erickson, 1987). Although humans share meanings through culture (Ogbu, 1995), Erickson argued that these '… surface similarities mask an

underlying diversity' (1987, p.126). Usher (1997) recognised that '… subjects cannot be separated from their subjectivity, history and socio-cultural location' (p.32). Therefore, the goals of interpretive research are to make sense of meanings across the range of sociocultural contexts an individual operates within (McIntyre, 1998; Schauble et al., 1997). In this thesis views and perspectives about learning needed to be obtained from a variety of different individuals, and then understanding how these views relate to their museum experiences and their own lives.

The third reason for choosing the interpretive framework is that it allows for development of new theories (Erickson, 1987) which contribute towards solving what Mason (1996) called "causal puzzles". One aim of this thesis is to investigate new ideas and develop theories about how an individual's views of learning—their learning identity—both informs and is informed by their experiences when visiting museums. As interpretive research concerns issues of human choice and meaning which lead to improvements in practice (Carr & Kemmis, 1986; Erickson, 1987; Usher, 1997) investigating how the elements of visitors' museum learning experiences can be understood and then manipulated will be able to inform strategies that could provide better learning experiences for visitors in the future.

Fourth, it has been recognised that interpretive research can include techniques that are subjective yet rigorous and "scientific" (Schwandt, 1998) with the possibility to utilise both qualitative and quantitative methods (Denzin & Lincoln, 1998a). While both methods are concerned with an individual's viewpoint, qualitative techniques allow the researcher to get closer to a subject, while quantitative procedures generate measures that locate an individual or group within the larger population (Denzin & Lincoln, 1998a). In the present study a mixed-method approach has been used to gather qualitative and quantitative data at both individual and group levels.

Finally, the interpretive approach recognises that the position of the researcher needs to be made clear, both in the analysis of data and in the conclusions that are formed (Carr & Kemmis, 1986; Denzin & Lincoln, 1998b, 1998c, 1998d; Erickson, 1987; Patton, 1990). It has been acknowledged that research is a social practice which results in a network of beliefs and assumptions that underlie interpretations (Usher, 1997), therefore understanding how this study fitted within the field of museum learning research was critical (Yates, 2004). Both interpretive approaches and scientific methods have been widely applied in museum learning research (Hein, 1998; Loomis, 1987). One challenge was to avoid becoming tied to "traditional" quantitative methods and theoretical constructs about learning and museum visiting that are well-established parts of museum learning research and still maintain creativity in the research process (Janesick, 1998; Richardson, 2000). The research design for the present study drew on methods used in current museum learning research, particularly those that encourage the inclusion of visitors' voices.

3.2 Research design

The research questions investigated in this study are:

- *What are the interrelationships between adult museum visitors' learning identities and their learning experiences at a museum?*
- *How does a visit to a museum exhibition interact with an adult visitors' learning identity?*

Stage One investigated individuals' personal philosophies and views about learning focussing on the following areas:

- How do adult museum visitors describe learning?
- How is learning viewed in relation to education and entertainment?
- How do adults learn something new?
- What resources and places are accessed when learning
- Where do museums fit in people's learning lives?

As demonstrated in the literature review there were few studies that looked at conceptions of learning in a museum context. Therefore, developing a suitable methodology for Stage One was undertaken through a series of pilot studies, described in Section 3.2.3. Following these, both qualitative and quantitative data were gathered from three different groups of adults, which is described in Section 3.3.

Stage Two was undertaken within the context of a museum visit looking at how an exhibition impacted on adult visitors' learning identities. The following sub-questions were addressed:

- How well do learning opportunities provided by museums match a person's learning identity?
- What roles do visitors play in a museum visit and do these roles influence their learning identity?

The method used in Stage Two is outlined in Section 3.4.

3.2.1 Choosing the sample: adult museum visitors

The sample consisted of adults aged over 18 years, chosen for two reasons. First, adults comprise the largest segment of museum visitors in Australia. At the Australian Museum, adults aged over 18 years comprise approximately 86% of all visitors with the highest proportion (41%) being aged between 35 and 49 (Australian Museum Audience Research Centre, 2004a). The Australian Bureau of Statistics (2002) reported that 25% of the Australian population aged over 18 years had visited a museum during 2001, with the highest attendance rates for adults aged 25-34 years (27%) and 35-44 years (29%).

The second reason to focus on adults is that museums can be seen as places for lifelong learning. A lifelong learner has been defined as

> … a person who takes responsibility for their own learning and who is prepared to invest "time, money and effort" in education or training on a continuous basis … Lifelong learners must have the *motivation* and *capacity* to learn, in any type of setting, with any type of teacher, or simply by themselves (Watson, 1999, p.3, emphasis in original).

Lifelong learning is becoming more widely recognised in museums as a way to describe the motivations of adult visitors (Anderson, 1997; Baldwin et al., 1994; Claxton, 1999; Falk & Dierking, 2000). It was found that participants in adult museum programs had '… a strong desire for lifelong learning and pursue that desire, through involvement with a museum' (Sachatello-Sawyer & Fellenz, 2001, p.18). It has been acknowledged that museums need to understand both the ways adults approach learning and their perspectives on learning in order to better cater to their learning requirements (Baldwin et al., 1994; Brennan, 1994; Claxton, 1999; Gunther, 1994; Hooper-Greenhill, 1994; Kelly, Savage, Landman & Tonkin, 2002; Matheson & Matheson, 1996; Sachatello-Sawyer et al., 2002).

3.2.2 Ethics and privacy

Confidentiality for participants was maintained at all times through using pseudonyms. Each in-depth interviewee in the pilot studies and Stage One and each primary participant in Stage Two signed a University of Technology Sydney consent form (Appendix 1 and 2). Any information obtained about participants was stored separately from other data. Tapes, data files, transcripts and completed questionnaires have been kept in a locked cabinet in the Audience Research Centre at the Australian Museum. Additionally, computerised data files have been password-protected. Ethics approval was obtained from the University in March, 2000 and August 2002 (approval letters are in Appendix 3). As no individual can be identified in this thesis, privacy requirements have also been met.

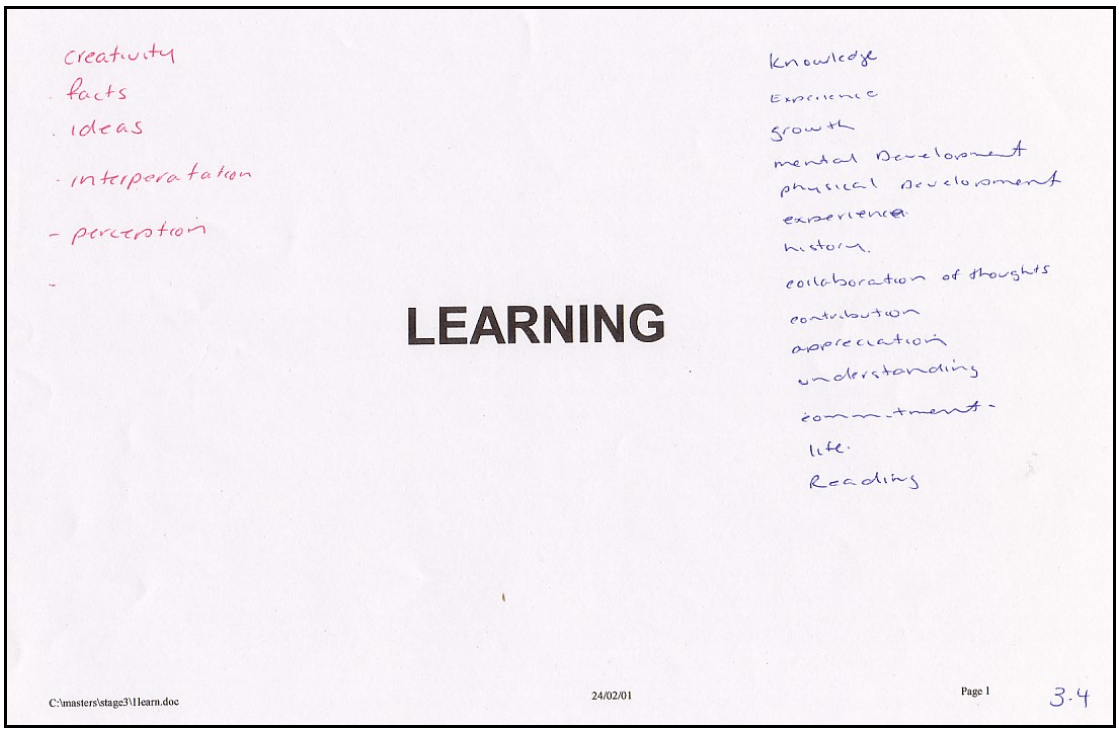
3.2.3 Pilot studies

As demonstrated in Chapter 2 little research had been undertaken to study museum visitors' views of learning and subsequently developing a method to do this presented a challenge. Therefore, some time was taken trying different approaches to answering the research questions in Stage One through three pilot studies. The aim of these were to test the guiding questions, the data collection instruments and analysis, as well as providing the opportunity to practise and refine interview techniques. The questions developed were based on the literature

(Clarke, 1995, 1998; Marton et al., 1993; Packer, 2002; Park, 1994; Sachatello-Sawyer & Fellenz, 2000; Taylor, 1996), then trialled and modified after feedback from the interviewees, discussions with supervisors and reflection.

The **first pilot study** was undertaken in December, 1999 to trial a set of data collection tools. Four respondents that met the sampling criteria were interviewed in-depth using an initial set of guiding questions which were then refined after each interview. A *learning diagram* (example in Figure 3.1) was used at the beginning of the interview to encourage participants to write down key words and phrases that came into their minds when thinking about the word learning.

Figure 3.1 Example of learning diagram



This was followed by an interview where participants described learning; discussed a recent general learning experience and their learning experiences during their last museum visit. Respondents also completed a *participant information sheet* to gather personal details such as age, visiting habits and whether they had children (Appendix 4).

After the first pilot study the questions were reviewed deleting those that were either repetitive or did not add to understanding an individual's ideas about learning. The way the questions were asked evolved so that by the last two interviews I felt that my interview technique had improved through developing listening and prompting skills and allowing interviewees to talk more. The participant information sheet tested well as it provided background information needed to further understand those sampled.

All interviews were audio-taped and transcribed for analysis. From these results a deeper understanding was gained of how each person described themselves as a learner and the process of learning itself. At the same time new skills in data transcription and analysis were gained.

A **second pilot study** was undertaken in June, 2000 to try out the revised guiding questions, test better ways of utilising the learning diagram as well as introducing the *semantic differential scale* (described in Section 3.3.2) as another method to obtain data. The revised question guide worked well, although on further reflection it was clear that the prompts used needed to be more open-ended and less directed. To encourage further discussion, a set of phrases were developed to ensure that interviewees were not led too much.

Each participant was again asked to complete the learning diagram at the beginning of the interview. This time they were shown a worked example using an unrelated concept ("fruit") to give them an idea of what was required (Appendix 5). At the end of the interview they were given a different coloured pen and asked whether they wanted to add or amend anything to illustrate how their thinking may have evolved during the course of the interview, consistent with the idea that meaning can change through reflection (Novak & Gowin, 1984).

The semantic differential scale was trialled in the second pilot using two suggestions from the interviewees about how to best arrange them. First, they recommended that similar constructs (such as active/passive and dull/lively) needed to be separated on the form. Second, they requested that a worked example be provided to help them start. Participants reported they had really enjoyed completing the scales, with the words used in the scales encouraging further dialogue. As well, the scales added depth to the learning diagram by giving participants ideas and options they hadn't thought of at first, yet on reflection they considered were important in their views of learning.

On reflection it was decided that one final interview (**pilot study three**) be conducted to further refine interview techniques to be less directive and more open-ended. After thinking further about the previous interviews, an opportunity was identified to better utilise the learning diagram by reflecting the interviewee's own words back to them, which they could then discuss further. This proved to become a very useful technique, allowing further exploration of issues raised and overcoming the problem of "leading" the person. Once that interview was completed, analysed and discussed with my supervisor it was decided that the instruments were ready for Stage One fieldwork which commenced in December, 2000.

3.3 Stage One method

Stage One investigated individuals' personal philosophies and views about learning focussing on the following areas:

- How do adult museum visitors describe learning?
- How is learning viewed in relation to education and entertainment?
- How do adults learn something new?
- What resources and places are accessed when learning
- Where do museums fit in people's learning lives?

Eight in-depth interviews and 100 questionnaires with adult visitors to the Australian Museum, Sydney were conducted in Stage One. As well, a telephone

survey of 300 Sydney adults was undertaken to compare responses of Museum visitors with the general population as outlined in Table 3.1.

Table 3.1. Research outline: Stage One

Sample	Method	Details
Adult museum visitors aged over 25 years (n=8)	In-depth interview	Long interview (45 minutes – 1 hour): • Describe learning as a general concept • Talk about a recent general learning experience • Describe recent museum experience • Complete "Learning diagram" Complete semantic differential scales
Adult visitors to Australian Museum aged over 18 years (n=100)	Questionnaire	Face-to-face interview (10-15 minutes): • Frequency of museum visiting • Describe learning, education and entertainment • Rate sets of statements about learning and resources accessed when learning • Demographic information
Sydney adults aged over 18 years (n=300)	Telephone survey	Telephone interview (10 minutes): • Rate sets of statements about learning and resources accessed when learning • Whether had visited a museum and frequency of visits • Demographic information

3.3.1 In-depth interviews

In Stage One eight in-depth interviews were conducted with adults aged over 25 who had visited the Australian Museum in the previous six months. The participants were selected from both the Museum's database and others recruited through snowball sampling (Fink, 1995b), or "friend-of-a-friend", where

> … previously identified members of a sample identify other members of the population … [and is used] when a list of names for sampling is difficult or impractical to obtain (1995b, p.23).

Demographic information about interviewees (age, gender, family situation, educational level, employment status, cultural background and visiting patterns) were collected using the participant information sheet.

The interview guide used in Stage One (Appendix 6) consisted of a set of questions that covered:

- how an individual described learning
- how an individual liked to learn through talking about a recent learning experience
- describing a recent museum visit and how this related to their views on learning.

Each interview lasted between 45 minutes and one hour. Two were conducted at the Australian Museum; one at the person's home and the other five at their workplaces. Each was audio-taped and transcribed. The data were analysed both at an individual level and across the whole sample through categorising responses and identifying trends. At the individual level an overview was written about each participant, covering their views of learning, education and entertainment and summarising their museum learning experiences (see example in Appendix 7). At the group level a range of common themes were identified, with their relationship to theory and practice discussed in Chapter 5.

3.3.2 Questionnaires

The questionnaire (Appendix 8) was administered during a short face-to-face interview at the Museum. It asked about views of learning, education and entertainment through a combination of both qualitative (open-ended questions) and quantitative methods (rating scales) to further examine the findings that had emerged from the in-depth interviews. As well, the questionnaires enabled an analysis of trends across a range of variables about key concepts from the perspective of those who have experienced museums.

To obtain answers to the questionnaire, 100 adult visitors to the Australian Museum were interviewed over seven days—two weekends in November 2002 and three days in January 2003. Due to the fluctuation in visiting patterns at the Australian Museum these times were chosen to enable the data to be collected within a reasonable time frame and across two different time periods, while

maximising the response rate. Diamond (1999) suggested that 96 visitors is a sufficient sample size to make generalisations and produce conclusions for a museum that has one million visitors per year with a ten percent sampling error. As the Australian Museum averages between 250,000 and 400,000 visitors per year (Australian Museum Audience Research Centre, 2004a) it was considered that 100 participants was adequate to obtain reliable findings.

Respondents were randomly sampled from visitors to the Museum's *search & discover* exhibition. Given that the survey took around 10-15 minutes to administer this area was chosen as it contained a meeting room where visitors could sit and be interviewed in a relaxed atmosphere. An imaginary line was drawn outside the exhibition and every fourth visitor was approached and asked to participate. If they declined (and only three did so citing lack of time) the next visitor was asked.

The interview began by asking three ***open-ended questions***:

1. Could you please describe in your own words what you think learning is?
2. Could you please describe in your own words what you think education is?
3. Could you please describe in your own words what you think entertainment is?

Verbatim responses were recorded on the survey form, with participants' being prompted to continue answering until they had nothing else to add to their responses.

These questions were followed by two sets of statements which respondents rated on a five-point Likert ***rating scale***.

First, they were asked to rate the following 11 statements that described various aspects of learning based on how important they are to the person as a learner:

1. Learning in a physical, “hands-on” way.
2. Learning when the information provided is of immediate interest to me.
3. Learning that builds on what I already know.
4. Learning that specifically fits with how I like to learn.
5. Teacher-led learning at school/other formal place.
6. Being told what to learn.
7. Constructing meaning based on my own experiences.
8. Changing how I see myself.
9. Seeing something in a different way.
10. Learning with and through others.
11. Learning new facts.

These statements were developed to uncover a broad range of views about learning using questions developed from both theories of museum education and learning (Hein, 1992, 1995, 1997a, 1998; Hergenhahn, 1982; Malone, 1990; Woolfolk, 1998), as well as previous research that had used similar quantitative questions (Clarke, 1995, 1998; Marton et al., 1993; Packer, 2002; Park, 1994; Sachatello-Sawyer & Fellenz, 2000; Taylor, 1996). The final statements used represented the theoretical perspectives of didactic learning; discovery learning; physical/hands-on learning and social learning. As well, several aspects of constructivism were investigated through these statements—meaning making, seeing things differently, prior knowledge and interests, and choice.

Participants then rated the following nine resources based on the importance to them when learning something new:

1. Internet, websites
2. Other people – family, friends
3. Books/library
4. Work colleagues, peers
5. Television programs
6. Computer programs/CD-ROMs
7. Adult education courses
8. Universities, formal education courses
9. Museums, galleries, other cultural institutions.

These resources were developed both from the literature (Chapter 2) and the findings that had emerged from the in-depth interviews.

de Vaus (1991) identified three advantages in using rating scales. First, they encourage respondents to make a choice based on how strongly they feel about a complex subject area. Second, they increase validity by adding to data obtained from open-ended questions. Finally, reliability is met through obtaining a number of different sets of measures for similar question areas.

One aspect of rating scales that emerged during Stage One was deciding whether to use a five or seven point scale. In a review of the literature dealing with this issue Cox (1980) concluded that

> … the magic number seven plus or minus two appears to be a reasonable range for the optimal number of response alternatives (p.420).

He also added that the number chosen needed to be enough to obtain the required information, yet not too refined to cause errors. Osgood & Suci (1969) noted that the greater the intensity of assertions, the more likely they will be allocated to one end of the scale or other. After considering these ideas, a five-point rating scale was implemented for the learning and resource statements in the questionnaire.

Another issue in rating scales is the potential for bias in designing the questions (Argyrous, 1996; Cohen & Manion, 1994). For example, participants may give a biased response to a scale because of the way statements were ordered by responding more positively to statements asked at the beginning and more negatively later. To overcome this problem, two questionnaires were administered that rotated the order of the learning statements and resource questions.

After answering the rating scales, respondents were then asked to complete a set of ***semantic differential scales***. The pairs chosen emerged from the learning literature review (Chapter 2) and discussions with supervisors. The scales are summarised in Table 3.2 and an example of one from the questionnaire is in Figure 3.2.

Table 3.2. Semantic differential scales

Concepts	Constructs
Internet	Structured/unstructured
National park	Formal/informal
Theme park	Active/passive
Art gallery	Hard/easy
School	Fun/boring
Library	Chosen/imposed
Museum now	Dull/lively
Museum ideal	Useless/useful
Learning	Alone/with others
Education	Facts/ideas
Entertainment	

Figure 3.2. Example of a semantic differential scale: art gallery

	← art gallery →							
structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

Semantic differential scales have been used to measure attitudes and feelings towards a topic or set of concepts (de Vaus, 1991; Henerson, Lyons Morris & Taylor Fitz-Gibbon, 1987; Kinnear & Taylor, 1996; Kotler & Kotler, 1998; Kotler, FitzRoy & Shaw, 1980). The Semantic Differential Technique was a methodology proposed to account for variations in meanings that combined both associational research methods and scaling procedures. They originated from psychological studies of meaning, with the assumption that associations produced between ideas were not random but semantically determined (Osgood, 1969). The questions consist of sets of words and their antonyms (*constructs*) on opposite sides of a scale, with respondents being asked to indicate what position best represents their attitude towards a topic or object written at the top of the scale (*concepts*). Semantic differential scales were considered appropriate for this study as they gave a structured way to compare results across ten concepts, for example, how a museum was perceived compared to learning or education.

The five steps used to construct the semantic differential scale were adapted from Henerson, Lyons Morris and Taylor Fitz-Gibbon (1987, p.90-91):

1. Determine the attitude object to investigate (a *concept* such as learning, school, internet).
2. Select approximately ten pairs (the *constructs*, such as structured/unstructured; chosen/imposed).
3. Write the concept at the top of the scale and place constructs beneath it.
4. Instruct respondents how and where to mark their ratings and, as the scales call for first impressions, encourage them to work quickly.
5. Work out scores by assigning a number to each mark on the scale, averaging them and/or plotting them graphically.

3.3.3 Telephone survey

Two questions were inserted into a telephone survey to provide a point of comparison between Museum visitors and the general Sydney population. The survey was administered to 300 Sydney adults in October 2002 by a specialist research company that was conducting another survey for the Museum and agreed to add two questions. Respondents rated the same set of 11 learning statements and nine resources used when learning something new (described in Section 3.3.2), again using a five-point Likert scale. Overall percentage responses for each question were supplied by the company and provided a comparison between the general population and Museum visitors. These results are reported in detail in Chapters 4 and 5.

3.4 Stage Two method

Stage Two looked at the question: *How does a visit to an exhibition interact with an adult visitors' learning identity?*, addressing the following areas:

- How well do learning opportunities provided by museums match a person's learning identity?
- What roles do visitors play in a museum visit and do these roles influence their learning identity?

Ten groups of visitors to the Australian Museum participated in Stage Two, as detailed in Section 3.4.1. First, they were asked to describe their views of learning. Then, they visited an exhibition and afterward asked again about their views of learning and how the exhibition experience matched their earlier thoughts. They were also audio-taped with detailed behavioural observations undertaken in the exhibition, as outlined in Section 3.4.2. The exhibition used in the study, *Uncovered: Treasures of the Australian Museum*, is described in Section 3.4.3.

3.4.1 Sample

Given the social nature of museum visiting and the importance of others in learning found in both the literature and from Stage One, it was decided to sample ten visitor groups in Stage Two—five families and five couples aged from 20-75 years. This allowed for a wide age spread, while also including adult couples who have not been as extensively studied as families (as reported in Chapter 2).

Participants were selected from lists of volunteers who had either visited the Australian Museum in the previous 12 months or some time ago (5-10 years). A total of 17 adults were involved in Stage Two: 10 female and 5 male. As far as possible a gender balance was sought, but was not always possible due to the composition of each group. All families as well as one couple were accompanied by children aged from 3 to 16 years. Several of the children enthusiastically participated in both the exhibition visit and interviews. However, as this study focussed on adults, the only data from children used are incidental comments from the conversations and interviews where relevant.

Further details about the Stage Two sample are in Chapter 6, Section 6.1.

3.4.2 Procedure

Each group was met and briefed about the study and signed a university consent form (Appendix 2) which outlined the aims of the study and privacy considerations. They then participated in a **pre-visit interview** (Appendix 9) which asked them:

- to describe in their own words what the word *learning* means
- to outline how they personally like to learn
- to rate the same eleven statements about learning and nine resources for learning used in Stage One.

After the interview each group was taken to *Uncovered*, a primary participant identified and fitted with a lapel microphone and tape recorder to record their

conversation. They were observed, with their pathways marked on a copy of the exhibition floor plan and field notes taken (Appendix 13). When participants had completed their visit to *Uncovered* a **post-visit interview** was held (Appendix 9) which addressed:

- the main messages of the exhibition
- what they found particularly interesting and would tell others
- how the learning they experienced in the exhibition fitted (or not) with the ways they had stated in the pre-interview that they liked to learn
- general demographic information (age, cultural background, number of visits they had made to museums and galleries in the previous 12 months).

As a way to find out how they felt they learned in the exhibition, participants were also asked to rate the following ten statements on a four-point scale of *Yes / a lot*; *Yes / somewhat*; *No / not really*; *Not at all*:

1. I discovered things I didn't know.
2. I learned more about things I already knew.
3. I remembered things I hadn't thought of for awhile.
4. I shared some of my knowledge with other people.
5. I got curious about finding out more about some things.
6. I was reminded of the importance of some issues.
7. I got a real buzz out of what I learned.
8. It was pleasant to be reminded and to learn more.
9. It was all very familiar to me.
10. Some of the things I learned will be very useful to me.

These statements were derived from those used in a recent study of museum learning across a range of cultural institutions in Australia (Griffin, Kelly, Hatherly & Savage, 2005).

3.4.3 The exhibition

Uncovered: Treasures of the Australian Museum (hereafter referred to as *Uncovered*) was an exhibition held at the Museum from 13 March to 10 October, 2004. This exhibition was chosen as it was considered "traditional" in the sense that it consisted of objects, labels and text panels, with no hands-on or interactive elements. Appendix 10 contains an exhibition floor plan, with a selection of photographs in Chapter 6.

The exhibition focussed on why, how and what the Museum collected, through detailing the stories, images and voices behind some of the most important discoveries of the previous 175 years. Other areas dealt with why collections were so important and past, present and future Museum scientific research. The exhibition was developed by a small group of staff who had consulted widely across the Museum. In contrast with many other exhibitions at the Museum, *Uncovered* was extremely object-rich, with all artefacts sourced from the Museum's vast collections. It was divided into ten areas that reflected the Museum's collections and research strengths:

1. Anthropology (Australian Aboriginal and Torres Strait, as well as the Pacific and Indonesia)
2. Arachnology (spiders and their relatives)
3. Entomology (insects)
4. Herpetology (lizards and snakes)
5. Ichthyology (fish)
6. Malacology (molluscs, octopus, squid)
7. Mammalogy (marsupials, bats, monotremes, whales)
8. Mineralogy (rocks, minerals, crystals)
9. Ornithology (birds)
10. Palaeontology (fossils)

There were additional areas in the exhibition that covered the history of Museum collecting; why the Museum collected; the value of the collection; how to access the collection and information about the future of Museum collecting. There were also three DVDs showing a range of interviews with Museum staff who managed collections and conducted scientific and anthropological research.

Data from the exhibition summative evaluation undertaken by the Museum (Australian Museum Audience Research Centre, 2004b) was accessed for comparisons with participants in the present study. The Museum study consisted of two visitor surveys; one tracking study; an analysis of 20 visitor conversations; visitor counts and focus groups. The Museum study found that exhibits which encouraged conversations were exhibits that contained large, dead specimens (such as an emperor penguin and albatross); text that asked provocative questions; text that encouraged visitors to make connections to their lives; specimens that visitors considered to be strange and surprising; and tiny specimens that prompted visitors to wonder how scientists discovered them. Exhibits that enabled visitor groups to gather and talk and those that dealt with the practices of museum taxidermy and collecting also enhanced visitor conversations.

3.5 Reliability and validity

Regardless of the paradigm researchers choose to work within and whether methods used are qualitative or quantitative, reliability and validity issues need to be considered. One criticism of the interpretive approach, in particular, is a perceived lack of reliability and validity in both data collection and analysis (Usher, 1996). Yet, as Silverman (1993) stated, interpretive research '… can be *both* intellectually challenging and rigorous and critical' (p.144, emphasis in original).

3.5.1 Reliability

Reliability is defined as '… a measure of how consistent a research method is' (Diamond, 1999, p.77). Silverman (1993) outlined a number of ways that reliability can be achieved in qualitative research: pre-testing interview protocols and questions; using fixed-choice responses; and systematically collecting, transcribing and reporting field notes and transcripts for others to review as necessary.

In this study reliability was achieved through being a sole interviewer/observer and using the same set of guiding questions for all interviews. The quantitative tool used (the questionnaire) was reviewed by professional colleagues and contained questions that had been pre-tested. Fixed-choice responses were also used in a number of questions. Additionally, reliability was covered through systematically tape-recording and transcribing the interviews and exhibition conversations.

3.5.2 Validity

Validity was another issue considered in this study. Validity is defined as a '… measure [that] measures what it is intended to measure' (de Vaus, 1991, p.55). Validity relates to how well the analysis actually represents the phenomena it purports to represent: '… to know [that] the means of assessment you have developed is accurate and appropriate' (Diamond, 1999, p.75). One issue related to validity is bias. This is especially problematic in qualitative research as it has been recognised that interviewers come to the research with their own biases (Carr & Kemmis, 1986; Usher, 1996; Yates, 2004).

Silverman (1993) stated that validity in qualitative research can be covered through triangulation—using several different ways to collect and analyse data about the same phenomena. Triangulation has been defined as '… the use of two or more methods of data collection in the study of some aspect of human behaviour' (Cohen & Manion, 1994, p.233). Triangulation enables the complexity of human behaviour and thought to be uncovered, as well as offering

opportunities for introducing more creative and flexible elements to the research. The term derived from navigation where different bearings were used to give the correct position of an object (Cohen & Manion, 1994). Triangulation provides validity checks by comparing data gathered in different ways.

Another concept discussed in the literature is *ecological validity*, also called *context validity*. Ecological validity means that theories which will be applied to a specific setting, such as a museum, need to be generated from studies that are undertaken within that setting in order to be confident about the applicability of any resulting theory (Dierking, 1992; Entwistle, 1997).

There were two ways validity was addressed in this study. First, the variety of instruments used in the interviews, questionnaires and case studies ensured triangulation. These included learning diagrams, open-ended questions, rating scales, semantic differential scales, conversations and observations. Second, ecological validity was met through locating the study within a museum setting and selecting participants that had previously visited a museum. Ecological validity was further strengthened by studying visitors in an exhibition that focussed on collection objects and research (or what could be called the "work" of the Museum) as these types of exhibitions commonly occur across many cultural institutions.

3.6 Data analysis issues: Stage One

Once the data were gathered, managing the wealth of qualitative data and identifying the appropriate statistical tests was a considerable challenge. Another problem was analysing the data generated from the semantic differential scales, given that much of the literature sourced about analysing these scales had been written before using manual, not computerised data management systems.

Approaches to manage and analyse qualitative data outlined by Miles and Huberman (1994) were used in Stage One. The in-depth interview transcripts were first analysed individually (an example of a marked-up transcript is in Appendix 11), and then common themes that emerged across the eight transcripts

were identified. The open-ended responses from the questionnaire respondents were also gathered into a set of categories, enabling statistical tests to be applied across samples and meaningful conclusions to be drawn without losing the individual nature of the responses.

In the questionnaires a range of statistical tests were considered for the learning statements and resource questions to test relationships between variables and see whether the findings were significant (Argyrous, 1996; Diamond, 1999; Fink, 1995a; Fitz-Gibbon & Morris, 1987; Francis, 1999). Before deciding which tests were the most suitable the dependent and independent variables were identified, as detailed in Table 3.3.

Table 3.3. Dependent and independent variables: questionnaires

Dependent variables	Independent variables
Descriptions of learning Descriptions of education Descriptions of entertainment Learning statements Resources used in learning	Age Composition of visiting group Educational qualifications Gender Museum/gallery visiting habits Occupation Place of residence

To further investigate the questionnaire data and test relationships between dependent and independent variables the *chi-square test* was used to check significant differences by age; composition of visiting group; education qualifications; gender; occupation; place of residence and visiting habits against responses across three question areas:

- describing learning, education and entertainment;
- the learning statements; and
- resources used in learning something new.

Significance was determined when $p<0.05$ and when the cell size was more than 5 cases (Bryman & Cramer, 2001; de Vaus, 1991; Fink, 1995a; Francis, 1999). The results of these tests are reported in Chapters 4 and 5.

Determining how to analyse and present data from the semantic differential scales took some time as early studies reported in the literature were undertaken before the availability of computer technology for analysing quantitative data. Although a small number of more recent references were found (Kinnear & Taylor, 1996; Kotler & Kotler, 1998; Kotler et al., 1980) these gave minimal guidance about how to manage the analysis of the scales using computer software. Therefore, to analyse these results a range of charts were generated in PowerPoint using the mean, or average score, for each construct. These charts illustrated the results and differences between ratings of the 11 concepts. However, in the analysis it was found that the meaning of the scores in the middle became unclear and, therefore only scores with clearly differentiated results were used.

3.7 Methodological issues: Stage Two

Section 3.3 described the various methods employed in Stage One, justifying the choices made and the processes of developing the research instruments. A number of different methodological issues were faced in Stage Two: how to analyse conversations and undertaking observations.

3.7.1 Analysing conversation data

Silverman (2000) outlined three ways to analyse conversation data. The first was to identify sequences of related talk. Second, to examine how speakers took on different roles and identities. Finally, he suggested to look for specific outcomes and trace those back in the conversation to find out where and how they originated. Ash (2002) noted that

> Maintaining the tension between looking closely at any particular segment(s) while maintaining the integrity of the whole is paramount in microanalysis (p.394),

yet Silverman (2000) reminded us that as long as the parameters of analysis are made clear '… the analysis of conversations does not require exceptional skills' (p.151) and should be reasonably straightforward.

In museum learning research techniques to analyse conversations developed to date have ranged from relatively simple to more complex systems that involved quantitatively counting chunks of conversation (Allen, 2002) or developing more qualitative/holistic categories that considered the broader context of the conversation and how they applied to learning (Ash, 2002; Paris & Mercer, 2002; Rosenthal & Blankman-Hetrick, 2002; Stainton, 2002). Leinhardt and Knutson (2004) used conversations to discuss museum learning in terms of "conversation elaboration", that accounted for the conjunction of the museum context with the shared identity of the group.

Rosenthal and Blankman-Hetrick (2002) taped visitors' conversations with interpreters at a living history museum. The categories of analysis they developed for those conversations were:

- *list* when visitors listed what they saw
- *synthesise* when they compared current experiences to prior experiences and knowledge
- *analyse* when they discussed how something that they saw might have worked or been used in the past
- *explain* when visitors brought together existing information and new insights to draw conclusions or clarify what was happening.

Another way of coding conversations was employed in a study of interactions between visitors attending an exhibition about African art (Stainton, 2002). Learning was uncovered through the meaning making that could be inferred from transcripts of visitor conversations, as well as comparing their views about the content in pre- and post-interviews. The categories Stainton developed were drawn from the curatorial intent of the exhibition gathered through interviews with staff (Table 3.4, over the page).

Table 3.4. Visitor talk: coding categories

Category of Talk	Definition
Aesthetic	Aesthetic ideas supplied in text/labels or by visible features of artwork
Anthropological	Anthropological ideas supplied in text/labels or by visible features of artwork
Visitor/aesthetic	Visitor's own interpretations on aesthetic ideas/features
Visitor/anthropological	Visitor's own interpretations on anthropological ideas/features
Visitor management	Refers to spatial orientation, feelings of tiredness, interactions with others, other talk relating to museum as a venue, not exhibit-related
Visitor personal	Talk not related to above categories
Other	Inaudible, unintelligible, too fragmented to code

(Adapted from Stainton, 2002, p.225)

Allen (2002) used conversation analysis in studying visitor learning from an exhibition about frogs at the Exploratorium, United States. Allen categorised conversations to look for evidence of "learning talk" which she defined deliberately '… quite narrowly to refer to discussion of the exhibits and the exhibition, and its topic area' (p.262). Allen employed the following set of underpinning questions:

> Is this evidence of learning? … Is it likely that one or both of these people have just acquired new knowledge or new ability from what was said? … Has this utterance advanced the dyad's collaborative process of making meaning from the exhibition? (p.263).

The categories that resulted from Allen's investigations were:

- *Perceptual talk* where visitors drew attention to something through identifying, naming, paraphrasing text.
- *Conceptual talk* being cognitive interpretations including inferences, predictions and reflection.
- *Connecting talk* making explicit connections between something in the exhibition and visitors' external experiences.
- *Strategic talk* which was explicit discussion about how to actually use the exhibition.
- *Affective talk* expressing feelings, emotions and pleasure (adapted from Allen, 2002, p.274-277).

Ash (2002) studied how families made sense of biological themes in an exhibition about life through time by looking at interactions and behaviour over a longer time period. Ash decided to identify significant conversation events (SEs) for in-depth analysis, recognising that '… language is a negotiating medium for teaching and learning' (p.361). SEs were defined as having

> … recognisable beginnings and endings … [and] were sustained conversational segments that differed from short interactions, which can precede and follow [other] SEs (Ash, 2002, p.366).

The conversations gathered in Stage Two were transcribed then analysed through applying Ash's idea of significant conversation events (SEs), to identify short, sustained segments of conversation with definite beginnings and endings that related to a particular exhibit, content area or theme. The underlying question addressed was whether the conversations gave any indication of how an individual's learning identity was expressed when viewed in relation to themes identified from the interview and observation data. Appendix 12 contains a sample marked-up conversation transcript.

3.7.2 Observations

Observation as a methodology has its origins in the practice of anthropology and ethnography (Silverman, 1993). Observation techniques have been used over a long period of time in museums to understand how visitors behave in exhibitions (Alt, 1977; Alt & Shaw, 1984; Beer, 1987; Black, 2005; Gilman, 1916, 1923; Screven, 1990; Serrell, 1998), and from these behaviours infer what they may have learned (J. Griffin, 1998; Griffin et al., 2005). In a museum context observations are unobtrusive recordings of visitor behaviour in an exhibition or across an entire museum, noting the exhibits attended to and what people are doing (for example reading, browsing, studying), time spent and pathways/flow. Observations can be systematic collections of data through watching visitors either at specific sections of an exhibition or tracking their pathways and behaviour across an entire exhibition.

Cohen and Manion (1994) noted that there were a wide variety of ways that observations could be undertaken, depending on the aims and nature of the study. They described observations as '… a methodological *approach* rather than one specific method' (p.122, emphasis added). However, Cohen and Manion also noted that observations as a method have been criticised as being subjective, biased and impressionistic, and not always quantifiable.

Diamond (1999) reported that observations have played a major role in how museum staff have viewed visitor engagement. She pointed out that the vast range of observational studies conducted in museums since the 1930s demonstrated the critical role of social interaction in exhibitions and visitor learning. Diamond also outlined how reliability and validity could be met in conducting observational studies through developing a consistent means of assessment and developing coding frames that emerged from the environment being studied. One advantage of conducting observations in museums identified by Diamond is that a floor plan of the exhibition or the entire museum can be used to track visitor pathways in order to systematically note behaviours at different parts of the exhibition.

Hein (1998) noted that there were a range of observation methods that museum research has employed over the years. *Naturalistic observations* used a qualitative approach in watching and noting what visitors were doing in discrete ways. *Structured observations* and *event-based observations* were more quantitative in nature employing a pre-defined set of coding categories. When conducting observation studies Silverman (1993) stressed the importance of writing field notes and using these in developing coding frames, as did Huberman and Miles (1998). Grounded theory principles (Strauss & Corbin, 1998b) can also be employed to generate coding categories.

Observation and tracking studies in museums (Beer, 1987; Hein, 1998; Screven, 1995; Serrell, 1997) have generally found that visitors:

- follow individual pathways
- spend little time at exhibition components
- look at a small proportion of the total number of objects on display
- seldom read labels
- stop at less than half of the exhibits, skipping many elements (visiting around one-third)
- use trial and error for interactives
- spend usually less than 20 minutes in an exhibition
- attention to exhibits dramatically decreases after 30 minutes.

However, these generalisations also reflect enormous individual variance between the type and locations of each study.

Of relevance to Stage Two is the work of McManus (1987; 1988) who studied 1,572 individuals in 641 visitor groups in the Natural History Museum, London. She found differences across a range of visitor types. Singletons briefly visited exhibits and comprehensively read text panels and labels. Couples also read in detail and didn't converse as much as others, yet stayed longer in exhibitions. Adult social groups would look closely at exhibits but were likely to leave them after 30 seconds, and were overall less involved than other types of visitors. McManus found that visitor groups containing children were more likely to use interactives; have long periods of conversation about what they had seen and done; visited an exhibition for longer; and were not as likely to read labels. She also described family visitors as "hunter-gatherers":

> … actively foraging in the museum to satisfy their curiosity about the topics and objects which museum professionals collect and study. … [This] behaviour is practical and economical since the exploration and information-gathering is shared out between the family members (McManus, 1994, p.91).

In Stage Two observations were conducted using a floor plan of *Uncovered*, marking the pathways visitors took and the total time they spent in the exhibition. Extensive field notes were made and photographs taken (with participants' permission) as a visual record of those involved in the study. Appendix 13

contains a sample of the observations and field notes. The observation results were compared with a broader set of visitors to the exhibition (Australian Museum Audience Research Centre, 2004b), as well as to general visitor behaviour described earlier (Hein, 1998; McManus, 1988; Screven, 1995; Serrell, 1997) to see whether there were any notable differences that emerged from the Stage Two sample.

3.8 Where now?

This chapter outlined the methodology used in the entire study, including sampling and choice of specific qualitative and quantitative methods. It also addressed ethical, reliability, validity and statistical issues. The pilot studies demonstrated that it was possible to develop a set of instruments to test the research questions using a triangulated strategy within an interpretive framework. Individuals' views of learning were uncovered and sets of data generated across the whole sample that contributed to answering the research questions. The following two chapters describe and discuss the findings from Stage One and identify new issues that emerged, which were subsequently investigated in Stage Two.

Chapter 4. Capturing Learning: Stage One Findings

The primary research question addressed in this study was *What are the interrelationships between adult visitors' views of learning and their learning experiences at a museum?* Stage One investigated learning from the individual's perspective, uncovering their personal philosophy and views about learning. This chapter presents findings from Stage One organised under the following sub-questions:

1. How do adult museum visitors describe learning?
2. How is learning viewed in relation to education and entertainment?
3. What resources and places are accessed when learning and where do museums fit?

The relationships between the outcomes of Stage One across samples are also described, with the implications of these findings and how they relate to the literature discussed in Chapter 5.

4.1 Stage One participants

Three different groups of participants were involved in Stage One—eight ***in-depth interviews*** with visitors to the Australian Museum; 100 ***questionnaires*** with Australian Museum visitors; and a ***telephone survey*** of 300 Sydney adults to compare Museum visitors' responses with the general population.

As outlined in Chapter 3, Section 3.2.1, adults were sampled because they are the largest component of museum visitors. As well, it was recognised that lifelong learning is becoming a key focus for museums, therefore understanding how adult visitors' view learning is critical. This section outlines the profiles of the adult museum visitors who participated in Stage One.

4.1.1 Profile: in-depth interview participants

Eight in-depth interviews were conducted with adults aged over 25 who had visited the Australian Museum in the previous six months, as outlined in Table 4.1. Each interview followed an interview guide (described in Chapter 3, Section 3.3.1) and lasted between 45 minutes and one hour.

Table 4.1. In-depth interview participants

Interview # and Pseudonym	Participant details
3.1: Brenda	50 year-old female, two adult daughters aged 24 and 21. Works on special projects in a university and is teacher by training, with a Masters degree. Visits a range of cultural institutions with spouse and friends.
3.2: Rosemary	Aged in fifties, one adult daughter and one grandson aged 5 years. Educated to TAFE level. Works in a clerical capacity for a major Australian transport company. Also held a range of managerial roles in other companies and been self-employed. Infrequent visitor to cultural institutions, although had visited Australian Museum several times in previous year with grandson.
3.3: Mavis	Aged in late 60s-early 70s, married with two adult daughters and grandchildren. A trained Librarian, still active in the workforce. Visits many museums and galleries, and a member of a number of museum and gallery societies.
3.4: Scott	27 year-old university-educated male. Works in a professional capacity for a city-based financial institution. Not a regular museum or gallery visitor, as is at a stage of life where social activities and friends are priorities.
3.5: Stephen	28 year-old male born in the Netherlands and living in Australia for almost five years. Transferred to Australia through his job with an international logistics company where he is in a management role. As a child in the Netherlands was taken to museums (*musea*) across Europe by his parents and through school excursions.
3.6: Doug	53 year-old male with a daughter aged 15 years. Works in a professional role for major Australian transport company and in spare time is a sports journalist, writing for a range of local newspapers. Frequent visitor to art galleries with daughter.
3.7: Louise	26 year-old female of Torres Strait Islander descent. Tertiary educated and lives and works in the cultural industry in Canberra. Most recently undertook large study tour of museums across North America.
3.8: Dennis	44 year-old male working in arts policy. Has been visiting a wide range of museums and galleries for many years, both from a professional and personal interest. Is well-travelled, likes to read, with a keen interest in South East Asian ceramics, of which he has built up a sizeable collection.

4.1.2 Profile: questionnaire respondents

As outlined in Chapter 3, Section 3.3.2, 100 adult visitors to the Australian Museum were interviewed in November 2002 and January 2004. This sample (Table 4.2) was primarily female, aged 35-49 years; Sydney residents; Australian-born; educated to a university/post-graduate level and visited with their family. The majority were regular visitors to cultural institutions, with 55% making between two and five visits and 24% more than five visits in the previous 12 months. Fifty-one percent had visited the Australian Museum in the past 5 years, 29% more than five years ago and 20% were new visitors. Thirty-four percent described their occupation as professional, followed by education (17%), managerial (9%), student (9%) and trade (6%).

Table 4.2. Questionnaire respondent details

		Percentage
Gender	Male	32
	Female	68
Age	18-24 years	7
	25-34 years	28
	35-49 years	49
	50-64 years	10
	65+ years	6
Location	Sydney	63
	Newcastle/Canberra/Wollongong	10
	Other NSW	13
	Interstate	9
	Overseas	5
Companions	Family	70
	Family and friends	9
	Friends	7
	Partner/spouse	4
	Alone	10
	Other group	0
Highest level of educational qualifications	Primary	1
	Secondary	16
	TAFE	16
	University	44
	Post-graduate	23
Cultural background	Australian-born	81
	Overseas-born, non-English speaking country	4
	Overseas-born, English speaking country	15
When last visited Museum	In past year	27
	In past two years	12
	In past five years	12
	More than five years ago	29
	First visit	20

Estimated number of visits to cultural institutions	One visit	21
	Two-three visits	32
	Four-five visits	23
	More than five visits	24
Occupation (Note: doesn't add to 100 due to some non-responses)	Professional	34
	Home duties	1
	Managerial	9
	Self-employed	3
	Education	17
	Trade	6
	Student	9
	Not employed	0

A comparison was made between the questionnaire sample and general Australian Museum visitors (Australian Museum Audience Research Centre, 2004a), as well as those who visited during January 2003 when the bulk of data was collected (Australian Museum Audience Research Centre, 2003). This revealed that those sampled in the present study included more females, family visitors and Sydney-residents, with a greater proportion university or post-graduate qualified. The large representation of family visitors in the sample might have been due to the location of the survey in the *search & discover* exhibition which is traditionally visited by these groups. Also the questionnaire was administered on weekends and in the January school holidays which usually attracts large numbers of family visitors, especially women aged 35-49 years (Australian Museum Audience Research Centre, 2003).

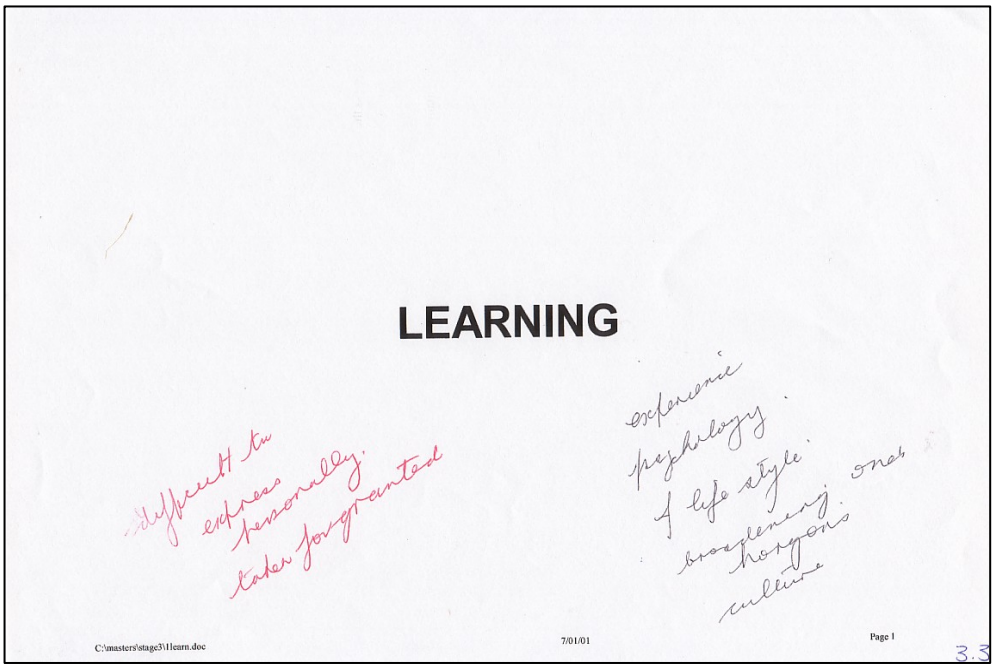
4.2 Sub-question 1: Adult museum visitors describe learning

The first area addressed in the eight in-depth interviews and 100 questionnaires was for adult museum visitors to describe learning. In-depth interview respondents were asked to write on a diagram words and phrases that came to mind when thinking about learning. Then, they talked about the steps they followed and their experiences when learning something new (Section 4.2.1). The questionnaires began with an open-ended question asking respondents to describe learning, and later to rate two sets of statements that related to various aspects of learning on a five-point scale (Section 4.2.2).

4.2.1 Describing learning: in-depth interviews

All of those interviewed in-depth initially found it difficult to describe learning. They reported that they had never been asked about it and not had to explain the concept to anyone before. Figure 4.1, Mavis's learning diagram, illustrated this problem. After reflecting on her responses at the end of the interview Mavis wrote *difficult to express personally* and *taken for granted* on her learning diagram (Interview Transcript 3.3, 8/01/01).

Figure 4.1. Learning diagram: Mavis



However, despite finding learning initially hard to explain, in-depth interviewees still noted around 40 different words and phrases on their learning diagrams, listed in Table 4.3.

Table 4.3. Words / phrases used for learning: in-depth interviewees

Interview # and Pseudonym	Words/phrases	
3.1: Brenda	• imagination • curiosity • gaps • clear outcomes, objectives, ideas	• interest • experience • facts
3.2: Rosemary	• skills • knowledge • school—paper, pens, teachers • new insights • innovation • self analysis • choice • fun	• broadening horizons • a lifelong process • influenced from a young age by family, parents • more learning opportunities available as an adult
3.3: Mavis	• experience • ongoing process, a life style, broadening horizons • alone and with others	• increasing knowledge • fascination • interest and interesting • involvement
3.4: Scott	• knowledge • understanding • experience, growth • mental and physical development • contemplation, appreciation • changed perception	• enjoyable • creativity • collaboration of thoughts • commitment • life • reading • contribution
3.5: Stephen	• school • adult • choice • everyday/ongoing—a natural process • personal interest	• fun • changed view through new information • changing attitude/confirming current views
3.6: Doug	• knowledge • comprehension • exploration • persistence • library	• interaction • questioning • physical • touch and feel
3.7: Louise	• sharing • oral • exchange • discovery	• continuum • spirituality • identity • stories
3.8: Dennis	• facts and information → knowledge • with others, e.g. interest groups • physical aspects	• stories • relevance • personal interest • surprise

Based on the above words and phrases and the interview responses other themes that emerged during the in-depth interviews included the role of interest, choice and active learning. It was found that the motivation for learning was strongly based on personal interest. For example, Stephen remarked that he needed to be interested in a topic and involved with it somehow for learning to happen: *... it's funny actually that once you're interested in a subject it's just there … before you never noticed it, where all of a sudden you are looking for it and so you find it* (Interview Transcript 3.5, 5/03/01). Stephen also mentioned choice as a way of facilitating learning: *... learning never, never ends ... it's a choice ... a very natural process* (Interview Transcript 3.5, 5/03/01).

The four male in-depth interviewees talked about learning as a physical process of active engagement. Scott explained that … *it's … growth, mental and physical. We tend to associate learning with mental* [but] *I think it's also a physical trait as well. … when you have your mind and body connected it's a learning process as well.* (Interview Transcript 3.4, 24/02/01). Doug stated that in coaching/learning about sport you had to feel and experience it physically before teaching others: *until you actually do it, until you feel it* (Interview Transcript 3.6, 5/03/01). Ideas about choice and physical learning are further explored in Chapter 5.

4.2.2 Describing learning: questionnaire respondents

The first question asked in the questionnaires was: *Could you please describe in your own words what you think learning is?* All responses were recorded and then coded using a set of categories that emerged from the data. One-hundred and ninety-six different descriptions of learning were gathered which were then grouped under 21 different categories (Table 4.4).

Table 4.4. Describing learning: questionnaire respondents

Response Code	Sample Response	Percentage of responses (*N=196)
Gather/acquire/get information	Acquiring new information	18
Gather/acquire/get knowledge	Increasing your knowledge	13
Physical	… physical, learn by hands-on	8
New ideas and ways of seeing	Introduction to new ideas and different perspectives	8
Understanding	An understanding of how things work	6
Expand	Expanding your knowledge about an area by a variety of means	6
Teachers/teaching/ school/education	School and kids	6
Experience	Opening the mind to new experience	6
Applying	The acquisition of knowledge you can apply	5
Discovering	A discovery path	5
Cognitive	Mental stimulation	4
Social	Passing of knowledge from one to another	3
Absorbing	Assimilation of how to use information	3
Exploring ideas	About exploration of ideas	2
Fun/entertaining	… can be fun	2
Tools	… using computers	1
Gather/acquire/get skills	Learning skills	1
Accumulated experience	… learn by doing and making mistakes	1
Changed views and attitudes	New aspect on life Developing attitudes and values	1
Changed behaviour	When you can articulate what you know and act by it, do it	1
TOTAL PERCENTAGE		**100**

* As noted in Chapter 1, Table 1.1, n is used to represent the total number of *respondents* and N refers to the total number of *responses* to the specific question.

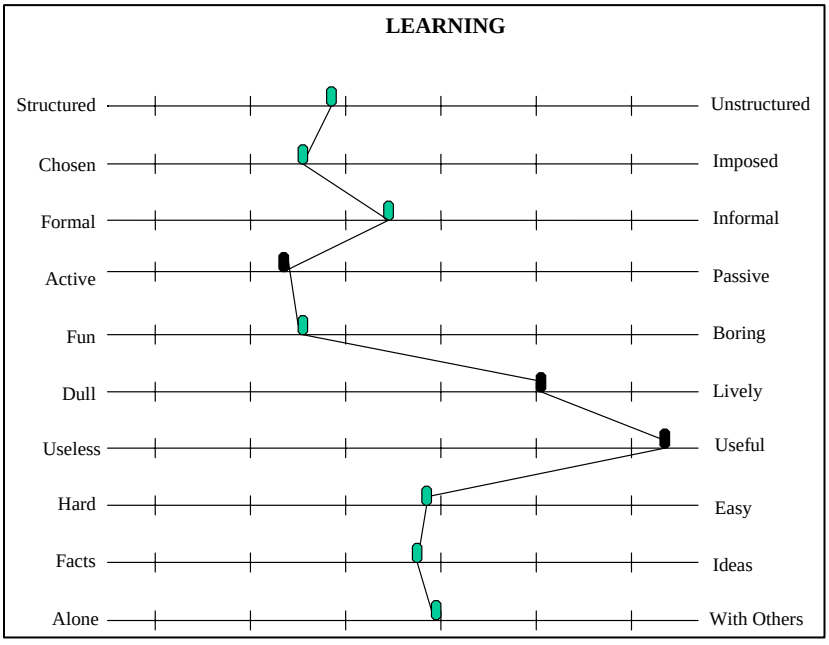
A wide variety of ideas about learning emerged from the questionnaire data, with 31% of responses under the areas of learning as gathering together information or knowledge. The words "information" and "knowledge" were described as two separate ideas by this sample—information as a series of facts or skills that were then put together or applied to create knowledge:

- *Expanding your knowledge, a new aspect on life* (Questionnaire respondent #11).
- *Being able to put pieces of information together* [to] *draw conclusions* (Questionnaire respondent #71).

Questionnaire respondents also mentioned learning as a process of increasing and expanding understanding, and learning as experiencing. Other words/phrases used were discovering, gaining new ideas or ways of seeing, exploring and absorbing. These are discussed in Chapter 5.

As described in Chapter 3 (Section 3.3.2), in the questionnaire the semantic differential scale was used to measure attitudes towards a set of concepts. Figure 4.2 illustrates the average scores across the 100 questionnaires for each construct across the seven-point scale.

Figure 4.2. Semantic differential scale results: learning



The scores for the semantic differential scale for learning revealed that the constructs more strongly associated with the concept of learning (marked in black on Figure 4.2) were active, lively and useful. These results are further discussed in Chapter 5.

4.2.3 Learning statements: questionnaire participants and telephone respondents

Respondents in both the questionnaire and telephone survey rated eleven statements about learning developed from the literature review (as outlined in Chapter 3, Section 3.3.2) across a scale of 1 to 5. A score of 1 indicated that the statement was not important, 2 that it was slightly important, 3 moderately important, 4 important and 5 as very important.

Table 4.5 (over the page) shows percentage results for each statement for the questionnaire sample, ordered from highest to lowest mean score.

Table 4.5. Learning statements results: questionnaire sample

	Percentage					Mean	Standard Deviation
	1 (not important)	**2**	**3**	**4**	**5 (very important)**		
Learning new facts	0	1	18	33	48	4.28	0.79
Learning when the information provided is of immediate interest to me	1	3	13	34	49	4.27	0.87
Learning in a physical, “hands-on” way	1	3	16	36	45	4.21	0.88
Seeing something in a different way	2	2	14	39	43	4.19	0.90
Learning that builds on what I already know	2	1	13	46	38	4.17	0.84
Constructing meaning based on my own experiences	1	6	11	52	30	4.04	0.86
Learning with and through others	3	4	12	50	30	4.01	0.93
Learning that specifically fits with how I like to learn	4	6	26	30	34	3.84	1.09
Changing how I see myself	2	17	30	30	20	3.49	1.06
Teacher-led learning at school/other formal place	6	21	29	23	21	3.32	1.20
Being told what to learn	34	32	22	9	1	2.09	1.02

Overall, the statements *Learning new facts* and *Learning when the information provided is of immediate interest to me* were the two rated most highly, with mean scores of 4.28 and 4.27 respectively. In contrast, *Being told what to learn* was rated the lowest in importance, with a mean score of 2.09. The statement *Teacher-led learning at school/other formal place*, had the second lowest mean, yet the standard deviation of 1.20 indicated that this statement generated the greatest variety of responses across the sample.

Combining the scores of 4 and 5 into a high rating gave a better indication of which statements were regarded as important for this sample. Seven of the statements from the questionnaires were rated as important/very important by eight in ten questionnaire respondents:

- *Learning that builds on what I already know* (84%).
- *Learning when the information provided is of immediate interest to me* (83%).
- *Constructing meaning based on my own experiences* (82%).
- *Seeing something in a different way* (82%).
- *Learning new facts* (81%).
- *Learning in a physical, "hands-on" way* (81%).
- *Learning with and through others* (80%).

Compared with these results *Learning that specifically fits with how I like to learn* was considered as important/very important by 64% of respondents. Half of the sample considered *Changing how I see myself* as important/very important, with one-third rating this as moderately important. Forty-four per cent rated *Teacher-led learning at school/other formal place* as important/very important, although, as mentioned above, the standard deviation of 1.20 suggested that responses varied the most for this statement. *Being told what to learn* was considered the least important for learning, with 10% of the sample rating this statement as important/very important, and 66% as not important/slightly important (score of 1 or 2).

Chapter 3, Section 3.6, outlined the choice of the *chi-square test* as a way to check for differences between characteristics of the sample. This test found significant differences for the most relevant independent variables of gender, age and visitor group (Table 4.6).

Table 4.6. Significant differences: learning statements

Statement	Variable	p-value^
Learning in a physical, "hands-on" way	Families	p<0.05
Learning with and through others	Aged 35-49	p<0.01
	Female	p<0.05
Seeing something in a different way	Families	p<0.05
	Aged 35-49	p<0.05
Learning that specifically fits with how I like to learn	Families	p<0.01

^ Significance was determined if p<0.05, and considered highly significant when p<0.01.

To provide a comparison between Museum visitors and the general population, a telephone survey of 300 Sydney adults was undertaken, with participants asked to rate the same eleven statements on the same five-point scale (Table 4.7).

Table 4.7. Learning statements: telephone survey sample

	Percentage				
	1 (not important)	**2**	**3**	**4**	**5 (very important)**
Learning new facts	0	3	9	71	16
Learning when the information provided is of immediate interest to me	0	2	6	73	18
Learning in a physical, "hands-on" way	0	4	4	53	39
Seeing something in a different way	0	6	7	74	12
Learning that builds on what I already know	0	6	7	67	21
Constructing meaning based on my own experiences	0	4	6	70	20
Learning with and through others	1	6	8	60	25
Learning that specifically fits with how I like to learn	0	7	9	57	24
Changing how I see myself	3	21	11	59	5
Teacher-led learning at school/other formal place	5	20	12	50	13
Being told what to learn	34	32	13	20	1

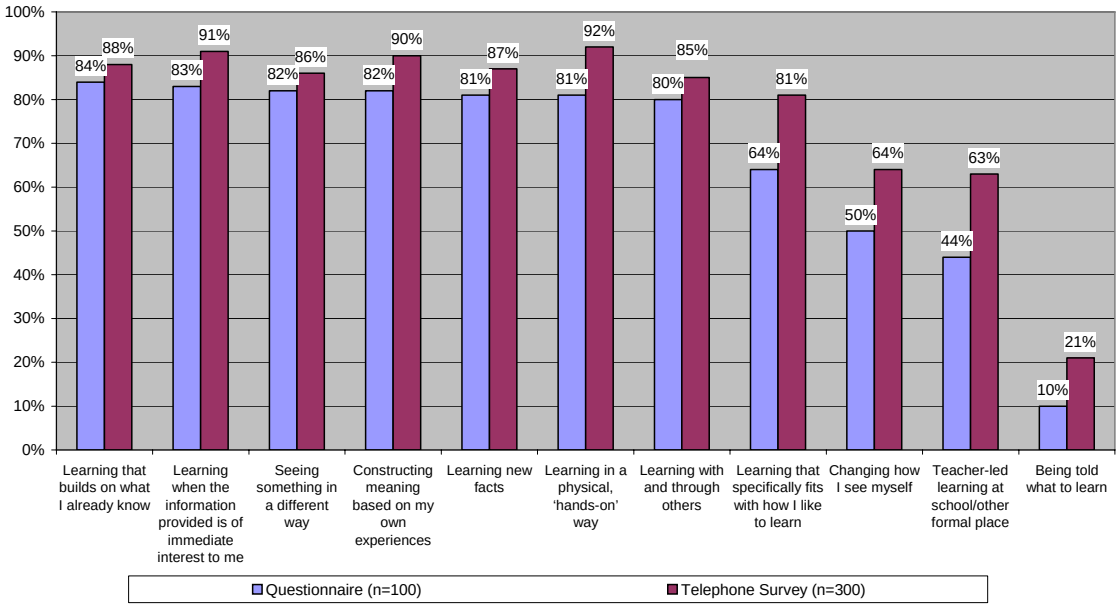
Again, through combining scores of 4 and 5 into a high rating, the statements rated as important/very important when learning something new by the telephone survey respondents were:

- *Learning in a physical, "hands-on" way* (92%).
- *Learning when the information provided is of immediate interest to me* (91%).
- *Constructing meaning based on my own experience* (90%).

Similar to the questionnaire results, *Being told what to learn* was rated the lowest, with 21% rating this as important/very important, with the same percentage as questionnaire respondents (66%) rating this as not important/slightly important (a score of 1 or 2).

Figure 4.3 summarises the comparison of high ratings (combined score of 4 and 5) between questionnaire respondents and telephone survey samples. The left to right order follows the highest to lowest responses for the questionnaire sample.

Figure 4.3. Important/very important ratings: learning statements



Generally, the telephone survey respondents rated all statements more highly than the questionnaire participants, with four rated considerably higher:

- *Teacher-led learning at school/other formal place* (19% difference)
- *Learning that specifically fits with how I like to learn* (17% difference)
- *Changing how I see myself* (14% difference)
- *Learning in a physical, "hands-on" way* (11% difference)

The implications of these results are discussed in Chapter 5.

4.2.4 Summary: participants' views of learning

All eight in-depth interviewees saw learning as something humans do every day, a process of gathering information, applying facts and information, adding to knowledge and then changing in some way, as suggested by Dennis: *Knowledge is applied, information is more facts and I guess knowledge is applied information …* [you] *gather information, you turn it around in your head, you apply that information.* (Interview Transcript 3.8, 13/03/01).

Learning was also described as an active way of seeking information about an area of interest, then making sense of it in order to create knowledge and new ways of thinking about something. As they thought more about learning throughout the interviews, the in-depth participants reflected on the idea that their attitudes could be modified through a process of personal change and growth by reinforcing and building on previous knowledge as well as through experiencing something new. For example, when Rosemary summarised her thoughts about the actual outcomes of learning a deeper meaning emerged for her: *So I do believe you gain new insights from learning and you do feel that you can be more innovative through your learning and then you self-analyse yourself as to where you're capable of exploring or going further with what you're learning.* (Interview Transcript 3.2, 13/12/00).

Questionnaire respondents identified a range of different learning outcomes, such as gaining information, knowledge or skills, as well as developing new insights, appreciation and deep learning through increased understanding and attitude change:

- *Opening the mind to new experience* (Questionnaire respondent #4).
- *Acquiring new knowledge and applying that* (Questionnaire respondent #5).
- *Expanding your knowledge about an area by a variety of means* (Questionnaire respondent #11).
- *… exploration of ideas* (Questionnaire respondent #20).
- *Picking up from other peoples' or your own experiences, and applying that to whatever you do* (Questionnaire respondent #39).
- *An understanding of how things work* (Questionnaire respondent #42).
- *Discovering new ways of thinking and knowledge* (Questionnaire respondent #99).

4.3 Sub-question 2: Learning, education and entertainment

The second sub-question considered in Stage One was how learning, education and entertainment were viewed by participants to see if there were any differences. This section first outlines how education and entertainment were described by questionnaire respondents and then presents the differences between the three concepts. The implications of these findings, including the relationship between the three terms, are explored in Chapter 5.

4.3.1 Describing education

After being requested to describe learning, questionnaire respondents were then asked: *Could you please describe in your own words what you think education is?* Again, all responses were recorded and then coded. For comparative purposes the response categories developed for education (Table 4.8, over the page) were kept as similar as possible to those generated for learning (Section 4.2.2, Table 4.4).

Table 4.8. Describing education

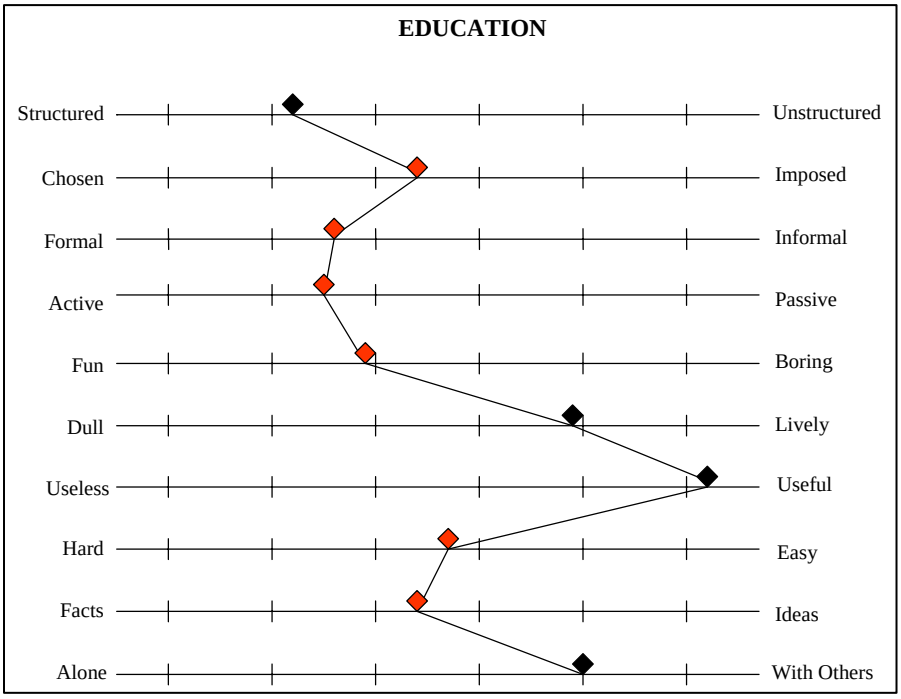
Response Code	Sample Response	Percent of responses (*N=208)
Extension of/way of delivering learning	Teaching is a process of imparting learning	16
Learn/acquire/get/learn general knowledge	Facilitating the acquiring of knowledge	11
Teaching/teachers/school	Learning from someone else or someone else teaching you	9
Something you are told to do/have to do/tell others to do	It's got no choice – you have to do it	9
Expand	Allowing people to broaden the mind	9
Lifelong	It's necessary about preparing yourself for life	7
Experience	Combination of experience and teaching	7
Structured/formal	Pretty structured, involves discipline	6
Gather/acquire/get/learn specific facts/information	Specific learning – facts and figures	6
Understanding	Improving understanding	5
Applying	Not only telling facts but how to apply knowledge	4
Social	Takes place within family and community through self-education	3
Physical	… written, visual or sensory presentation	2
Learn/acquire/get/learn general/life skills	Life skills	2
Change in world view	The gaining of wisdom, lessons in life, more than just facts but how you relate to the world	2
Cognitive	… mental stimulation	1
Change in self	The finding out of skills, knowledge, abilities, interactions and who you are in the process	1
TOTAL PERCENTAGE		**100**

* As noted in Chapter 1, Table 1.1, n is used to represent the total number of *respondents* and N refers to the total number of *responses* to the specific question.

The largest number of responses came under the category that described education as an "extension of" or "way to deliver learning", followed by education as a process of "gathering general knowledge". Education was also identified with teachers/teaching and school, something you were "told to do", as well as broadening and expanding the mind.

Education was another concept rated by the 100 questionnaire participants in the semantic differential scale. Results across the sample (Figure 4.4) demonstrated that the constructs most strongly linked to education were structured, lively, useful and with others (shown in black on Figure 4.4). Chapter 5 discusses these results further.

Figure 4.4. Semantic differential scale results: education



4.3.2 Differences: learning and education

Although there were similarities in the ways that education and learning were described, for example, as ways to acquire information, knowledge and skills, two notable differences were found. First, "being told what to do by others" was mentioned in response to education, with no respondent using these words when describing learning in the open-ended question. Nine percent stated that education was something you are told to do or tell others to do:

- *It's not a choice, you have to do it* (Questionnaire respondent #19).
- *Someone else giving you the information* (Questionnaire respondent #70).

Similarly, when asked to compare learning with education Stephen remarked that *education is more given to you* (Interview Transcript 3.5, 5/03/01).

Second, more "concrete" words were used to explain education. For example, 16% of the categories from the questionnaires showed that education was described as a way to deliver learning:

- *A formal program for expanding someone's knowledge about an area* (Questionnaire respondent #11).
- *Pretty structured, involves discipline, it's necessary for preparing yourself for life* (Questionnaire respondent #13).
- *Learning is more subliminal, education is formal … more structured means of learning* (Questionnaire respondent #27).

The implications of these findings are unpacked in Chapter 5.

4.3.3 Describing entertainment

In analysing the responses to the final open-ended question asked in the questionnaires (*Could you please describe in your own words what you think entertainment is?*) it was noted that entertainment was described in different ways to learning and education. Respondents clearly articulated that entertainment resulted in enjoyable and pleasurable outcomes, not necessarily towards some defined end-result. Entertainment was expressed as a relaxing, fun and pleasurable escape from the everyday, and was primarily undertaken in leisure time:

- *A way to escape and relax* (Questionnaire respondent #26).
- *Being able to occupy, in a pleasurable way, your free time* (Questionnaire respondent #71).

The results for the coded responses are shown in Table 4.9, with the analysis resulting in 188 responses under 17 different categories.

Table 4.9. Describing entertainment

Response Code	Sample Response	Percent of responses (*N=188)
Enjoyable/pleasurable	Pleasurable diversion of time	21
Fun/good time	Having a good time	18
Includes learning and education	... can have side benefits of education and learning	11
Stimulation	Stimulating and captures interest	10
Relaxing	A way to escape and relax	8
Escapism	Escapism, fun, distraction and reward	6
Sensory experience/use senses	Relaxation of the senses	5
Leisure activity	Do in leisure time	3
Use up free spare time	Fill in spare time	3
Specific activity named - movies, sport	… movies, videos, games	3
Not education or learning	… not necessarily informative	3
Something new	Something that can occupy me and show me something new	3
Specific activity named - museums	Travelling to Sydney to go to the Museum	2
Active	Activities for pleasure	2
Social activity/with others	Social thing, having a good time	1
Information/knowledge	… a means of imparting information and knowledge using different media	1
TOTAL PERCENTAGE		**100**

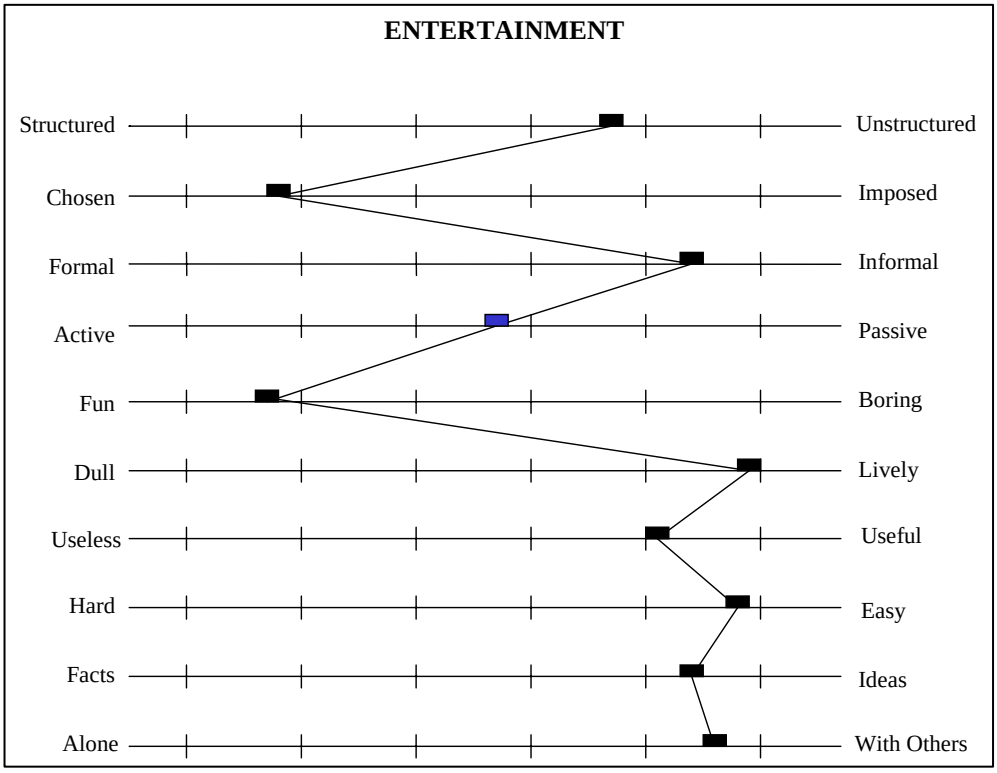
* As noted in Chapter 1, Table 1.1, n is used to represent the total number of *respondents* and N refers to the total number of *responses* to the specific question.

It was found that entertainment was described in ways that were more abstract than concrete. For example the words “enjoyable/pleasurable” and “fun/good time” were the most mentioned by questionnaire respondents (21% and 18% respectively). Entertainment was expressed in terms of how it made a person feel compared with learning and education. The sensory and sensual nature of entertainment was identified in 10% of responses: *stimulating your senses* (Questionnaire respondent #62). The relaxation and escapism aspects of entertainment were also acknowledged by 8% and 6% of respondents respectively.

Also, 8% stated that entertainment could also include learning. One person interviewed in the pilot study who noted this connection stated: *Well I think of entertainment as anything. It could be video, it could be a sporting event. You could learn from a sporting perspective, you know, learn certain situations from captains of teams for example. You see people come around and think about things and how they got out of that situation. So you learn from that and you may use those situations*. (Interview Transcript 2.2, 11/06/2000).

Results of scores across the 100 questionnaires for the semantic differential scale for entertainment reveal a much broader spread of scores when compared with learning and education. Constructs associated with entertainment (shown in black on Figure 4.5) were unstructured, chosen, informal, fun, lively, useful, easy, ideas and with others.

Figure 4.5. Semantic differential scale results: entertainment



In Chapter 5 the semantic scale results for learning, education and entertainment are overlaid, with the implications of the similarities and differences discussed.

4.4 Sub-question 3: Resources and places accessed for learning

The final sub-question in Stage One investigated the role of learning in a person's life, including where people learned, what resources and tools they accessed in learning and where museums were situated.

4.4.1 Resources accessed when learning: in-depth interviews

The eight in-depth interviewees were asked to describe how they would go about learning something new. Across all eight responses the following list of resources accessed and places where learning happened were identified:

- libraries
- schools
- museums and galleries
- universities, formal education courses
- internet/websites
- adult education courses
- television, movies
- other people—friends, family, work colleagues, teachers, community members
- objects, such as those found in museums
- "tools", for example, books, computers, pens, paper and other equipment.

Interestingly libraries, school and other people were mentioned by every participant.

One general finding was that in-depth participants felt strongly that learning **happened everywhere**, in everything you did. For example, Scott said *I think learning is what you do everyday, from everyone you see, from everything you see.* (Interview Transcript 3.4, 24/02/01). Dennis stated that *Probably subconsciously it happens everywhere.* (Interview Transcript 3.8, 13/03/01).

Six participants reported that the **internet** was the primary way they accessed information when learning about something new. They spoke about the internet as being fast, usually accurate and immediate, something that they controlled, and a good starting point. For example, Brenda said that *… you can get so much information from the internet … It's been a very valuable first port of call… I think it's a very enjoyable way to do it … I think you get immediate reward.* (Interview Transcript 3.1, 22/11/00). When learning something new, Scott reported that he undertook research by first using the internet because of the ease of access: *…* [I] *see if there's a related website or any information on it because it's easy and accessible.* (Interview Transcript 3.4, 24/02/01). Even when Scott became involved in the sport of kayaking he looked for information on the internet, particularly places to undertake these types of activities and where to purchase equipment.

Another important way that in-depth interviewees felt learning happened was through their **interactions with others**: *People to me in learning is very important as well … you learn from everyone, everyday* (Interview Transcript 3.5, 5/03/01). They mentioned that learning about yourself, about other people and about the subject matter happened with and through others. A range of "others" were noted including friends, family, work colleagues and community members. For example, Louise (who is of Torres Strait Islander descent) talked about learning as a way of connecting with her community through her interactions with Elders.

Participants recognised that while learning was about a "place" such as a school, when discussing their general museum experiences they revealed that learning also involved personal interactions with staff and other visitors. Two also discussed the role of **objects** in learning as part of a museum visit, through a personal interest or as a social activity. Dennis said that learning happens when

he talks to people and handles objects … [Learning happens when I] *meet other collectors … chat about pieces, handle pieces.* (Interview Transcript 3.8, 13/03/01).

4.4.2 Resources accessed when learning: questionnaire and telephone respondents

Questionnaire and telephone respondents were asked to rate a list of places/resources used when learning something new on a scale of 1 to 5. As detailed in Chapter 3, Section 3.3.2, the list was developed from the literature in conjunction with findings that had emerged from the in-depth interviews. A score of 1 indicated that the statement was not important, 2 was slightly important, 3 moderately important, 4 important and 5 very important.

Table 4.10 shows results for the questionnaire sample in order from highest to lowest mean score.

Table 4.10. Resources used when learning: questionnaire respondents

	Percentage					**Mean**	**Standard Deviation**
	1 (not important)	**2**	**3**	**4**	**5 (very important)**		
Books/library	1	2	7	35	54	4.40	0.79
Museums, galleries, other cultural institutions	0	4	19	38	37	4.10	0.86
Universities, formal education courses	2	7	15	36	37	4.02	1.01
Work colleagues/peers	1	4	27	44	23	3.85	0.86
Other people - family friends	2	12	30	37	19	3.59	1.00
Internet/websites	7	14	23	30	24	3.51	1.21
Adult education courses	6	11	28	26	21	3.49	1.16
Television programs	6	26	26	28	13	3.16	1.14
Computer programs, CDROMs	16	23	22	29	6	2.85	1.21

To give an indication of the relative importance of the different categories when compared with each other an overall high rating was obtained by combining scores of 4 and 5. *Books/library* was the most common resource cited by almost 90% of those sampled. One unexpected finding was that just over half the sample (54%) rated the *Internet/websites* as important/very important. This was

surprisingly lower than expected given that the majority of the in-depth sample reported that they used the internet as the first way they accessed information when learning about something new. However, the standard deviation of 1.21 indicates that there was some variation in these results, which is further discussed in Chapter 5.

The chi-square test found significant differences for variables of age and visitor group (Table 4.11), with these results further discussed in Chapter 5.

Table 4.11. Significant differences: questionnaire respondents

Resource	Variable	p-value^
Internet/websites	Aged 25-34	p<0.01
Adult education courses	Aged 35-49 years	p<0.01
Computer programs/CDROMs	Family visitors	p<0.01

^ Significance was determined if p<0.05, and considered highly significant when p<0.01.

Table 4.12 details responses from the telephone survey for the same list of nine resources used in learning.

Table 4.12. Resources used when learning: telephone survey

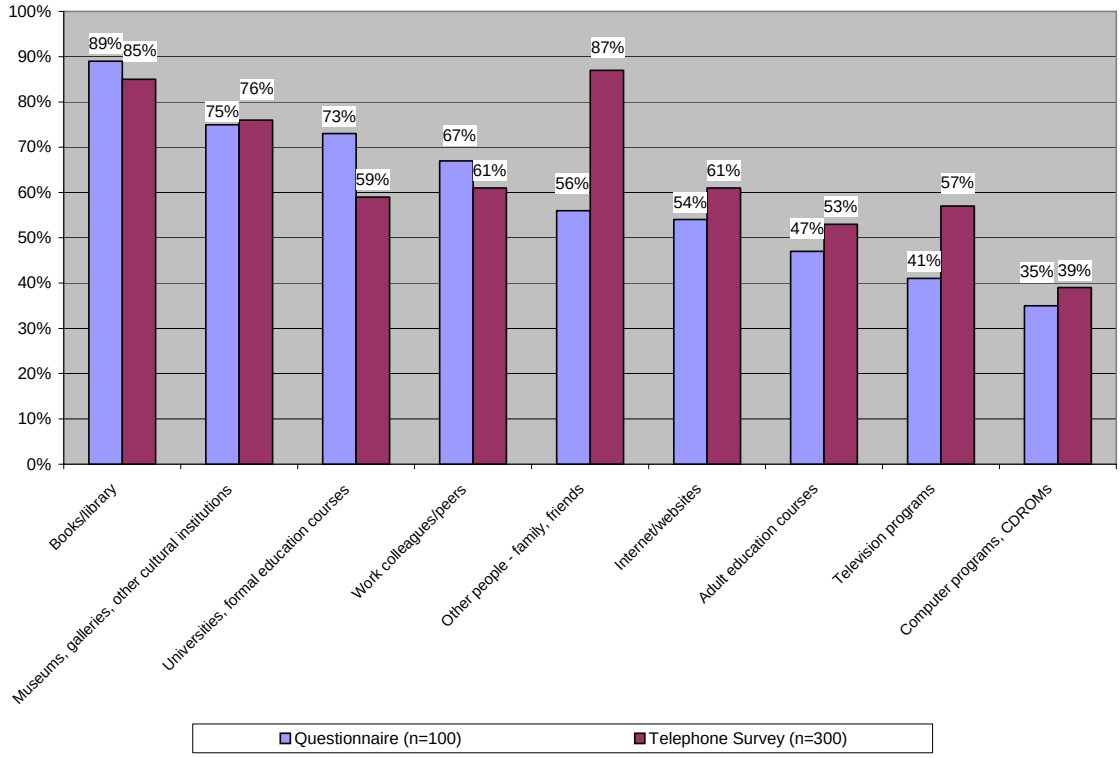
	Percentage				
	1 (not important)	2	3	4	5 (very important)
Books/library	3	10	3	52	33
Museums, galleries, other cultural institutions	2	15	8	58	18
Universities, formal education courses	12	24	4	41	18
Work colleagues/peers	8	17	9	53	8
Other people - family friends	1	9	4	65	22
Internet/websites	22	14	3	40	21
Adult education courses	9	30	7	41	12
Television programs	6	26	11	51	6
Computer programs, CDROMs	24	29	9	36	3

As with the questionnaire sample, scores of 4 and 5 were combined, highlighting several resources that were considered important in learning something new for telephone survey respondents. Overall, *Other people – family, friends* and *Books/library* were the most highly rated sources in the telephone survey, with 87% and 85% respectively rating these as important/very important. Interestingly, even though this sample was comprised of both visitors and non-

visitors, *Museums, galleries, other cultural institutions* were also considered important/very important by 76% of those sampled.

Figure 4.6 summarises the comparison of high ratings from the questionnaire and telephone surveys to illustrate the differences between these samples. The left to right order follows the highest to lowest responses for the questionnaire sample.

Figure 4.6. Differences between samples



Taken together, these provide clues about potential differences between Australian Museum visitors and the Sydney population (which included visitors and non-visitors). Three areas were identified as significant. A 31% difference was found for *Other people – family, friends*, with the telephone sample rating this significantly higher at 87%. There was also a 16% difference in rating of *Television programs*, with more than half of the telephone survey rating this as important/very important in learning. A 14% difference emerged in the rating of *Universities, formal education courses* which isn't surprising given that the majority of visitors to the Australian Museum have university or post-graduate

qualifications (Australian Museum Audience Research Centre, 2004a). These results are further considered in Chapter 5.

4.5 Reflecting on learning: summary findings

The initial analysis of findings presented in this chapter revealed a number of key outcomes which are summarised below, and the implications discussed in Chapter 5.

First, in examining the qualitative data participants described learning as:

- initially hard to describe
- an everyday process, undertaken by everyone
- both physical and cognitive
- a way of acquiring and gathering something—information, skills, knowledge
- an active process of understanding, applying, expanding, discovering, assimilating, experiencing and exploring
- a shared activity as well as a solitary one
- associated with change, both surface and deep.

The quantitative data from the questionnaires and telephone survey showed general support for:

- learning new facts
- learning as meaning making
- the role of prior knowledge and personal interest in learning
- physical/hands-on learning
- seeing something in a different way
- the importance of learning with and from others
- choice in learning.

Second, in investigating the resources accessed when learning, those most commonly cited were books/libraries; museums, galleries and other cultural institutions; internet/websites and universities. A large number of other resources

named included schools, formal education courses, television, movies, videos; as well as specific mention of museum objects and text panels.

Finally, by analysing data across all samples, differences emerged between how the words learning, education and entertainment were viewed. More active words were used when talking about learning, with participants describing education in more concrete ways. In contrast to learning and education, descriptions of entertainment included words and phrases that were based on feelings, emotions and the senses. However, it was found that the three concepts were also related in a number of ways, with these ideas presented in Chapter 5.

Taken together, the findings presented in this chapter demonstrate the rich variety of the ways participants in this study thought about a range of concepts. Chapter 5 unpacks these further, framing the discussion around a model of learning which has been developed based on both the data presented in this chapter and a fresh look at the literature.

Chapter 5. Stage One Analysis and Discussion

Chapter 4 presented the major findings from Stage One, with a number of key findings outlined. First, the wide variety of descriptions, thoughts and issues identified by a range of different people across all sample groups showed that learning was essentially an individual process. It was also possible to identify a range of common themes about learning as a concept across all data sets and connect these to the literature. These have been combined under a framework called the *6P model of museum learning*. Second, it was found that while the concepts of learning, education and entertainment were described differently, they were also related in positive ways.

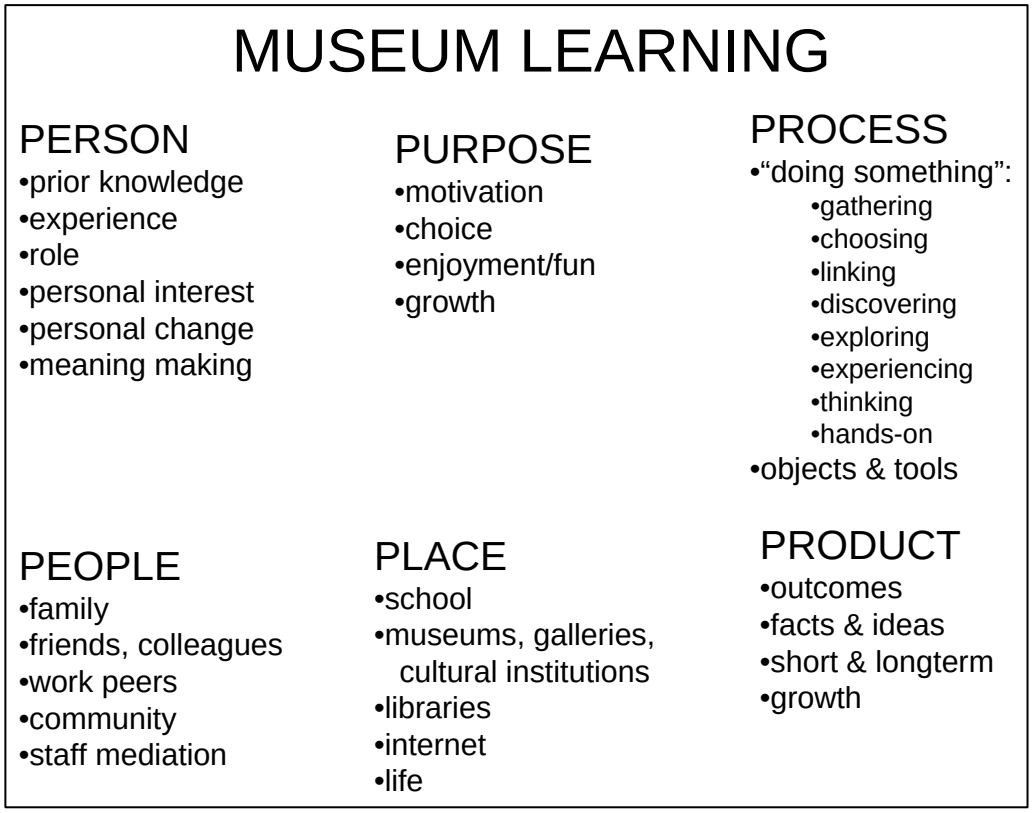
This chapter analyses and discusses the findings in relation to data presented in Chapter 4, coupled with another look at specific areas of the literature from Chapter 2. The data reported in this chapter comes from three different groups of adults: eight ***in-depth interviews*** with visitors to the Australian Museum; 100 ***questionnaires*** with Australian Museum visitors; and a ***telephone survey*** of 300 Sydney adults to compare Museum visitors' responses to the general population. When discussing findings across all three samples the term ***participants*** has been used.

5.1 Describing learning: a model of museum learning

As detailed in Chapter 2, Section 2.6, the essential elements of learning that emerged across the learning literature were that while learning is unique to an individual, it is also a shared process. Learning is dependent on context, and happens both in the short and long-term. It is an active process of reflection leading to self-awareness and change, chosen by individuals based on their interests, preferences, prior knowledge and experiences. Learning is facilitated by a wide range of tools, with the social dimensions also being critical.

Reflecting on data from Stage One with a re-examination of the literature, I developed a *6P model of museum learning* (Figure 5.1), which has been used as a way to organise the discussion in this chapter. Many elements of the model are interrelated, with these connections explored in more detail in Stage Two. An expanded 6P model, which also incorporates outcomes from Stage Two, is presented in Chapter 7.

Figure 5.1. 6P model of museum learning: Stage One



5.1.1 Person

The category of *person* relates to the individual learner, including prior knowledge, experience and lived history; cultural background and gender; as well as roles played at different times in a person's everyday life. It also covers individual changes that result from learning through meaning making and seeing something in different ways. The framework of social constructivism, with its emphasis on the learner (Chapter 2, Section 2.2.4), has been used as a basis for the person category. As noted by Woolfolk (1998) constructivism '…

emphasises the active role of the *learner* in building understanding and making sense of information' (p.346, emphasis added).

The aspects of constructivism generally supported by participants in the present study were prior knowledge; learning that builds on what people already know; personal interest; personal change and seeing something in a different way; as well as meaning making.

Fienberg and Leinhardt (2002) found that visitors with high levels of **prior knowledge** about a subject not only engaged in deeper conversations about the content of an exhibition, but did so at more sophisticated levels. Prior knowledge forms the basis of learning and growth through progressive development from what is already learned into a fuller, richer and more organised form of knowledge (Dewey, 1938; Paris, 1997a; Paris & Mercer, 2002).

The data revealed that participants believed building on prior knowledge was important for later learning, as illustrated by agreement with the statement *Learning that builds on what I already know* by more than eight in ten of the questionnaire respondents. When describing learning the role that prior knowledge plays was also mentioned:

- *Expanding your knowledge, a new aspect on life* (Questionnaire respondent #11).
- *An expansion of what you already know* (Questionnaire respondent #47).
- *New things that add to your body of knowledge* (Questionnaire respondent #78).

The findings also emphasised the importance of **personal interest** in learning. When discussing his learning Stephen reported that once people became interested in a topic they were more likely to notice related information. He used the example of gardening, as he had recently purchased a new house: *… we bought a place last year, so we do things in and around the garden or in the house, but mainly in the garden. So you get the books, newspapers, it's funny actually that once you're interested in a subject it's just there. I mean all of a sudden you see it in a newspaper, you see it in magazines. It's just when you buy a car and you see so many of those cars, that same type driving around, where before you never noticed it, where all of a sudden you are looking for it and so you find it.* (Interview Transcript 3.5,

5/03/01). Similarly, the statement *Learning when the information provided is of immediate interest to me* was rated as important/very important in learning something new by 83% of questionnaire respondents and 91% of the telephone survey respondents.

Museums have been described as environments where visitors **make meaning** (Falk & Dierking, 2000; Hein, 1999; Jeffery-Clay, 1998; Silverman, 1995). Strong support for learning as meaning making was expressed by participants in this study. The statement *Constructing meaning based on my own experiences* was rated as important/very important in learning something new by 82% of questionnaire respondents and 90% of the telephone survey. In the open-ended responses participants talked about learning as a process of gaining some knowledge, thinking about it and then making new meanings. For example, Dennis explained that learning was a process where you *gather information, you turn it around in your head, you apply that information.* (Interview Transcript 3.8, 13/03/01). Several questionnaire respondents described learning as making sense of something in order to draw conclusions and reach understanding:

- *Finding your place in the world. Engaging with the world in a way to discover more about it and make sense of things. That's the big picture* (Questionnaire respondent #40).
- *Gaining ideas and knowledge which then enables you to gain understanding* (Questionnaire respondent #68).
- *Being able to put pieces of information together* [to] *draw conclusions* (Questionnaire respondent #71).

Meaning making enables an individual to view the world in news ways (Hein, 1999), demonstrated in this study by support for the statement *Seeing something in a different way*. This was rated as important/very important in learning something new by 82% of questionnaire respondents and 86% of the telephone survey. From the questionnaire data this statement was also significantly more likely to be rated as important by adults who visited with their family and by those aged 35-49.

As concluded from the literature, learning is about change (Dewey, 1938; Hein & Alexander, 1998; Malone, 1990). Participants talked extensively about learning as a process of **personal change and growth**. Stephen discussed how his views about Aboriginal Australians changed after seeing the *Indigenous Australians* exhibition at the Australian Museum. Although he felt he knew quite a bit about the topic he acknowledged that: *… there's always a lot of information you don't know about, like the Lost Generation and the difficulties of the Aboriginals in regards to losing land, growing up in their communities and culture, differences in culture and ways of working.* (Interview Transcript 3.5, 5/03/01).

How deeply change occurs and is articulated may depend on the questions asked and the "reflective space" available to respondents, illustrated by responses to the statement *Changing how I see myself*. Agreement with this statement was lower compared with other ratings. Fifty percent of the questionnaire respondents and 64% of the telephone survey rated it as important/very important. Interestingly the statement *Seeing something in a different way*, which could be seen as less "personal", was rated as important/very important by 82% of questionnaire respondents and 86% of the telephone survey. Could this mean that people saw "change" as something external to themselves and not an internal process?

However, in-depth interviewees acknowledged the deeper personal changes that were a result of learning. Louise felt that learning needed to be a challenge, beyond facts: *To me it's about informing and also challenging you as well … That's how I think learning comes about, it's about giving you something to begin with and then questioning you about that and challenging you.* (Interview Transcript 3.7, 13/03/01). Another example was Rosemary who, at the end of the interview, added the words *new insights*, *innovation* and *self-analysis* to her learning diagram because she felt that she had thought about these issues during the discussion. Does this mean that when thinking and talking about learning people need "prompts" to think more deeply about how learning personally influences them and their identity? These issues are also closely related to product (discussed in Section 5.1.6).

5.1.2 Purpose

As reported in Chapter 1, Section 1.1, a wide range of *purposes*, or motivations, have been identified for visiting museums. In the 6P model two specific aspects related to purpose—enjoyment/fun and choice—were discussed in the greatest detail by participants and are detailed below.

Sachatello-Sawyer et al. (2002) found that 80% of older learners surveyed who had attended an adult education program did so for '… the joy of learning' (p.8). Participants in the present study also associated learning with **enjoyment and fun**:

- *Seeing something, understanding, can be fun* (Questionnaire respondent #2).
- *Discovery, education, fun* (Questionnaire respondent #75).

Stephen remarked that *It's more fun to learn more and more about all the little things.* (Interview Transcript 3.5, 5/03/01). Participants recognised that enjoyment can also contribute to deeper learning. For example, Doug talked about fun and learning when he visited the *Skeletons* exhibition at the Australian Museum: *You just sit there and all of a sudden in the back* [of the exhibit] *you see a mouse, a skeleton of a mouse and that's really fun. But it's also interesting to see the differences in the bone structures.* (Interview Transcript 3.6, 5/03/01).

When asked whether she thought learning was enjoyable Rosemary stated: I think it is. I think you get a different view of it as you get older, whereas it was imposed on you at school, it's not imposed on you as you become an adult. It's basically your choice. It can be fun, I'm putting fun [on the learning diagram] because it can be. A lot of people don't look at it that way. (Interview Transcript 3.2, 13/12/00). For Rosemary, the idea of fun and enjoyment in learning was closely linked with choice, which was also noted by Griffin (2004):

> Children declared that learning and enjoyment went together when it was fun, they had choice and they were with friends or family (p.S64).

As detailed in Chapter 2, Section 2.2.4, **choice** is an important factor in learning. Dewey (1938) argued that learners must be actively involved in constructing the purpose of their learning in order to have better learning experiences. In

summarising learning in museums, Paris (1997a) acknowledged the important role that choice played because

> … people learn best when they actively manipulate the information to be learned and when that information builds on previous knowledge (p.22).

Earlier research with family visitors found that when pursuing their personal agendas families valued being able to choose what they attended to according to their needs and interests (Kelly et al., 2004). Leinhardt and Knutson (2004) suggested that choice was the major factor that distinguished informal from formal learning environments.

Choice was a key issue that arose in the present study, particularly when comparing learning with education. The differences seemed to lie in the word *teach* which was associated with being "talked to" or "told to do something" in an educational sense, and the word *learn* that was connected with personal choice. Choice was seen as an important way of facilitating learning by in-depth interviewees, as Stephen noted: *… learning never, never ends … it's a choice … a very natural process …* [whereas] *education is more given to you.* (Interview Transcript 3.5, 5/03/01). Brenda mentioned that *Obviously* [learning is] *something that's not boring, something that's not passive, so it's more of an active thing … Something where you choose to be involved, that you're interested in doing.* (Interview Transcript 3.1, 22/11/00).

Results from the questionnaire sample and telephone survey also supported these views. For example, 66% of respondents in each sample rated the statement *Being told what to learn* as ***not*** important or slightly important when learning something new. As well, the statement *Teacher-led learning at school/other formal place* was supported by 44% of questionnaire respondents (Museum visitors) and 63% of the telephone survey (general population), which was significantly lower than for most other statements.

5.1.3 Process

The category of *process* includes the myriad ways that learning actually happens. It has been acknowledged in the literature that individuals access a range of different styles when learning (Cassels, 1992a; Dierking, 1989; Gardner, 1993; Schmeck, 1988).

Words and phrases listed in the 6P model (Figure 5.1) were actually used by participants, demonstrating the diversity of ways that learning as a process was described, shown in the following examples from questionnaire respondents:

- *Opening the mind to new experience* (Questionnaire respondent #4).
- *Expanding your knowledge about an area by a variety of means* (Questionnaire respondent #11).
- *Acquisition of new information* (Questionnaire respondent #14).
- *… exploration of ideas* (Questionnaire respondent #20).
- *An understanding of how things work* (Questionnaire respondent #42).
- *Absorbing new information* (Questionnaire respondent #50).
- *A discovery path* (Questionnaire respondent #52).
- *Discovering new ways of thinking and knowledge* (Questionnaire respondent #99).

Dennis talked about learning as the application of facts and information in acquiring knowledge: *Knowledge is applied, information is more facts and I guess knowledge is applied information.* (Interview Transcript 3.8, 13/03/01). Dennis described learning as an everyday practice, an active process of change from obtaining information to gaining knowledge, where *… you gather information, you turn it around in your head, you apply that information.* (Interview Transcript 3.8, 13/03/01). Scott also talked about learning as *… building up your knowledge.* (Interview Transcript 3.4, 24/02/01).

Dewey (1938) recognised that learning is active and involves the senses and all parts of the body, giving individuals the freedom to observe and to judge, both intellectually and physically. Participants in the present study recognised the

importance of physical, active experiences, closely associating learning with hands-on activities. For example, Scott talked about learning as a physical as well as a mental process: *… when you have your mind and body connected it's a learning process as well.* (Interview Transcript 3.4, 24/02/01).

Across all samples learning was described as an everyday process undertaken by all humans that is both cognitive and physical. It was seen as a way of acquiring and gathering something, for example, information, skills or knowledge. Through processes such as understanding, applying, expanding, discovering, assimilating, experiencing and exploring learning leads to change, or an end-product, described in Section 5.1.6.

5.1.4 People

The category of *people* covers the social dimensions of learning. Participants identified a broad and diverse range of people they learned with, including family, friends, colleagues/work peers, and professionals such as museum staff, teachers and university lecturers. Learning based within a community is also included under people.

Falk and Dierking remarked that '… much of the social behaviour observed within and among groups is learning oriented' (2000, p.91). Paris and Mercer (2002) also found that the social aspects of a visit were important, particularly in the ways visitors responded to objects in emotional and humorous ways. The present study supports the views expressed in the literature about the importance of social learning and participation in learning.

In-depth interviewees felt that the social dimensions of a visit were important ways that learning happened, through interactions with others in the group coupled with the roles played in a museum visit. The recognition that family and the general community were valuable learning units was a particularly strong result. When discussing their museum experiences participants acknowledged that they learned with and through others—learning about themselves and other people, as well as the subject matter. In-depth interviewees talked about

interacting with *both* the content of the exhibition and other members of their visiting group. For example, Scott discussed the nature of the learning between himself and his friends as a social event: *… sometimes we'd bounce off something of interest to ourselves, then we'd look at it a bit more, wander off. Then we'd come together a few times to have a look at things.* (Interview Transcript 3.4, 24/02/01). Scott's description also illustrates McManus's ideas about group learning (1987; 1988; 1989; 1991a), particularly the "hunter-gatherer" model of visiting (1994) where members actively "foraged" in the museum to find areas that interested them, coming together at various points to share their experiences.

Falk and Dierking's work on adult learning and museum visiting (2000) concluded that for

> … many adults, the social reasons for their visit are so dominant that it is these aspects that are the take-away messages from a museum experience (p.101).

To demonstrate this point, Doug talked about the social experience his group had in just being together: We were all of us, the three of us, were all fascinated by the young crocodiles upstairs, the live ones. We just sat down and watched them for ten minutes. Because initially it looks like it's all fake because they don't move. Then gradually we saw one move its' legs under, and this other was sort of sunning itself, and that was interesting. (Interview Transcript 3.6, 5/03/01). Mavis described a visit to an art gallery with her granddaughter as a social outing: We looked at everything, every mask quite thoroughly because there was only one other man there. We took our time and she read the little pamphlet that we were given. She seemed very interested. (Interview Transcript 3.3, 8/01/01).

Morrissey (2002) reported that adults exhibited learning behaviours that were group-based, resulting in people learning '… *about* each other while they learn *through* each other' (p.285, emphasis in original). This was illustrated in the present study by Scott when describing his visit to the Australian Museum's *Body Art* exhibition with a group of friends who shared the same interest in the topic and an understanding of it as a cultural practice. The learning that Scott talked about involved both personal and social aspects, with a resulting change in attitudes and seeing things in a different way: *You have this stereotype about people who've got tattoos and it really gives you a different perspective on it … I probably just*

thought it was an abuse to your body, sort of, beforehand ... And since then, like, when people have piercings I just look at it, not stare at it, and think about where they got it, what sort of thing they had done. (Interview Transcript 3.4, 24/02/01). Through social engagement, both as an individual and within the group, Scott felt that he had learned more about himself and others*: I also learned a bit more about my friends. I didn't know they had an interest in* [tattoos] *either, and you sort of learn more of what they're about as well.* (Interview Transcript 3.4, 24/02/01).

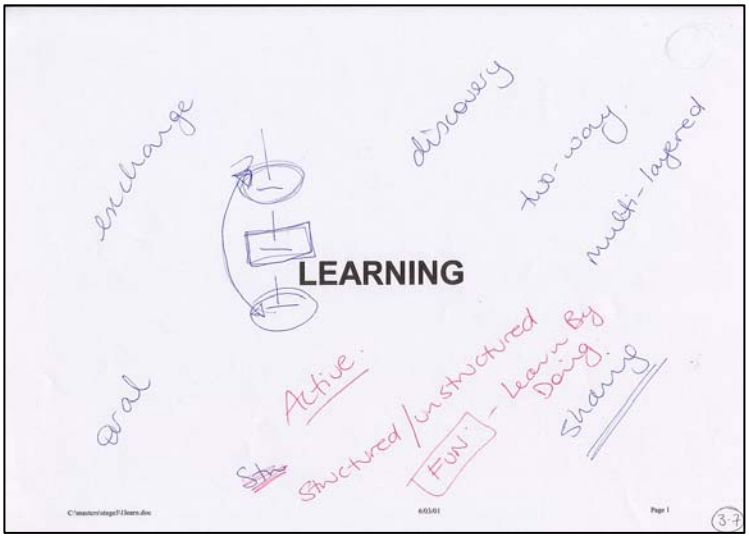
As outlined in Chapter 2, Section 2.2.3, research has established the value of the **family** in learning across formal and informal settings, particularly museums (Borun, 2002; Buckingham & Scanlon, 2003; Crane et al., 1994; Ellenbogen et al., 2004; Falk & Dierking, 2002; Hicks, 2005; Kelly et al., 2004; Kropf, 1992; Moussouri, 1997). It has also been found that families accessed a wide range of information sources when learning together (Ellenbogen, 2002) and that early family visits established later visiting habits (Falk & Dierking, 1997; McManus, 1994).

The data also demonstrated that the family group was important in both general learning and museum visiting. In-depth interviewees discussed the role of the family in some detail. For example, Rosemary believed that learning was very strongly influenced by family. She claimed that this impact started when a person was very young, with learning being a key "life skill" that assisted a child develop along the right "life path": *With the correct guidance from the family you hope that they will have a better life with all these learning skills that they have gained.* (Interview Transcript 3.2, 13/12/00). Stephen talked about the influence of family in forming attitudes and views of the world: *Your parents, your family, those are the ones who basically give you a view of life …* [That's] *why* [it is] *so important with family because they teach you when you're at home, and you look at TV and Dad says "Look at those people, they're rich and they don't have anything to complain about and we're poor", obviously then those kids would have a perception of the world because Dada said that. It's why family is so important.* (Interview Transcript 3.5, 5/03/01).

The questionnaire data showed that, when compared with other types of visitors, those visiting with families more strongly supported the statement *Learning in a physical/"hands-on" way* when learning something new. This suggests that families highly value hands-on learning, again consistent with the literature (Anderson et al., 2002; Borun & Dritsas, 1997; Ellenbogen, 2002; Ellenbogen et al., 2004; Kelly et al., 2004; Moussouri, 1997; Paris & Hapgood, 2002; Puchner et al., 2001).

Another interesting perspective on social learning that emerged from the study was the idea of learning within a **community**, including the role of individuals within their community and their cultural background. This was demonstrated by Louise, who was of Torres Strait Islander descent. Louise viewed learning very much as an exchange with community members through talking, listening and sharing. Louise's learning diagram (Figure 5.2) included the words *oral*; *exchange*; *sharing* and *two-way* as a way to explain the collective approach to learning that, for her, was strongly culturally-based. Her first thoughts in her interview also reflected the idea of exchange: *My first word is "sharing" when I think of this topic of learning.* (Interview Transcript 3.7, 13/03/01).

Figure 5.2. Learning diagram: Louise



Louise described a recent learning situation when she and a group of community Elders were looking at objects from a collection held in an overseas university: [This] *was a very good opportunity to learn first hand and directly from older people about these objects and their stories … we'd just sit down and talk about things and one story may trigger off another story and another string of events or something that was associated with the object or family. Because people were looking at these objects and at the same time through written documentation, so it was really good to say, "OK this is what this person … had discovered, his own drawings and sketches".* [Then] *someone would be sitting down and reading through this and would say "Oh look at this", and reading about* [what the Anthropologist concluded about] *this particular piece when actually it means something else. Another delegate would then say "Yeah you're right and it was also used for this and this …".* (Interview Transcript 3.7, 13/03/01).

Louise's story illustrated ideas about what have been called "interpretive communities" (Hooper-Greenhill, 1999, 2000), or "learning communities" (Brown, 1995; Falk & Dierking, 2000; Matusov & Rogoff, 1995) characterised by the '… mutuality in joint activity and guidance rather than on control by one side or another' (Matusov & Rogoff, 1995, p.98). How strongly did Louise's cultural background and the cultural norms of learning together employed by the Torres Strait Island community underpin her views of learning? Louise also spoke about learning as acquiring skills and customs that were then shared through a process of social exchange and as a cultural practice. She stated that learning happened: *… through sharing, through talking, sitting down, passing on information that way … I don't think you can ever stop learning about, from my point of view, from my people.* (Interview Transcript 3.7, 13/03/01).

It has been acknowledged that the role of **accompanying adults** are a critical influence on museum learning (Anderson, 2003; Anderson et al., 2002; J. Griffin, 1998; Landman et al., 2005; Puchner et al., 2001). A study of chaperones visiting a variety of museums with school students (Sedzielarz, 2003) found that they didn't see learning as their primary role, instead they recognised that they had multiple roles including '… guide, group facilitator, timekeeper, learning leader, teacher, role model, security guard, learner, and strategizer' (p.22). In the present study an interesting finding emerged relating to role in the visit. Two of those interviewed were grandmothers who talked about visiting exhibitions with their

grandchildren. When asked about their own learning, they didn't see that they were there to learn personally—they felt they were there to support the child's learning. Does this mean that the way they think of themselves as learners changes depending on the perceived role an individual takes on when visiting with a group? Do visitors essentially accept what is offered to them, rather than seek experiences that match their views about themselves as a learner? These issues are explored further in Stage Two (Chapter 6).

5.1.5 Place

In the 6P model the category of *place* incorporates where learning happens. It has been reported in the literature that people accessed museums as one of a wide range of information resources used when learning (Anderson, 1997; Crane et al., 1994; Ellenbogen, 2002; Falk & Dierking, 2000, 2002; Kelly, 2006; Rennie & Johnston, 2004; Sachatello-Sawyer & Fellenz, 2000).

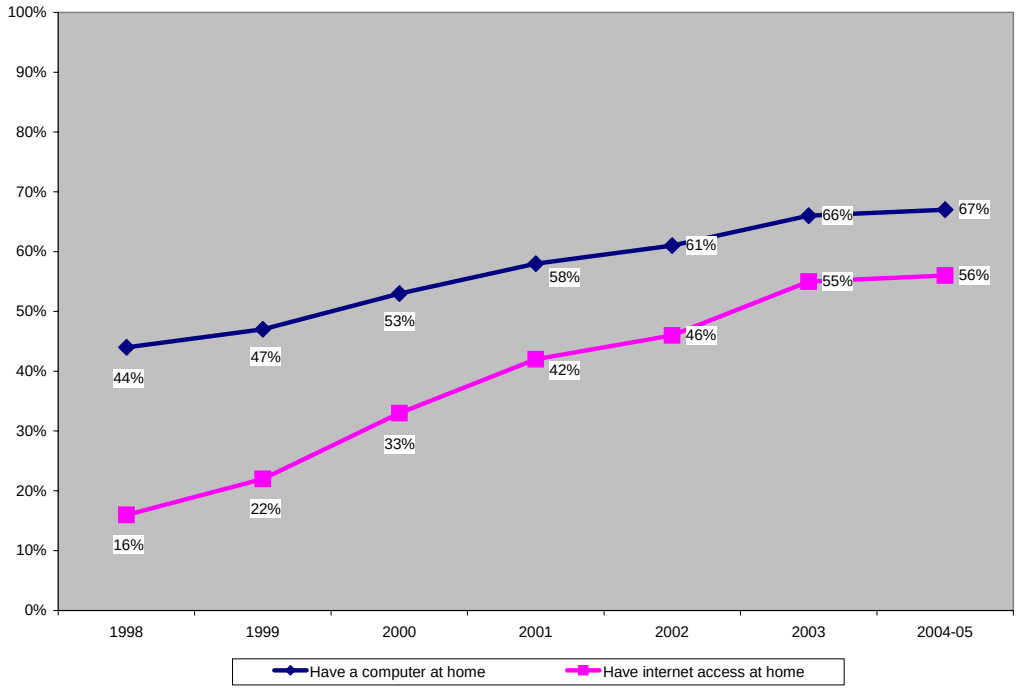
While participants in the present study stated that learning occurred across all aspects of their lives there were specific places nominated by individuals when thinking about where they learned. High levels of support were expressed for libraries; museums, galleries and other cultural institutions; and universities. Internet/websites which emerged as important in learning, have been included in the place category, as people spoke about the internet as a "virtual place". Other places named were schools; formal education courses; adult education courses; and the home (through television, movies and computer programs). This section focuses on three places that elicited more detailed responses from participants—the internet, museums/cultural institutions and schools.

The **internet** was the first place mentioned by the majority of in-depth interviewees when asked how they accessed information when learning something new. They recognised that the internet was a convenient and easy place to retrieve information when compared with other places. In contrast, less questionnaire respondents thought that internet/websites were important/very important when learning something new. These results could be explained by the very strong opinions about the range, depth, reliability and credibility of

information on the internet that were expressed in the interviews. For example, Stephen stated: *… you type in a word and you get ten to fifty thousand options to look for so it's a good tool, but …* [rolls eyes] (Interview Transcript 3.5, 5/03/01).

The relationship between museum learning and the internet is one area that is just beginning to be explored by museums (Chadwick, 2003; Haley Goldman & Haley Goldman, 2005; Haley Goldman & Wadman, 2002; Witcomb, 2003). The internet is becoming a significant factor in influencing how and where people learn as it is available to a wide range of users. In Australia, for example, there has been a 40% increase over a six-year period in access to and use of the internet (Figure 5.3), with the most current available figures (released in 2006) showing over half of the population having access in 2004-05 and continually increasing.

Figure 5.3. Access to technology in Australia



(Adapted from Australian Bureau of Statistics, 2006)

As it has been recognised that **museums** are important places for learning, Falk and Dierking (2000) suggested that museums '… need to be understood and promoted as integral parts of a society-wide learning infrastructure' (p.225). Recent research found that visitors appreciated the role museums could play as authoritative, trusted and credible sources of information, and that they were accessed by a wide range of people (Cameron, 2003, 2006; Ellenbogen, 2002; Falk, Brooks & Amin, 2001; Kelly, 2006; Lake Snell Perry & Associates, 2001). It has long been understood that perceptions of museums are formed through visiting as children, especially their positive and negative school visit experiences (Falk & Dierking, 1997, 2000; J. Griffin, 1998; Griffin, 2004; Hein, 1998; Pitman, 1999).

Participants in the present study were generally positive about museums, recognising that often their earlier negative views of museums had changed as they got older, illustrated in the following discussion with Rosemary. First, she outlined her negative perceptions of museums formed when she was younger: *It's unfortunate, when you're at school the museum was always sort of pushed at you. …* [and] *I think it's a shame that people step away from it.* (Interview Transcript 3.2, 13/12/00). Now she felt that her views had changed, with museums as one of a number of places she believed benefited childrens' learning. Rosemary made the point that, as children have such rich learning experiences already, museums need to recognise and respond to these through providing different levels of engagement and learning opportunities.

Both the questionnaire and telephone survey respondents did think about and use museums when learning something new. Seventy-five percent of those interviewed at the Australian Museum chose *museums, galleries, other cultural institutions* as important in learning. However, a similar percentage (76%) of the telephone survey respondents (general public) also chose *museums, galleries, other cultural institutions* as important in learning. This was surprising, considering that they were not told that the survey was being conducted on behalf of a museum.

Didactic learning (Hein, 1998) has been described as a "teacher-student" approach to learning, usually associated with **school**, where a teacher imparted information which the student absorbed in a logical, rational and linear sequence. From the data little support was found for ideas surrounding didactic learning. The statement *Being told what to learn* was rated the lowest in importance by both the questionnaire sample and telephone survey. Sixty-six per cent in each sample rated this statement as ***not*** important/slightly important when learning something new. Results for the statement *Teacher-led learning at school/other formal place*, showed that 44% of questionnaire respondents rated it as important/very important when learning something new as against 63% of the telephone survey.

It was found that participants in this study often associated the word "education" with school. Data from the in-depth interviews showed that school was seen both in positive and negative ways, with some focussing on their beneficial school learning experiences and others on exams, pressure and rote learning which were remembered as being unpleasant. School was also recalled as a place where learning was "forced" on you rather than providing choice, as noted by Stephen when comparing his school and university experiences: *I think school is more* [a] *forced way in learning … in uni normally you have an open discussion with professors, whereas at school the teacher normally has an attitude of 'this is what you have to do'. It is a set way of learning, whereas at uni you discuss, so it's not forced.* (Interview Transcript 3.5, 5/03/01). One of the questionnaire respondents defined education as a process that *Channels the student through pathways according to policies of the day* (Questionnaire respondent #7). Questionnaire respondents also described education as a process of delivering learning, associated with teaching/teachers/school and something you are told to do/have to do. Does this mean that using the word education in a museum context might conjure up negative images as suggested by Prince (1990)?

However, it was recognised by in-depth interviewees that school experiences had changed enormously in recent times, with many more opportunities available for rich, deep and active learning. For example, Rosemary talked about her grandson's positive school experiences: *I believe these days children have just got so much at their beck and call compared to when I went to school, because they really encourage them.* [My grandson had] *just finished Kindergarten and it's just really blown me away his school report that it's five pages and they've assessed him on computer skills, on self-esteem, on their presentation …* (Interview Transcript 3.2, 13/12/00).

5.1.6 Product

Marton and Svensson (1979) suggested that learning resulted in a large range of outcomes for an individual. Griffin (2004) outlined conditions that promoted effective learning in museum settings, particularly in relation to school students' learning, with an essential one being conceptual change through making links between new and existing ideas. Sachatello-Sawyer et al. (2002) proposed a hierarchical description of museum learning outcomes which suggested that acquiring skills and knowledge was the most common and immediate outcome of adult learning in museums, with higher-level changes (such as life-changing experiences and transformed perspectives) more important but less common.

When discussing the *products* of learning several respondents articulated ideas that addressed learning as changing a point of view, attitudes or behaviour; gaining new ideas or different ways of seeing something:

- *A new way of looking at something – new facts, an interaction* (Questionnaire respondent #28).
- *A broadening and deepening of your understanding of all things* (Questionnaire respondent #31).
- *The application of knowledge to new circumstances* (Questionnaire respondent #55).
- *Gaining ideas and knowledge which then enables you to gain understanding* (Questionnaire respondent #68).

Useful outcomes from learning were identified across all samples, with ideas proposed such as increased information, knowledge, facts and self-awareness:

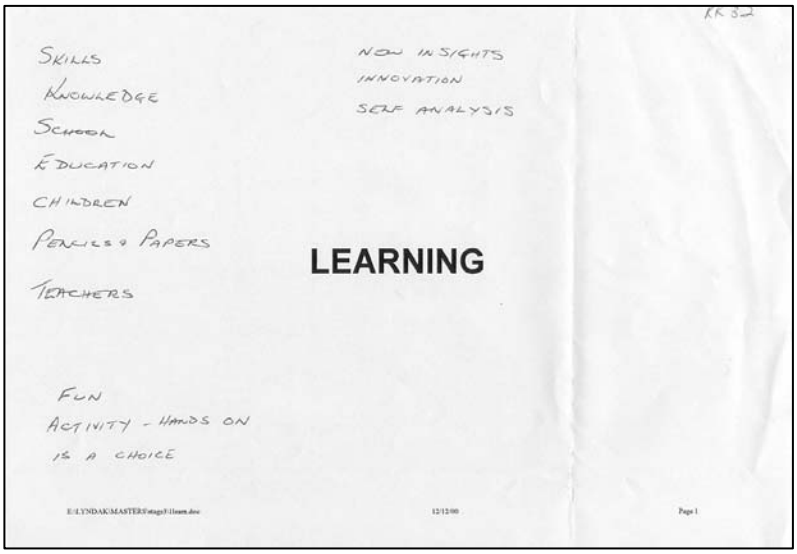
- *Acquiring new knowledge and applying that* (Questionnaire respondent #5).
- *Discovering everything that's new and rediscovering, see different things the second time round* (Questionnaire respondent #21).
- *Picking up from other peoples' or your own experiences, and applying that to whatever you do* (Questionnaire respondent #39).

Doug talked about his experiences in the *More Than Dinosaurs* exhibition at the Australian Museum when visiting with his teenage daughter and her friend, expressing surprise at his reactions and behaviour during the visit: *Well I stopped to read everything and it surprised me … when I was doing the dinosaurs I honestly thought it would be a kids' show, I kept going and reading every plaque. It got to the stage where the girls were about half a mile in front of me.* (Interview Transcript 3.6, 5/03/01).

The descriptions of learning from the interviews suggested that a learner gathers information, knowledge and skills in a variety of ways, manipulating them to reach new insights into yourself or personal change (as described in Section 5.1.1). This process was outlined by Rosemary who talked through this transition during her interview and illustrated it on her learning diagram (Figure 5.4 over the page).

First, she mentioned skills and knowledge as *just things on the surface* (Interview Transcript 3.2, 13/12/00), the first things that sprang to her mind when thinking about the word learning. As the interview progressed she acknowledged that new insights and self analysis were the result of deeper learning. She concluded the interview by reflecting that the whole process of learning was a personal change through developing new insights into herself. When Rosemary summarised her thoughts about the actual outcomes of learning a deeper meaning and increased self-awareness emerged for her: *So I do believe you gain new insights from learning and you do feel that you can be more innovative through your learning and then you self-analyse yourself as to whether you're capable of exploring or going further with what you're learning.* (Interview Transcript 3.2, 13/12/00).

Figure 5.4. Learning diagram: Rosemary



Another example of personal change came from Louise, who believed that through learning she discovered more about herself and about life in general: *For me personally its been a very interesting journey of learning for me about my culture, my people, but also confirming a lot of things …* [and] *also learning about other things that I wasn't aware of.* (Interview Transcript 3.7, 13/03/01). This self-awareness expressed by both Rosemary and Louise is linked to identity, which is discussed further in Section 5.3.

5.1.7 Summary: 6P model of museum learning

Overall, learning was viewed very positively across all samples. However, one important finding was that learning was initially hard for participants to define and, therefore, to talk about. They needed to be given time to reflect about learning as a concept and its role in their own lives. Using the 6P framework, a range of ways that learning was described as a *process* and a range of *places* where learning happened have been uncovered so far. The *personal* aspects of learning as meaning making and the importance of prior knowledge and experience, interest and physical learning were also supported. Learning had a *purpose* and was an enjoyable practice with end-*products*, particularly when choice was provided.

5.2 Relationships: learning, education and entertainment

One of the research areas studied was how learning, education and entertainment were described and whether there was a relationship between them. As discussed in Chapter 1, Section 1.1.2, it was suggested that the word "learning" may be confused with "education" and therefore be negatively perceived (Falk et al., 1995a; Prince, 1990; Roberts, 1991). In the present study participants were asked to describe each concept and then rate them across a range of constructs. It was found that although the concepts of learning, education and entertainment shared some similar characteristics, four major differences between them were identified. These are reported below, followed by a discussion of how the three concepts are linked, and finally a way to explain this relationship proposed.

5.2.1 Differences between learning, education and entertainment

The first difference found was that the general language used to explain each concept differed. More active words were used to talk about learning, such as discovering, exploring, applying and experiencing. Participants described education in more concrete ways, including words and phrases such as "structured/formal" and "something you are told to do/tell others to do". Education was seen as a structured process that delivered learning in a formal way: *I think education conjures up the air of the State and a system of providing learning* (Interview Transcript 2.3). Other comments about the formal and structured nature of education included:

- *Pretty structured, involves discipline, it's necessary for preparing yourself for life* (Questionnaire respondent #13).
- *Learning is more subliminal, education is formal and* [a] *more structured means of learning* (Questionnaire respondent #27).
- *A structured learning, not necessarily needed* (Questionnaire respondent #65).
- *Learning facts, comprehending ideas* (Questionnaire respondent #69).
- *Structured learning, schooling* (Questionnaire respondent #89).

Second, previous research established that people had generally negative views of education as a passive process over which they had no control (Park, 1994;

Taylor & Spencer, 1994). These researchers found that respondents in their studies thought of education as a formal process usually associated with school, something imposed and prescriptive. However, the negative views of education expressed by participants in the present study seemed to emanate from a perceived lack of choice. For example, when comparing learning and education Stephen said that *… learning never, never ends … it's a choice … a very natural process …* [whereas] *education is more given to you.* (Interview Transcript 3.5, 5/03/01).

Third, although there were differences in the language used to describe these concepts, there was still an appreciation of the role that education played in both acquiring facts and information, and in delivering learning. For example, when distinguishing learning and education, a participant in the pilot study said that education assumes: *You're a bunch of empty buckets, I've got knowledge and I'll pour the knowledge in, whereas learning describes the actual process that's occurring inside you and therefore is much more rooted in the individual.* (Interview Transcript 2.1). Sixteen percent of questionnaire respondents stated that education was an extension of learning or a way to deliver learning:

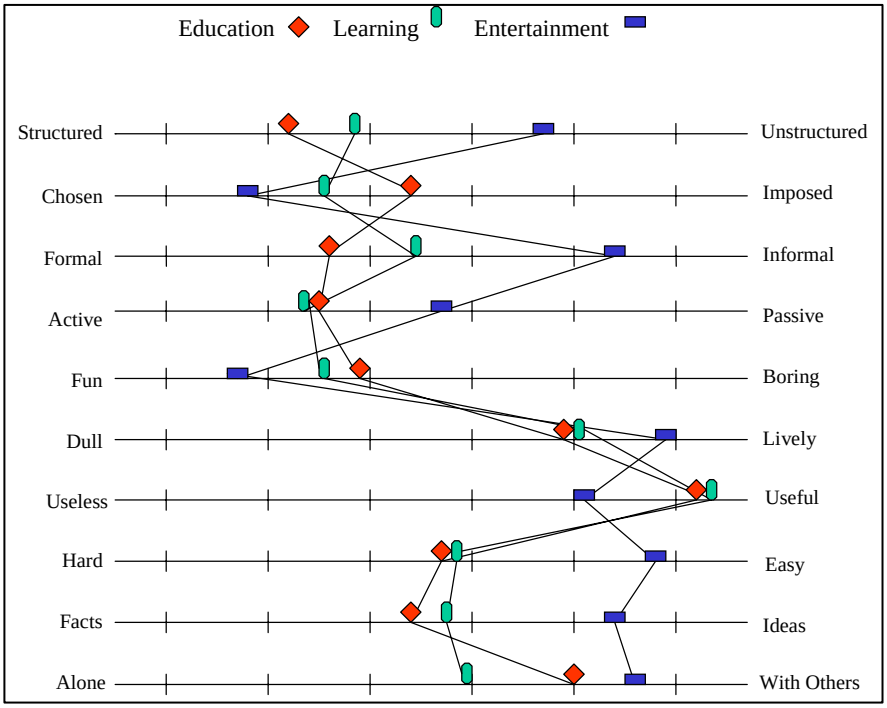
- *Techniques used to teach people, teaching is a process of imparting learning* (Questionnaire respondent #18).
- *Learning from somebody else or someone else teaching you* (Questionnaire respondent #39).

The results suggest that education and learning were closely linked, with education a process that leads to learning. Unlike some of the studies reviewed in the literature, education was not seen as necessarily negative, just different—something we all have to experience at some stage of our learning lives.

The final difference emerged when comparing entertainment with learning. Entertainment was described as fleeting, short-term, a good time, with the recognition that the medium or delivery mechanism (such as film, videos and multimedia programs) formed an important part of the entertainment experience. In contrast, participants felt that learning used your brain, built on previous knowledge, was long-term and could be entertaining as well: *I certainly can't see a reason why you can't learn and be entertained at the same time* (Interview Transcript 1.4). A strong finding was that, in contrast to learning and education, descriptions of entertainment included words and phrases that were based on feelings and emotions.

The semantic scales results also illustrate the differences between learning, education and entertainment across the ten constructs assessed (Figure 5.5). This demonstrates that entertainment is an obvious outlier, with education and learning following an interestingly similar pattern.

Figure 5.5. Semantic differential scale: learning, education, entertainment



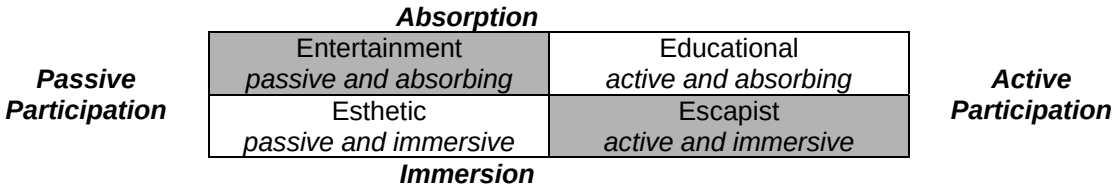
5.2.2 Linking learning, education and entertainment

Several writers have addressed the concepts of learning, education and entertainment or linked them in some way. Mintz (1994) discussed the role of entertainment within a leisure-oriented society using the term "edutainment" to address the question: 'What is the optimum combination of entertainment and education?' (1994, p.34). Hooper-Greenhill (2003) suggested that the construct of edutainment had attempted to integrate the perceived separation between education and entertainment. She noted that education was '… hard work, cognition, instructive mode, experts and novices and schooldays' (p.3) with entertainment associated with '… pleasure, affective/emotions, discovery mode, friends and family and holidays' (p.3).

Moore (1997) and Witcomb (2003) focussed on how museums positioned themselves as entertaining venues through integrating popular culture with exhibition programs. Newhouse (1998) and Trulove (2000) outlined new museum developments around the world and the role that architecture played in promoting enjoyable, entertaining and educational experiences. Trulove (2000) commented that while it was important for museums to be entertaining, he felt that entertainment wasn't just an exercise in simple fun but a process of "enlightenment" that could be deeply satisfying for visitors. Lisa Roberts (1997) investigated practices across discipline areas within museums and theorised about the changing roles of staff in exhibition development. She traced the development of museum education in the United States and noted the important role that entertainment had played in the establishment of early institutions.

Laura Roberts (2001) developed a model of education and entertainment based on Pine and Gilmore's "experience economy" concept (1999), illustrated in Figure 5.6.

Figure 5.6. The Experience Economy

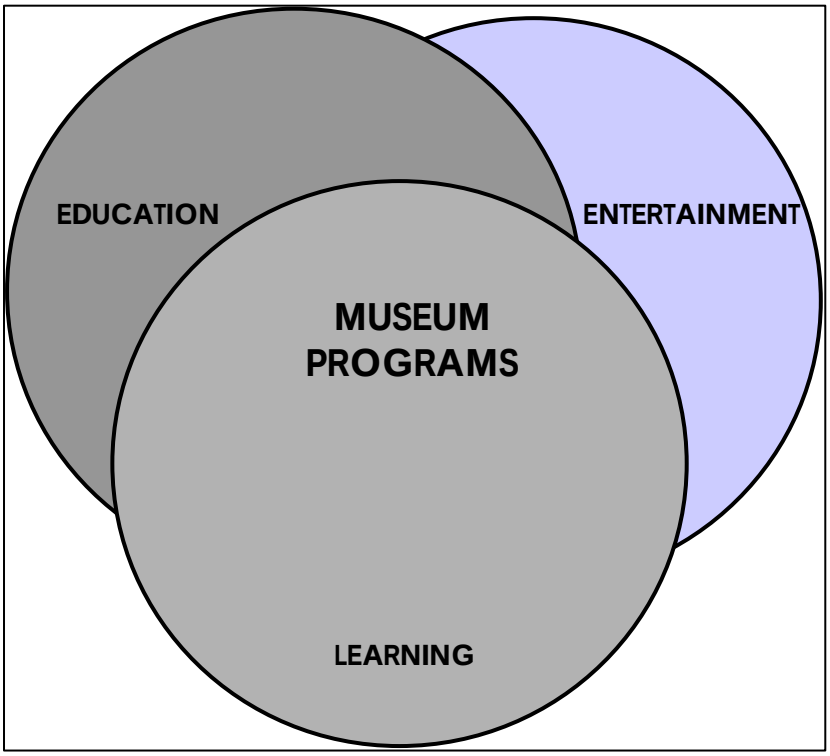


(Source: Roberts, 2001, p.24)

Roberts' ideas are relevant as she conceptually linked education and entertainment within a participatory and experiential framework. However, findings from the present study pointed to some differences. First, although absorbing, entertainment was also described by questionnaire respondents as active. Second, entertainment was seen very strongly as an escape from the everyday, a *release, shutting off, escape from other things* (Questionnaire respondent #23). Third, participants felt that learning was more "active and absorbing" than education. Finally, although Roberts stated that 'While there's a large element of entertainment in most experiences, they're not incompatible with education' (2001, p.25), the difference found from the present study was not the word entertainment, but the word education. The views of education shown in Figure 5.6 were consistent with how participants viewed learning, suggesting that the word *education* could be replaced with the word *learning* in Roberts' model, with each concept overlapping rather than separate processes.

In reflecting on how the findings from the present study relate to this literature, it is concluded that the museum environment enables the concepts of learning, education and entertainment to closely overlap in positive ways (Figure 5.7).

Figure 5.7. Learning, education and entertainment



Museums have a strong learning focus, with education a formal way of providing museum learning programs, and entertainment representing the enjoyment, leisure, emotional and sensory aspects of a museum visit. In relation to the 6P model of museum learning described earlier, it is proposed that education is a *process* that occurs within a defined *place*, that enables the delivery of formal *products* of learning. Entertainment also happens within a defined *place*, either real or imaginary, yet is *person-centred*—being sensory, escapist and relaxing. Learning, while it involves other people, is essentially an *individual process* that happens inside a person's head and at their own instigation, with a specific *purpose* and *end-products*. It is also *place-oriented*, occurring across a broad range of formal and informal contexts.

The challenge for museums is to combine these three concepts in ways that build on the positive aspects of each. It has been recognised that museums are places for rich sensory experiences (Bedford, 2001; Carr, 2003b; McLaughlin, 1997; Pine & Gilmore, 1999; Pitman, 1999) and visitors also value the sensory aspects of museums (Groundwater-Smith & Kelly, 2003; Kelly et al., 2004; Packer, 2004). Some particular elements of entertainment found from the present study that are relevant to museum experiences include sensory, escapism, relaxation, something undertaken within a person's own time and that they choose to do. Positioning themselves as places for entertainment may not necessarily be perceived as superficial or shallow by museum visitors.

5.2.3 Summary

The discussion so far has focussed on museum learning as explained by the 6P model of person, purpose, process, people, place and product; and how learning relates to education and entertainment. Some of the findings that are particularly applicable to personal change and growth are linked to a person's identity—how a person sees themselves in relation to their world and their role in it, as well as in relation to others. The next section looks more closely at the findings in relation to identity, and outlines the new areas of investigation that emerged.

5.3 Learning and identity in museums

Wenger (1998) viewed identity as '… an integral aspect of a social theory of learning … a pivot between the social and the individual' (p.145). In Stage One an example of linking learning and identity was expressed by Louise when she described learning. Louise felt that learning was a complex multi-layering of artefacts, stories and spirituality: *… it's not only just about the physical form, it's about the environment, it's about spirituality, it's about, at the end of the day, identity. That's what it's all linked back to and again learning is very much a part of that …* (Interview Transcript 3.7, 13/03/01).

Worts (1996) suggested that identity was the way that people made meaning, which was '… reflected in one's knowledge, beliefs, taste and skills' (p.128-129). When thinking about the nature of their museum experiences in-depth interview participants expressed broader views of themselves and the world, which make reference to their identity, for example:

- learning more about others (Scott) and about your family (Mavis)
- being able to "read through" media images of Aboriginal people based on new knowledge (Stephen)
- discovering that you will read text if it interests you (Doug)
- discovering that the museum from your childhood was smaller than you remembered (Doug)
- reflecting on your role in the visit as a "carer" rather a "learner" (Rosemary)
- showing surprise when realising that learning was a process of deeper insights and change (Rosemary)
- expressing learning as a process of cultural engagement and exchange with others within a community of practice (Louise)
- finding out that learning could be enjoyable (Dennis)
- realising that learning was about broadening your horizons as well as new facts and information (Brenda).

Meaning making, change, learning and identity are closely linked. In thinking about identity as involving a person's attitudes, values and belief systems, several examples of personal change were uncovered in Stage One. For example, Stephen reported that his views were challenged and then changed in a positive way from the new information he had acquired during his visit: *And it was interesting that on some of the TVs* [oral history videos in the exhibition] *there were Aboriginals talking about different subjects, but there were a lot of positive Aboriginals. What I mean is that normally in the media and a lot of information, you see the original Aboriginal in their old clothes, in hardly any clothes, you never in the media see a smart Aboriginal or Islander, it's always someone who's wearing the old clothes, and what happened to the many of them that did go to university? Who had a good job? You hardly ever see that aspect. So in the end you actually saw some people who did make a change, did make a difference in their cultures and that was nice, and good to see actually.* (Interview Transcript 3.5, 5/03/01).

Questionnaire respondents also reported that learning could be about increased understanding and attitude change:

- *Opening the mind to new experience* (Questionnaire respondent #4).
- *Picking up from other peoples' or your own experiences, and applying that to whatever you do* (Questionnaire respondent #39).
- *Discovering new ways of thinking and knowledge* (Questionnaire respondent #99).

As described in the literature review (Chapter 2, Section 2.5) identity is an essential component of how people make sense of themselves and their place in the world. By making reference to the past, people employ a range of "cultural tools" to help them understand where they have come from, where they are now and where they are going through a process of meaning making (Wertsch, 1997). A range of formal and informal institutions are involved in the production of these cultural tools, including museums (Ogbu, 1995). People make meaning from their museum experiences in many different ways based on a conjunction between what the museum provides and the social norms of their visiting group (Fienberg & Leinhardt, 2002). Meaning making is an important way that people learn in museums (Falk & Dierking, 2000; Hein, 1999; Silverman, 1995), and is closely related to an individual's identity (Rounds, 2006; Worts, 1996).

It has been recognised that individuals '… make meaning privately, but they also make meanings by embodying and representing them externally — in word, image, and object' (Stevens & Martell, 2003, p.26). Recent museum learning research used methods and reported outcomes through *conversation* (Callanan, Jipson & Soennichsen, 2002; Leinhardt & Knutson, 2004; Pierroux, 2003; Rice & Yenawine, 2002). It was felt that conversations could give insights into how social and cultural processes were integrated through demonstrating both the processes of learning and the outcomes of a learning experience through reflection (Leinhardt, Crowley et al., 2002; Leinhardt & Knutson, 2004). For example, research into the role of chaperones in a museum visit concluded that 'Often the interview helped clarify the chaperone's intent and perceptions' (Sedzielarz, 2003, p.21). A study of visitors to a glass exhibition in a social

history museum in the United States (Fienberg & Leinhardt, 2002) looked at identity and what participants' conversations revealed about visitor engagement and identity. Fienberg and Leinhardt suggested that

> … the conversation visitors have … both reflect certain aspects of the identity of those visitors *and* mediate visitors' engagement and understanding (p.167, emphasis added).

It was felt that conversations encouraged deeper insights by both the person talking and those who are listening.

To illustrate the way conversation can facilitate reflection, those interviewed in-depth in Stage One were asked to think about what had been discussed, with a number reporting that they themselves had learned during the interview process. Initially, they described their museum learning in terms of the exhibition content. Once they had reflected on the social context of their learning and their roles as a visitor, they could identify subsequent changes they experienced in themselves and their identity as a learner. For example, Rosemary acknowledged that new insights and self analysis were the result of a deeper reflection on learning, and led to personal change. When she further reflected on the actual outcomes of learning a deeper meaning emerged for her: *So I do believe you gain new insights from learning and you do feel that you can be more innovative through your learning and then you self-analyse yourself as to whether you're capable of exploring or going further with what you're learning.* (Interview Transcript 3.2, 13/12/00). At the end of the interview Rosemary added the words *new insights, innovation, self-analysis* to her learning diagram as she felt that she had acquired these ideas during the discussion.

Leinhardt, Tittle et al. (2002) suggested that in museums

> What we are seeing is human beings in a social setting bringing to bear their own identities and responding to a particular context (p.131).

Given the emphasis on learning as essentially a process of social engagement (Dewey, 1938; Falk & Dierking, 2000; Hein, 1998; Vygotsky, 1978) elaborated through conversation (Leinhardt, Crowley et al., 2002; Leinhardt & Knutson, 2004; Stainton, 2002) it is still critical to focus on individuals and their perceived and actual roles. The way people see themselves as learners now and in the

future, underpins what they do and what they learn during a museum visit—I have called this their *learning identity*. Findings from Stage One suggest that this learning identity was fluid and heavily dependent on the role a person played in the visit. Were they a friend tagging along as company? Were they parents, grandparents or carers who perceive that they are looking after the learning needs of others? Were they seeking something specific or just wandering and seeing what could happen? What were their visiting agendas (Falk et al., 1998) or "entrance narratives" (Doering & Pekarik, 1996) and where did learning fit?

5.4 Reflecting on learning and learning identities

As described in Chapter 1, a visitor's learning identity is defined as how individuals describe themselves as learners within a sociocultural context, including their future views of learning and the roles learning plays in their lives. Within the context of museum learning, identity can be influenced by the tools with which visitors interact (the exhibitions, exhibits, objects and texts), as well as staff, companions and other visitors. These come together in ways that shape not only what is learned, but how people see themselves as a learner during and after a visit and how that might influence future learning activities.

Stage One revealed that adult museum visitors tailored their learning style to suit their particular situation, rather than seeking learning experiences that matched how they stated that they liked to learn. Learning was seen as an adaptive process, both a structured and unstructured experience, where learners used a set of tools in accordance with their preferred learning styles and identity within a sociocultural context, such as a museum. For example, a person's learning identity coupled with the roles they play in a visit may influence how they experience the museum as a learner and what they learn. This is an interesting and potentially controversial proposition—do visitors learn regardless of the museum's intentions? Do visitors make choices in exhibitions that take advantage of their learning preferences? Do people adapt and respond to museum exhibitions, as visitors and as learners, according to the roles played in the visit? In order to encourage better learning outcomes do visitors need assistance to think of themselves as learners in a museum? If identities constantly change and

transform (Bauman, 1996; Hall, 1996) do visitors amend their learning identity to fit with the experiences they are provided with and, in turn, do these experiences influence their learning identity?

A person's learning identity is the subject of Stage Two, which investigated whether engagement with a museum exhibition had any effect on a visitor's learning identity. If visitors were encouraged to think about themselves as learners before they encountered an exhibition would their learning identity change afterwards? The next chapter explores these questions and presents the analysis of the Stage Two findings in conjunction with outcomes from Stage One and the literature.

Chapter 6. Adult museum visitors' learning identities and a Museum exhibition

Stage Two examined adult museum visitors' learning identities focussing on the interrelationships between their views of learning and their learning experiences at a museum. The two sub-questions investigated in this stage were:

- How well do the learning opportunities provided by museums match how an individual likes to learn?
- What roles do visitors play in a museum visit and do these roles influence their learning identity?

This chapter reports on Stage Two, briefly re-visiting the method and sample, then outlining the analysis and findings. Areas of the literature described in Chapter 2 that relate to these findings are also discussed where relevant.

6.1 Stage Two method

The method for Stage Two was presented in Chapter 3, Section 3.4. This section provides details about the five families and five couples that participated in the study. A total of 29 people were involved—17 adults aged from 20-75 years (5 male and 12 female) and 12 children aged from 3-16 years (5 male and 7 female).

All ten groups were met on entry to the Australian Museum and briefed about the study. They then participated in a pre-visit interview which asked them to describe "learning" and discuss how they personally like to learn, using the same questions from Stage One (Chapter 3, Section 3.3). After the interview each group was taken to the *Uncovered: Treasures of the Australian Museum* exhibition (outlined in Chapter 3, Section 3.4.3, with the entry shown in Figure 6.1) where they were observed and their conversations audio-recorded.

Figure 6.1 Entrance to *Uncovered* exhibition

Table 6.1 outlines the details of those involved in Stage Two, with pseudonyms used to protect privacy.

Table 6.1. Sample details: Stage Two

Code	Group type	Details	Primary participant	Other participants
F1	Family	Mother aged 34 years, daughter aged 8 years and son aged 7 years	Mother (Liz)	Girl (Tara) Boy (Paul)
F2	Family	Mother aged 28, daughters aged 5 and 3, and male partner aged 25	Mother (Jo)	Male (Mark) Girl (Ally) Girl (Nat)
F3	Family	Mother aged 41 years visiting with 3 children (girl aged 5 and boy 7)	Mother (Kay)	Boy (Zeke) Girl (Mia)
F4	Family	Mother aged 46 years visiting with 3 children (girl aged 15 and twin boys aged 12)	Mother (Mary)	Girl (Rox) Boy (Jake) Boy (Sam)
F5	Family	Mother aged 39 years, daughter aged 14, son 12	Mother (Cath)	Girl (Bree) Boy (Eddie)
C1	Couple	Male and female both aged 20, university students	Male (Tim)	Female (Jules)
C2	Couple	Male aged 60 and female 58, both retired	Male (Art)	Female (Dot)
C3	Couple	Male and female couple both aged 44 (both teachers), with mother-in-law and daughter, 16	Male (Rick)	Female (Toni) Girl (Kate) Female (Edna)
C4	Couple	Male aged 73 and female aged 69, both retired	Female (Fran)	Male (Ted)
C5	Friends	Females aged 23 and 26, students at TAFE and uni	Female (Bron)	Female (Kris)

For the purposes of this study each person who carried the tape recorder is called the ***primary participant***. Sometimes more than one person was involved in the pre- and post-interviews—when this occurred the primary participant's information is used in the analysis and supplemented by others where relevant. Several children enthusiastically participated in both the exhibition visit (heard on the tape and through observations) and the post-visit interviews. However, as this study focusses on adults, the only data from children used are incidental comments from the conversations and interviews where relevant.

When participants had completed their exhibition visit, a second interview was undertaken which addressed the main messages of the exhibition and what they found particularly interesting and would tell others. As one way for them to state how they felt they learned in the exhibition they then rated the following ten statements on a four-point scale:

1. I discovered things I didn't know.
2. I learned more about things I already knew.
3. I remembered things I hadn't thought of for awhile.
4. I shared some of my knowledge with other people.
5. I got curious about finding out more about some things.
6. I was reminded of the importance of some issues.
7. I got a real buzz out of what I learned.
8. It was pleasant to be reminded and to learn more.
9. It was all very familiar to me.
10. Some of the things I learned will be very useful to me.

These statements were derived from those used in a study of museum learning across a range of cultural institutions in Australia (Griffin et al., 2005).

Finally, they were asked to review their earlier description of learning and discuss how their exhibition experience matched (or not) the ways they had stated they like to learn in the pre-interview.

6.2 Data analysis

The data gathered from each group—pre- and post-interview responses, rating scales, observation notes and conversation transcripts were analysed in two ways. First, a narrative description was written for each group under the following headings:

- background detail about participants
- views of learning pre-exhibition
- behavioural observations, time spent in exhibition and visit pathways
- general views of learning post-exhibition
- significant conversation events (described in Chapter 3, Section 3.7.1) that revealed aspects of learning
- general comments.

An example of this analysis is in Appendix 14.

Drawing on these narrative descriptions, the interrelationships between adult museum visitors' views of learning (their learning identities) and their exhibition experiences were then examined. This analysis found that the method used in Stage Two enabled adult visitors to gain insights into themselves as learners in three areas by:

1. *Influencing* their learning identity through identifying new ways that they learn from their exhibition experience or becoming more confident in their learning.
2. *Resonating* with, or matching, how they like to learn.
3. *Conflicting* with their learning identity, reinforcing in their minds the ways they do not like to learn.

These are further explored in Section 6.3.

Finally, the total data set across all ten groups was reviewed using Miles and Huberman's (1994) guidelines for analysing qualitative data. A particular focus was on noting themes that related to outcomes from Stage One (Chapters 4 and 5) and the literature (Chapter 2). From that analysis the following three themes were identified:

- the roles visitors play
- sharing learning
- linking to past, present and future experiences.

These are discussed in Section 6.4.

6.3 Findings in relation to learning identities

Paris and Mercer (2002) concluded that objects remembered by visitors were those that were either related to or created feelings that resonated with their identity. Paris et al. (2001) argued that people constantly formed, re-formed and shaped their identity in order to understand themselves '… partly in relation to their own histories and anticipated futures' (p.257). Leinhardt and Knutson (2004) suggested that a visitor's identity was participatory and changed in response to the visit itself. Hooper-Greenhill (2004b) identified outcomes from a visit that included a deeper understanding about self, family and the world.

In the present study the process of data collection (particularly the pre- and post-interviews and observations) enabled participants to reflect on their views of learning before and after their exhibition visit. This resulted in both the participants' and the researcher gaining insights into learning identities described below. There was also one instance, outlined in Section 6.3.4, where these insights were unclear.

6.3.1 Learning identity influenced by experience

When comparing views of learning from the pre- and post-visit interviews, there were four instances where the experience influenced the ways participants thought about themselves as learners. Members of these groups felt they had learned in new ways, both drawing from and adding to their previous knowledge and life experiences, learning more than expected, becoming more confident in their learning and finding out new information about family members.

In her pre-visit interview **Liz** (F1) described herself as a *visual learner*. She also noted that she didn't learn for herself but that her role was to help her children learn. However, in her post-visit interview Liz reported that she had used strategies that she felt a *reader-learner* would use. She found being able to get up close to the objects *intriguing*, giving her the motivation for *deeper investigation*.

Liz also realised that the family had travelled through the exhibition as a group, rather than only following pathways dictated by the children. She felt that this enabled them to learn more together than she had first thought. Liz stated that she usually doesn't have the time to *go into detail* (hence her description of herself as a visual learner), but as her children continually pointed out objects that they were interested in, Liz felt she *got more into it* and learned more about them as well as the Museum objects. The interview and observation data for Liz's group is presented in Table 6.2 (over the page).

Table 6.2. Liz (F1): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Visual learner • Based on interests and prior knowledge • Learning with and through others • Interest • Learn with children • Grasping concepts • Investigation	• Spent 25 minutes in exhibition • Started on the right-hand side of exhibition and did not see/read the Introductory text about the Museum and why it collects • Spent most of time engaged with exhibits, especially the mammals, reptiles and birds sections • Lots of bending, peering, pointing, discussion and getting "up close" • When exhibition got crowded (about half-way through visit) they still looked closely but didn't spend as long at each case • Tracing shapes of skeletons on the glass	• Learned about marine animals • Learned about childrens' interests • Linked what seen to previous shared experiences and future holiday destinations • Discovered new interests • Learned new things

Cath (F5) visited with her two children, **Bree** and **Ed**. In her pre-visit interview Cath described learning as *absorbing information* and *finding out things of interest that I can tell others about*. When in an exhibition she wants *visual experiences* that *catch your eye*, with *accompanying short summary paragraphs of text to absorb and remember*, stating that she was a *top-level reader-learner*.

All members of F5 participated in the post-visit interview, and were clearly very excited about *Uncovered*, animatedly discussing all the things they had seen and learned in a positive and confident manner. They felt that they were able to make numerous connections from the exhibition to what they already knew and, at the same time, extend their knowledge and expand their interests. They mentioned an upcoming holiday to the north coast of New South Wales and reported that they had made notes about the seahorses they saw in the exhibition that came from that area so that they could look out for them. They also noticed a whole range of the similarities and differences between the colours of the seahorses that they previously weren't aware of, and would now observe in the wild.

In her research with teachers and students in the United Kingdom, Hooper-Greenhill (2004a) concluded that children exhibited more positive learning identities after visiting a museum, and this was demonstrated by the F5 group. They really enjoyed the exhibition and appreciated the joy of sharing learning together with positive outcomes for each individual's learning identity in terms of confidence in using the information they had learned in future. Cath, Bree and Ed enthusiastically listed all the familiar as well as the *cool* new things they had seen and could now "show off" these new facts to others.

Cath also reported in her pre-visit interview the importance of sharing her knowledge with others. Again, in the post-visit interview, the whole group was amazed that they shared as much as they did, realising the importance of this process as a family *bonding* experience. The interview and observation data for Cath and her group is presented in Table 6.3.

Table 6.3. Cath (F5): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Visual experiences that catch your eye • Share knowledge with others • "Top-level reader-learner" • Absorbing information • Read books • Wondering	• Spent 45 minutes in exhibition • Visited all parts of the exhibition and looked at the majority of exhibits • Stayed together as a group • Exhibition was very crowded at the time of their visit and they were observed waiting, as well as pushing through and asking people to move • Animated discussion at case with starfish, lots of pointing and talking • 30 minutes into the exhibition they had a lively discussion about where to go next, what else was there to see that they may have missed • Gathered around the larval fish case for discussion • Behaviours: peering, bending, crouching, getting closer, pointing	• Excited at the amount they learned • New knowledge gained based on previous life experiences • Linked what seen to previous and future holiday destinations • Shared knowledge and information, found that was a bonding process • Will use information gained in other contexts • Made links from familiar to unfamiliar

In her pre-visit interview **Jo** (F2) stated that learning was *growth, development and change*. She thought that learning at museums was about history and finding out about different cultures. As a learner, Jo felt that she needed a lot of *repetition to retain information*, acknowledging the role of prior interest in her personal learning: *If I'm interested I'll excel, if not it goes straight through*.

In the post-visit interview Jo reported that she had a wider interest in animals than she had imagined, especially marine creatures. Jo had initially thought that museums focussed on fossils and dinosaurs, not realising the variety of objects and subject areas and the amount of artefacts they hold. She also reported that her family shared and generally enjoyed learning together more than she had expected, especially as her children were younger and she was unsure how interested they would be in the exhibition. Jo was surprised that her family had developed an informal "system" for visiting the exhibition—once they had oriented themselves they worked out a plan to ensure they didn't miss anything. Through this process of visiting together and sharing their experiences as a group, Jo felt she personally learned more, even in areas she wasn't interested in.

The interview and observation data for Jo's group is presented in Table 6.4.

Table 6.4. Jo (F2): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Learning needs to be based on personal interests • An active brain • Growth • Development • Change • Repetition	• Spent 55 minutes in exhibition • Followed the intended pathway through the exhibition and saw the majority of exhibits • Children kept pointing and asking questions • Read all texts thoroughly • Adult female was directing the visit to begin with, then girls took over • The exhibition was crowded and, as the girls were little, adult female tended to stick quite closely to them • Very engaged and absorbed at marine exhibitions, kept calling adult male over to point out specimens	• Wider interest in animals than first thought, especially marine life • Shared learning more than expected • Planned route through exhibition

In their post-visit interview **Ted** and **Fran** (C4), thought differently about themselves as learners. In the pre-visit interview Fran talked about learning as *taking in what you see around you and using it in your everyday life*. Ted described learning as *taking an interest in things*, adding that people learn continually throughout their lives. When discussing how they personally learn Ted stated that he liked *hands-on* approaches, and Fran talked about *trial and error*, *learning through others*.

In their post-visit interview when asked how *Uncovered* fitted with the ways they like to learn, both Fran and Ted stated that they were surprised that exhibition encouraged them to remember things from their past and make connections. They were also amazed at the amount of new information they learned, more than they expected. In his post-visit interview Ted had rated *I discovered things I didn't know* very highly. Both Ted and Fran reported learning new things that also triggered long-forgotten memories. For example, in their post-visit interview Fran and Ted discussed their visit to a butterfly house in Singapore in some detail, a memory prompted by a showcase full of butterflies (shown in Figure 6.2).

Figure 6.2. *Uncovered* exhibition: butterflies showcase

Ted particularly enjoyed the geological formations leading him to reflect on the wonder of nature in forming these minerals. Fran also liked the crystals and rocks which reminded her of a long-forgotten prior interest in fossicking. The interview and observation data for Ted and Fran is presented in Table 6.5.

Table 6.5. Ted and Fran (C4): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• New information used to reflect on previous knowledge • Interests • Learning through others • Travelling • Learn new facts • Taking in what you see around you • Trial and error • Hands-on • Lifelong	• Spent one hour in exhibition • Spent more time at the history/timeline display (in the Introductory area) • Read many text panels – naming and pointing • Seemed to (un)consciously decide not to visit the Anthropology section even though they did read the introduction panel to this section, yet once they saw the gamelan display (near the exit of exhibition) they doubled-back to the Anthropology section • Fran got into deep conversation with another female (elderly) visitor twice during the visit • Looking and peering intently, crouching to see more • Viewed most of the exhibition	• Learned new information • Remembered things from the past and make connections • Reminisced about holidays and travel • Showed surprise at what seeing and how much they learned

6.3.2 Experience resonated with learning identity

The C3 group were originally recruited as a couple, but **Rick** and **Toni** also visited with their 16-year-old daughter **Kate** and Toni's mother **Edna**. Rick was the primary participant, however Toni also took part in the pre- and post- visit interviews. When asked in the post-visit interview both Rick and Toni reported that *Uncovered* matched how they liked to learn, and they both stated they learned new things. Additionally, the conversations revealed that learning was strongly shared across all members of this group (discussed further in Section 6.4.2).

In the pre-visit interview Rick stated that learning was making changes - personal, mental, spiritual, physical, with learning a catalyst for change. Toni described learning as enhancing my understanding of the world and acting on that understanding. Rick felt that the exhibition did continually encourage him to make links from familiar to unfamiliar things, which fitted with the way he likes to learn expressed in his post-visit interview as taking what we know and making connections to that from what is in the exhibition.

In Toni's pre-visit interview she said she learns through *processing information that was reinforced with concrete examples that enable you to put into practice what you are learning*. In the post-visit interview Toni stated that although there was a lot of information to read, it was not overloaded and therefore she could *read and process,* another way she likes to learn as reported in her pre-visit interview.

The interview and observation data for Ric's group is presented in Table 6.6.

Table 6.6. Rick and Toni (C3): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Personal, mental, physical, spiritual change • Enhance understanding, act on it • Visual • Talks & lectures • Learning by doing • Reading, looking • Concrete examples	• 53 minutes in exhibition • Mostly stayed together as a group, when did separate were frequently called back together by the daughter • After half-way the Toni ad Edna moved off together with Rick and Kate staying together and talking • Adult male and daughter observed walking, talking, animatedly sharing information	• Learned new things • Connected current information with new • Shared knowledge with others • Shared family experiences • Learned about each other's likes/dislikes • Remembered • Linked familiar to unfamiliar

6.3.3 Experience conflicted with learning identity

The literature has consistently reported that visitors' are able to articulate what they do and do not like in museum exhibitions and programs, as well as how they want to engage with exhibitions (Durbin, 1996; Groundwater-Smith & Kelly, 2003; Hein & Alexander, 1998; McManus, 1991b). In Stage Two there were four examples where visitors' views about how they did not like to learn were reinforced by their experiences in *Uncovered*. Yet, this wasn't necessarily a negative outcome, as each participant could still identify and appreciate that they had learned from the exhibition.

In her pre-visit interview **Kay** (F3) described herself as an "immersive learner". When talking about how she personally learned, Kay stated that she became *obsessed* and had to *do something non-stop*, becoming really *immersed in it*. She stated that learning was a *hands-on experience*, where a person was *involved with something*, and gave words, texts and objects as examples. However, in her post-visit interview Kay remarked that the *browsing nature* of the exhibition did not fit with the immersive way she preferred to learn. While she acknowledged that browsing enabled her to pick up lots of new information, she felt that the exhibition didn't hold the attention of her and her family as much as she wanted.

The data did reveal, however, that the F3 group were learning in *Uncovered*. To illustrate, Kay mentioned that she is developing an interest in art and reported that she used the exhibition to think about how she might pursue that further. She also expressed surprise that her children had more general interests than she first thought.

The interview and observation data for Kay's group is outlined in Table 6.7.

Table 6.7. Kay (F3): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Immersive learner • Other people • Hands-on • Involved with something – words, texts, objects • Take classes • Reading books	• Spent 20 minutes in exhibition • Missed the middle sections of the exhibition – stuck to the sides of it • Children dictated the path and how long they spent in exhibition • Adult female stuck with daughter, but also had interaction with one of the boys • Adult male and other male sibling moved through the exhibition as a pair • Adult male continually called away to look at something • Had a break at 20 minutes to watch a DVD in the exhibition	• Connected objects to art interests • Linked to prior experiences • Facilitated learning through questioning and linking • Shared family experiences • Learned more about others • Made links to popular culture

In his pre-visit interview **Art** (C2) described learning as finding out something you didn't know already and adding to what you already know. **Dot** talked about learning as educating me on something I have no idea about. As a learner, Art likes to see things in written ways in a language I can understand and that there is a lot of emotion in learning things.

In their post-visit interview both Art and Dot stated that *Uncovered* did not give them the deeper information they were seeking in order to learn. While they said that *a general look is fine*, there was not enough in the text to help them make sense of what they were seeing, in a language that they could understand—too many *big concepts* and not enough detail. In his post-visit interview, Art realised that he was a *technical learner*, and reiterated that the exhibition did not give him enough detailed information, citing an example of how fossils and crystals were formed. These resulted in some frustration that was also evident in their conversation transcript. The interview and observation data for Art and Dot is presented in Table 6.8 (over the page).

Table 6.8. Art and Dot (C2): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• New information and adding to what already know • Reader-learner • Background and training • Groups of like-minded people • Teachers • Educating • Emotional learning	• Spent 50 minutes in exhibition • Did not read the Introductory text panels • Looked intently at most exhibits, and read all of the stories • Not much talking • Missed the Anthropology section, however, once they saw the Captain Cook cloak display (near the exhibition exit) realised they hadn't seen the Anthropology section and went back to view it	• Reinforced that a technical learner • Added to already existing knowledge • Learned new things • Wanted more information and deeper layers

In their pre-visit interview **Tim** and **Jules** (C1) described learning as *new facts, processes, books and teachers*, something that *happens at school or university*. When discussing how they personally like to learn they both framed their answers in the context of their learning identity as university students. They talked about enjoying reading and debating issues at tutorials, especially as they felt you *remember it more if it is discussed and argued rather than someone telling you* (Jules). They both felt that effective learning is based on interest; if not then it becomes merely *rote learning* and not as *durable*. They reported that they enjoy discussing issues and ideas with their peers and friends.

When asked how *Uncovered* fitted with the ways they like to learn, they both felt the exhibition was full of interesting "trivia", but reported that they didn't develop any new knowledge or insights. They stated that although there were fascinating *snapshots* there were no *deep learning opportunities*. As they felt the exhibition wasn't related at all to their university studies, they thought it would be more relevant and interesting to marine biologists or other specialists. They reported that *Uncovered* didn't engage them on an emotional level, particularly when compared with their recent museum experiences in Vietnam, which they had recalled in vivid detail in their pre-visit interview.

The interview and observation data for Tim and Jules is shown in Table 6.9.

Table 6.9. Tim and Jules (C1): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Based on personal interest • Teachers, university lecturers • New facts • Processes • Books • Reading • Debating, discussing, arguing	• Spent 55 minutes in exhibition • Read the Introductory panels, spending 10 minutes in the Introductory area • Stayed together, discussing and determining the best paths to take • Pointing; reading; intense looking • Spent lots of time at the geckos/lizards and flies displays, doubling back several times to re-look at these cases • Lots of animated discussion noted in the Anthropology section, particularly the artworks and headdresses • At two separate sections observed them laughing, pulling faces and generally enjoying themselves	• Developed new knowledge and insights • Exhibition visit a social experience, planned new social activities • Related content to other shared experiences • Wanted deeper layers of information

In her pre-visit interview **Mary** (F4) described learning as looking at different subjects and objects, gathering information, doing research, studying something in detail, depending on both the subject of interest and the learning goals: getting as much information as possible about a subject.

Looking at Mary's post-visit interview responses it emerged that *Uncovered* did not change the way Mary thought about herself as a learner, rather it confirmed in her mind the types of exhibition experiences that she and her family did *not* want. This conclusion was also supported by the observations and conversation transcript which suggested that the material and object displays were not engaging enough for this family. Mary gave quite detailed feedback about how the exhibition did not fit with how she wanted to learn: she felt that better use of hands-on experiences and more information pitched at different learning levels was required.

The interview and observation data for Mary and her group is presented in Table 6.10.

Table 6.10. Mary (F4): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW
• Interests • Building on experience • Learn through others, including experts • Seminars, talks • Gather as much information as possible • Doing research • Studying in detail	• Spent 30 minutes in exhibition • Missed the beginning of the exhibition, and therefore the Introductory texts • Skimmed the Anthropology section at the back • Family separated and came together periodically • Girl stayed mostly alone, but all came together at the possums/echidnas section • Unlike others groups observed with younger children, these children didn't "direct" the visit • After 15 minutes sit and watch DVD • Very interested in possums, echidnas and tree kangaroos showcases	• Reinforced how did not want to learn—exhibition not engaging enough • Wanted more hands-on, technology and more to touch

6.3.4 Insights into learning identity unclear

In reviewing the data from **Bron** and **Kris** (C5), two university students aged 23 and 26, the impact *Uncovered* had on their learning identities was less clear. Compared with the other nine groups Bron and Kris gave very brief responses to the questions, particularly when asked to describe their views of learning in the pre-visit and then again in their post-visit interviews, even when prompted. Both Bron and Kris were very quiet and reserved with their conversation transcript revealing only a few instances of lively conversation. However, they did report after the visit that they had learned more new facts than they had expected. Bron also felt that she could now appreciate an exhibition on a *visual level*, rather than just *reading text*. The interview and observation data for Bron and Kris is shown in Table 6.11.

Table 6.11. Bron and Kris (C5): interview and observation data

PRE-VISIT INTERVIEW	OBSERVATIONS	POST-VISIT INTERVIEW / CONVERSATION
• Teachers • Industry experts • Researching • Reading • Acquiring	• Spent 35 minutes in exhibition • Exhibition not as busy and crowded which meant that they were able to get close to exhibits and read the text panels • Didn't observe much interaction, but became more animated at the beetles/butterflies cases (10 minutes into their visit) • Intensely read the Introductory panels, spending 10 minutes in the Introductory area • Didn't stay together as much as other couples observed	• Remembered and learned more than first thought • Reader learner and visual learner • Links made to animals found in home and pets

6.4 Themes in relation to Stage One

When further reflecting on the findings in relation to Stage One, three additional themes emerged—the roles visitors play; sharing learning; and making links to past, present and future life experiences. These are further discussed in the next sections, drawing on the interview, observation and conversation data where relevant. As detailed in Chapter 3, Section 3.7.1, Ash's (2002) idea of significant conversation events (SEs) was applied when analysing the conversation data. In the present study SEs were identified as short, sustained segments of conversation with definite beginnings and endings that related to a particular exhibit, content area or theme. In the SEs reported in the following sections the adult participants' names are in bold to distinguish their conversation from their childrens'.

6.4.1 The roles visitors play

Anderson's research (2003) found that visitors reflected on their experiences through the "frame" of their identity as well as their role in the visit. Ellenbogen (2002) noted that parents often played a "teaching" role in a museum visit. Ash (2002) stated that parents assisted learning through drawing on their own experiences, and they often took "central control" over the visit. Sedzielarz's (2003) study found that chaperones recognised their multiple roles which included guide, group facilitator, learning leader, teacher, learner, and visit planner. Stage One of the present study revealed that some participants (particularly mothers and grandmothers visiting with children) felt that their role was to support the learning of the children they accompanied to museums and other cultural institutions, rather than learn themselves.

From the Stage Two data it is suggested that visitors play three roles in a visit:

1. The *visit manager* by directing and organising.
2. The *museum expert* through explaining, clarifying and correcting.
3. The *learning-facilitator* in questioning, linking, reminiscing and wondering.

These roles occur simultaneously, are closely linked to the process of learning and are dependent on both the social context of the visit and the group composition, particularly the ages of any accompanying children.

In several families in this study the adults spent as much time playing the **visit manager** role and engaging their children as looking at displays themselves. It was found that adults had many strategies on hand to manage their childrens' needs, such as distracting them, asking questions and directing their attention to something they might like, as in the following SE (with the associated displays shown in Figure 6.3):

> ***Liz***. *Now see this over here. Come. Remember we found those didn't we? Where did we find them? Do you remember? We had a couple of those.*
>
> *Tara.* *What?*
>
> ***Liz***. *Those urchins.*
>
> *Paul.* *No.*
>
> ***Liz***. *Do you remember? We had one of those at home. You don't? Have a look at those.*
>
> *Paul.* [mumbles about wanting to go somewhere else]
>
> ***Liz***. *Well, if we all stick together they might be able to show us … OK then, should we go this way? Or that way? Oooh, a crown of thorns!*

(Conversation Transcript F1, 27/09/2004)

Figure 6.3. *Uncovered* exhibition: marine animals displays

For adults accompanying children the mood and behaviour of the child may impact on the learning that takes place. Adults sometimes have to spend time trying to activate interest and enthusiasm from a disengaged and bored child, which can also create tension if the adult wants to see something that appeals to them:

Paul. *Mum I hate this.*

***Liz**.* *What do you hate?*

Paul. *I don't want to see all these things …*

***Liz**.* *Don't you?*

Paul. *AGAIN.*

***Liz**.* *Well it sounded as if you were quite interested.*

Paul. *Let's move onto the second thing.*

***Liz**.* *Well, I want to move to the back part. We've only looked at the front part so far.*

(Conversation Transcript F1, 27/09/2004)

Liz did mention in her post-visit interview that she would like to visit *Uncovered* again either alone or when Paul was in a better mood, so that she could have another chance at enjoying the exhibition.

Mary (F4) reported that her family liked visiting the Museum, but for them to stay longer exhibitions need to attract and maintain the attention of children as she stated that *they are the ones' learning*. Mary's views echo some of those in Stage One who felt that they were there to assist with their childrens' learning, not necessarily to learn themselves. This was demonstrated in F4's conversations, particularly when Mary takes on the role of explaining the work of the Museum to her children, as shown in the following SE:

Rox. *Stag beetles.*

***Mary**.* *You can buy them as pets.*

Rox. *Are they dangerous?*

***Mary**.* *No*.

Rox. [reads text] *"Cholapetra family lupin", whatever. Is that a dodo?*

***Mary**.* *It's an albatross.*

Rox. *Disgusting, how can they just kill animals like that?*

***Mary**.* *If they're, like, endangered, they won't kill them, they wait for them to die.*

(Conversation Transcript F4, 29/09/2004)

The albatross specimen referred to above is shown in Figure 6.4.

Figure 6.4. *Uncovered* exhibition: large birds showcase

Lave and Wenger (1991) proposed that within a community of practice there were both novices and experts, however the present study suggests that when visiting an exhibition sometimes all group members may be novices, and someone takes on the role of filling in perceived gaps in the group's collective knowledge. The content of *Uncovered* raised many questions about the work of museums, often resulting in one adult in the group taking on the role of **museum expert**. This was demonstrated in the conversations through visitors' explanations of how museums worked or by dealing with questions that weren't answered in the text by drawing from their prior knowledge. These are illustrated in the following examples:

> *Rox.* *How do they catch them, Mum? I wonder what they put them in a bottle for?*
>
> ***Mary**.* *So you can see them, because the backs are white, so you can see them better.*

(Conversation Transcript F4, 29/09/2004)

> *Tara.* *Eoww, disgusting! Look at the little bugs … with a needle through them.*
>
> ***Liz**.* *Well that's just to hold them in place.*

(Conversation Transcript F1, 27/09/2004)

Art. *That's from India again.*

Dot. *I know, I wonder where they find them. Just walking along?*

Art. *I don't know, probably dug up from somewhere. Caves, mines, it doesn't say.*

Dot. *I think the variety of rocks and crystals is something you don't realise.*

Dot. *It's all fossils. So how does that happen?*

Art. *I think a leaf falls down into …* [inaudible] *and gets flooded over and then silt builds up, goes hard over the fossils and fossilises. I guess so?*

(Conversation Transcript C2, 28/09/2004)

Adults also play the role of **learning-facilitator**, whether visiting with children or other adults. The transcripts and observations revealed that parents, in particular, direct the visit and adopt the learner-facilitator role more than they thought they did when they were interviewed.

In her learning-facilitator role, Liz (F1) continually points out objects of interest, asks questions of her children, answers their questions and makes links to other activities the family have shared. Liz assists her children in understanding what they are looking at, while also discovering new insights into herself by following her childrens' interests and investigating deeper through reading texts, answering their questions and general discussion:

Tara. *What's in the liquid?*

Liz. [reading text] *"World's smallest vertebrate, an evolutionary one found in New Zealand". I can't even see it. … Oh look! That's the smallest vertebrate of a fish ever found! I don't know but it's a mean-looking one. Look at all those spikes.*

Tara,Paul. Wow.

Liz. *It's tiny! Look at this thing, you can see it through the end. No, that's it's vertebrae, which is it's spine.*

Tara. *It's absolutely tiny!*

Liz. *I know, so small and light that a million of them would only weigh one kilo.*

Tara. *Ohh.*

Liz. *Absolutely tiny. I wonder how they found it?*

Paul. *Or a million of them?!*

(Conversation Transcript F1, 27/09/2004)

In the next example, Kay (F3) uses her role as parent to call her son (Zeke) to her, then through questioning, linking and drawing on prior knowledge and experiences she encourages Zeke to identify an object for himself. Zeke also uses the tools provided in the exhibition (object and accompanying text) to reach an understanding of what he is looking at:

> ***Kay***. *Come and look at this. What is that? Where's that from Zeke?*
>
> *Zeke.* *Bali.*
>
> ***Kay***. *Yes, good boy.*
>
> *Zeke.* *I knew that.*
>
> ***Kay***. *How did you know that?*
>
> *Zeke.* *Because it has all these on it "Javanese and Balinese"* [reading from text] *in the second line. I'll tell you why I knew it was Balinese, because I saw those little gold things in Bali.*

(Conversation Transcript F3, 29/09/2004)

The Indonesian gamelan that Kay and Zeke are discussing is in Figure 6.5.

Figure 6.5. *Uncovered* exhibition: gamelan orchestra instrument display

Screven (1990; 1995) and Serrell (1996; 1998) have pointed out the importance of asking questions in texts. Stage Two demonstrated that questions are used by visitors to help manage the visit, to engage those in the group who are disinterested and as ways for groups to learn together:

Nat,Ally. [both shouting out] *Look at this, look at this.*

Jo. *Okay … you want to tell me what it is?*

Nat. *What do you think it is?*

Jo. *I don't know, but what do you think all those are?*

Ally. *Sticks.*

Jo. *Sticks?*

Ally. *Yeah, sticks.*

Jo. *Do you think they are sticks? Well, I'll read it to you and it says* [reading from text] *"It's feathers and fibre". So they're actually feathers.*

Nat. *Feathers?*

Ally. *C'mon, let's get a move along!*

(Conversation Transcript F2, 28/09/2004)

Bron. *Look at this one. Is it real?*

Kris. *Nah, it's not real, it's not real. Is it real?*

Bron. *I think so.*

Kris. [reads] *"Actual skin over plastic cast". Oh, sick, it's real skin!*

Bron. *Yeah but it looks fake, is it real? Should be real, huh? The eyes look fake.*

Kris. *But look how big this thing is!*

Bron. *Hmm.*

(Conversation Transcript C5, 30/09/2004)

These findings suggest that visitors' questions could be a good place to start when thinking about writing exhibition texts, with the Stage Two conversations containing many examples of using questions to keep the conversation flowing and sharing learning, discussed in the next section.

6.4.2 Sharing learning

Worts (1996) reflected on the social nature of identity, suggesting that collective identity was manifest in belonging to family, friends and community. Wenger (1998) stated that identity was a social phenomenon, with Kidd (2002) also identifying an important aspect of identity as group membership. Similar to Stage One, a strong theme that emerged from Stage Two was sharing learning with others, learning about each other and enjoying themselves at the same time. Evidence that visitors' share their knowledge and experiences has been found in numerous studies of museum learning (detailed in Chapter 2, Section 2.2.3), with sharing learning a particular feature of family visiting, yet less so in couples (McManus, 1987, 1988). However, Stage Two of this study also revealed many examples of sharing learning across the five couples sampled.

In their post-visit interview all three members of F5 (Cath, Bree and Ed) commented on the statement *I shared some of my knowledge with other people*. They remarked that they felt sharing was a way that *got them bonding* through imparting new information gained on things they already knew something about. Their conversations at several parts of the exhibition demonstrate sharing, for example:

Cath. *That's a gift to Captain Cook*. [reads text] *"A Hawaiian gift to Captain Cook" Move over sweetie.*

Bree. *Hang on, can I read it too? I'm really curious*. [reads text] *"The king of the tribe did ..."*

Ed. *Hang on let me read this.*

Cath. *They're feathers. That's feathers. Mad, you couldn't tell. By the backing, I'm sorry your head's in the shadow, I can't see when there's shadow. You've got to stand at a certain angle to be able to read it. Red feather, can you see the red feathers?*

Ed. *Yep.*

Bree. *Yellow feathers.*

Ed. *Yep.*

Cath. *Black feathers. Can you see black ones?*

Ed. *Where?*

Cath. *Hidden among the long bits.*

Ed. *Okay. This is cool.*

Cath. *You can see the black ones from the outside.*

Bree. *Very eye-catching. I would like one of these on my ring.*

(Conversation Transcript F5, 30/09/2004)

The transcript from Rick's group (C3) was full of examples of learning together through talking and sharing the expertise and knowledge of all group members:

Rick. *Hey Kate look at these ones, how's that for a shell?*

Kate. *That's an unusual one.*

Toni. *That's beautiful.*

Kate. *Were shells alive, are shells alive?*

Toni. *They've got things inside them.*

Rick. *Molluscs in them.*

Kate. *But are the actual shells alive?*

Rick. *No.*

Toni. *They're a shell.*

Rick. *I think the shell is the shell of the mollusc that originally lived in them, like a snail.*

Kate. *So they're part of something?*

Rick. *They're part of something that was, yes.*

(Conversation Transcript C3, 29/09/2004)

The showcase referred to in this SE is shown in Figure 6.6.

Figure 6.6. *Uncovered* exhibition: mollusc and shells showcase

Also in C3, Kate (the daughter) drew the group's attention to objects she found interesting and were relevant to their shared social experiences, with the other group members contributing to the conversation from their own perspectives:

Kate. *Are they stick insects?*

Toni. *Some of them are. That's at the end of* [names place on an island].

Kate. *Did we sail past that?*

Toni. *We didn't sail past that but we flew nearby. You could see it from the top of the mountain Daddy climbed. Look at the frogs. Look at the size of those. Not like our piddly little ones.*

Kate. *Like that small one?* [points]

Toni. *Ours would be like that.*

(Conversation Transcript C3, 29/09/2004)

McManus (1987; 1988), using taped conversations from uncued visitors, found that couples typically did not interact as much with each other in exhibitions as other groups. However, there were many examples of sharing learning through animated discussions across all five couples that participated in Stage Two:

Art. *Brown snake, now they're very deadly aren't they, brown snakes?*

Dot. *Yeah, well king browns are. Here's all your cicadas.*

Art. *Now they take years and years to come up from under the ground. Seven years or something. Where's the huntsman? I'm trying to see where it is.*

Dot. *There it is.*

Art. *Ooh,* [it's] *hidden a bit!*

(Conversation Transcript C2, 28/09/2004)

Fran. *Oh, look at this. Look at this Ted, x-rays.*

Ted. *… they're ugly looking creatures aren't they? They're sort of frightening.*

Fran. *They're frightening, yes. They're creepy. Ooh my goodness … Look at that. Is that a skeleton?*

Ted. *It's a bat* [reads text] *"Monkey-faced bats. Grey-headed flying fox". A flying fox.*

Fran. *They are pretty common aren't they, the flying fox?*

Ted. *Look at the length of that. You wouldn't want that flying at you would you!*

(Conversation Transcript C4, 30/09/2004)

Sharing learning can also be enjoyable (Dierking & Griffin, 2001; J. Griffin, 1998; Kelly et al., 2004; Packer & Ballantyne, 2002). Stage One found that learning and enjoyment were linked, and there were also several examples from Stage Two that demonstrate visitors having fun while learning:

Jules. *How do you say that? Quoll? Quoll?*

Tim. [reads text] "*Spotted Quoll"?*

Jules. *I don't like how they've got little cotton wool in their eyes!*

Tim. *Mmmm*

Jules. *Eoww – it's so gross!* [laughs]

(Conversation Transcript C1, 28/09/2004)

Art. *I can't get over the size of those flies.*

Dot. [reads title] *"Entomology".*

Art. *Ooh, cockroaches, yuck! Ooh!*

Dot. *I think I put my foot on one like that last night.*

Art. [laughs]

Dot. *Out in the backyard.*

(Conversation Transcript C2, 28/09/2004)

When sharing learning, Bron and Kris (C5) became excited and animated, enjoying what they were viewing:

Bron. *Walking sticks. Oh, hey, I saw real ones in Canada. Real ones like that. They're, like* [this] *stick in this box, and they really move.*

Kris. *No!*

Bron. *Yeah, they're like sticks, I've seen them, I've seen them. They look like sticks! It's amazing. They jump, it's really gross, they go "phht" like that, they're like grasshoppers.*

(Conversation Transcript C5, 30/09/2004)

6.4.3 Linking to prior, present and future life experiences

Stainton (2002) noted that visitors' engaged with exhibitions through the lens of their personal experiences and identity. Leinhardt, Tittle and Knutson (2002) found that participants in their study made personal meanings from the objects they were looking at and connected these to their own lives.

In Stage Two there were many examples of adults using objects they saw in the exhibition as triggers that linked to previous life events, often holidays and other "environmental" experiences:

> ***Rick***. *There's a crayfish, a yabby.*
>
> ***Toni***. *Oh yes.*
>
> ***Rick***. *We've seen yabbies walking across the ground. They actually walk across fields looking for water.*
>
> ***Edna***. *They have been down our drive. As a matter of fact, when Dad was alive, he took a couple to the pond in the golf course. But the kids used to bring them home from somewhere.*
>
> ***Toni***. *And they escaped?*
>
> ***Edna***. *Yes.*

(Conversation Transcript C3, 29/09/2004)

> *Bree.* *This makes you want to go under the sea and see how things actually live.*
>
> ***Cath***. *You know how you go on those boat trips with the glass bottoms up at the* [names place]. *It does, it really entices you to want to see more, even know more.*

(Conversation Transcript F5, 30/09/2004)

Jules. [reads text] *"Fossils"*

Tim. *Mum LOVES her fossils. It's pretty amazing.*

Jules. *I like fossils too. When we were at* [north coast NSW] *they had fossil rocks, and we would always go to the fossil rocks. Have a look at the plants that were fossilised. Look how clear that is … weird hey? I like it, it's cool.*

(Conversation Transcript C1, 28/09/2004)

Figure 6.7 shows the fossils showcase Tim and Jules refer to.

Figure 6.7. *Uncovered* exhibition: fossils showcase

The F5 group also reported how they would use information gained about seahorses from the exhibition during their next holiday to expand their understanding of these animals and show their knowledge off to others:

Ed. *Look at the seahorses.*

Cath. *Like the one in the salt water.*

Bree. *They're just so cute and they swim along.*

Ed. *I'd hate to be bitten by these fish, look at the teeth.*

Cath. *But they don't normally attack. … When we go to* [north coast NSW] *next week we should go and find the white seahorses. Wouldn't that be mad if we see one and we go "That's a white seahorse". The guy's going to just look at us* [and go] *"How do you know that?"!*

(Conversation Transcript F5, 30/09/2004)

The next SE demonstrates Fran and Ted relating what they are looking at to the seemingly unrelated topic of embroidery:

> ***Fran***. *Numbat. That's the one that was in that thing that I, the alphabet that I sewed. N was the numbat.*
>
> ***Ted***. *The embroidery?*
>
> ***Fran***. *Yes.*
>
> ***Ted***. *Is that just a smaller one of those? And the quoll was the Q.*
>
> ***Fran***. *Yes, the quoll was the Q, and the platypus was the P* [reads text] *"Spotted-tailed quoll, Taree, NSW".*

(Conversation Transcript C4, 30/09/2004)

The showcase that Fran and Ted are discussing is shown in Figure 6.8.

Figure 6.8. *Uncovered* exhibition: quoll showcase

In her post-visit interview Kay chose the statement *I remembered things I haven't thought of for awhile* as a way she learned in the exhibition, illustrated in the following SE:

> ***Kay***. *We used to collect those, we used to have shoeboxes full of those at Christmas time. You don't see as many around now do you?*
>
> *Mia.* *I have not seen* [any]*. What are they?*
>
> ***Kay***. *They're beetles, Christmas beetles.*

(Conversation Transcript F3, 29/09/2004)

Fran and Ted were also very interested in the beetles display, with Ted citing this exhibit as matching how he liked to learn through reminiscing about the past and making connections to today:

> ***Fran***. *Look at these beautiful green ones* [indicates showcase full of beetles].
>
> ***Ted***. *Mmm.*
>
> ***Fran***. *Their colour is incredible, the variety.*
>
> ***Ted***. *Yes, they look like our Christmas beetles that we hardly ever see these days, but when we were kids we used to get them. I think a lot of these fertilisers and weed killers and all the rest of it, they've probably wiped the damn things out.*

(Conversation Transcript C4, 30/09/2004)

The beetles showcase these groups refer to is shown in Figure 6.9.

Figure 6.9. *Uncovered* exhibition: beetles showcase

6.5 Reflections: adult museum visitors' learning identities

The method used in Stage Two demonstrated that adult museum visitors can learn more about the concept of learning as well as their own learning processes when encouraged to think about learning before they engage with an exhibition. It was found that sometimes the learning opportunities provided by museums match how an individual likes to learn, and sometimes they don't. The findings also suggest that visitors play three interchangeable roles in a visit—the visit manager, the museum expert and the learning-facilitator. Sharing learning and linking exhibition experiences to other life events are also key findings that emerged from Stage Two.

The next chapter discusses the findings and implications from both stages of the study, with suggestions made about ways to improve museum visiting experiences to better cater for the wide range of adult visitors' learning identities.

Chapter 7. Conclusion

This study examined adult museum visitors' learning identities through the following research question: What are the interrelationships between adult museum visitors' views of learning and their learning experiences at a museum? A key focus was on how adults describe learning, the place of learning in their lives and where museums were situated. Other areas examined included the relationship between learning, education and entertainment; how a Museum exhibition interacts with an adult visitors' learning identity; as well as the roles visitors play during a museum visit.

This chapter brings together the findings and implications from both stages of the study across four main areas of investigation. First, adult museum visitors' views of learning are outlined under the 6P model of museum learning in conjunction with implications for museum practices. Second, the ways learning, education and entertainment link together is presented. Then, the outcomes and implications from the methodology used in the study are discussed. The final section outlines conclusions about the interrelationships between museum learning experiences and adult visitors' learning identities.

7.1 How adult museum visitors describe learning: findings and implications

It has long been recognised that learning plays a central role in people's lives and is essential to our humanity (Bowen & Hobson, 1987; Claxton, 1999; Confucius, undated; Dewey, 1938; Senge, 1992). Learning is an individual and social process that humans are constantly engaged in, both consciously and unconsciously. Dewey (1938) also suggested that learning was:

- the capacity to act intelligently in new situations through exercising personal judgment
- the interplay and interaction of objective (external) and internal factors
- a transition between individuals and their current environment

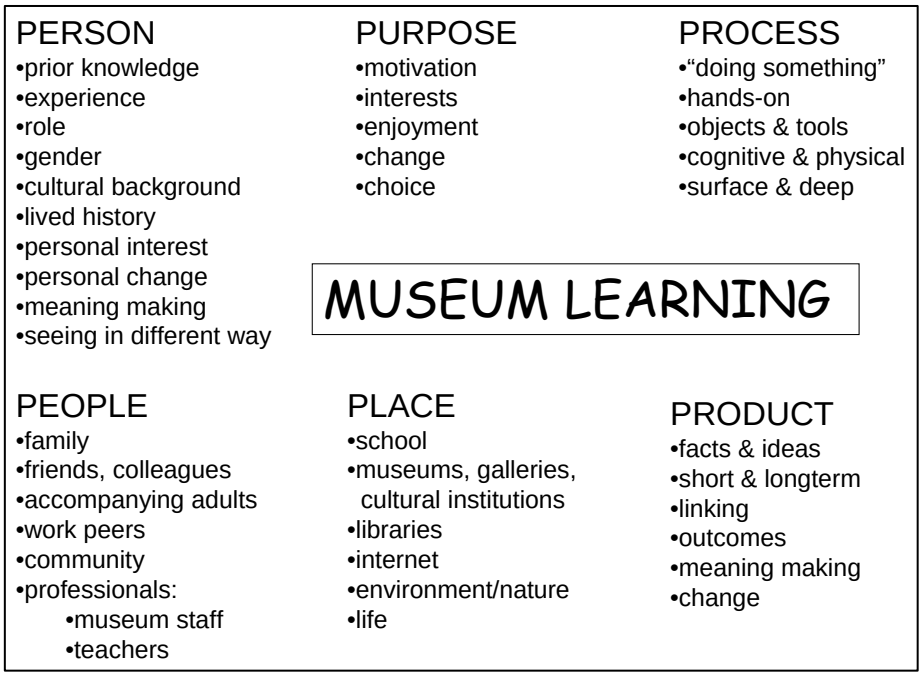
- a lifelong process of growth
- social—a shared common experience
- flexible, yet directed.

In the present study learning was seen as a complex, yet positive, process that occurs across a person's life. The data shows that learning is multi-faceted, involving meaning making; physical/hands-on learning; seeing something in a different way and choice. The role prior knowledge and personal interest play in learning was also acknowledged by participants. The importance of social learning—learning with, from and about others—was a particularly strong finding.

Learning is about change, and can often involve a major life-changing event (Falk & Dierking, 2002; Marton et al., 1993; Rennie & Johnston, 2004). This study found that participants viewed learning as the application of facts and information in a cognitive process of gathering information to gaining knowledge and changing in some way. Learning new facts was also seen as important, especially short snippets of information they could tell others about later. It was also found that significant changes in attitudes and values could occur when participants reflect on their exhibition experiences.

Many researchers have acknowledged that museum learning is a complex phenomenon (Falk & Dierking, 2000; Falk et al., 1995a; Hein, 1998; Hooper-Greenhill, 2004b; Rennie & Johnston, 2004; Schauble et al., 2002), with Pierroux (2003) encouraging museum researchers to consider '… what *else* counts as learning' (p.7, emphasis added). The findings from the present study suggest that museum learning can be framed under six interrelated categories—person, purpose, process, people, place and product—the *6P model of museum learning* (Figure 7.1, over the page). This model, while resonating with Falk and Dierking's Contextual Model of Learning (2000) described in Section 2.2.5, is derived from the findings of the present study. It presents a potentially powerful way to theorise and explain museum learning through the interrelationships between each of the six categories.

Figure 7.1. The 6P model of museum learning



The next sections outline the findings under the 6P model categories in conjunction with the implications of each for museums.

7.1.1 Person

The category of *person* relates to the individual learner, including prior knowledge, experience and lived history; cultural background and gender; as well as roles played at different times in a person's everyday life. The literature showed that visitors viewed exhibitions through the lens of their life experiences, often making connections with their own lives (Leinhardt & Gregg, 2002; Paris & Mercer, 2002; Stainton, 2002). The aspects of person demonstrated by participants in the present study were prior knowledge; learning that builds on what people already know; personal interest; personal change and seeing something in a different way; as well as meaning making.

Implications:

- Visitors will make their own meanings and construct their own narratives based on their experiences and interests.

As outlined in Chapter 6, Section 6.4.1, several museum learning researchers have discussed the variety of roles visitors played during a museum visit (Ash, 2002; Ellenbogen, 2002; Sedzielarz, 2003). Stage One of this study revealed that some participants (particularly mothers and grandmothers visiting with children) felt that their role was to support the learning of the children they accompanied to museums and other cultural institutions, rather than learn themselves. Stage Two investigated this idea further and found that adult visitors play three roles—the "visit manager" by directing and organising; the "museum expert" in explaining, clarifying and correcting; and the "learning-facilitator" through questioning, linking, reminiscing and wondering. These roles are interchangeable, occur simultaneously and are dependent on both the social context of the visit and the group composition, particularly the ages of any accompanying children.

Implications:

- Visitors play multiple roles at various times during the one visit.
- Acknowledge the different roles adults play during the visit through asking throughout the exhibition development process "What roles might a visitor be playing at this point?".

Dewey (1938) acknowledged that learning was active, and the present study found that participants recognise the importance of physical, active, hands-on learning experiences. It was also found that adult visitors want hands-on, rich and immersive experiences as much as younger visitors do.

Implications:

- Provide a range of interpretive experiences for visitors, including interactive ones, even in exhibitions specifically developed for adult audiences.

The role of prior knowledge and experience has been widely discussed in the literature (Dewey, 1938; Doering & Pekarik, 1996; Fienberg & Leinhardt, 2002; Hein, 1995; Paris, 1997a; Rennie & Johnston, 2004). The present study demonstrated that building on what a person already knows and providing information of interest to them was felt by participants to be important in their learning.

Implications:

- Visitors expect that learning will build on what they already know.
- Improve understandings of the variety of visitors' prior knowledge, experiences and interests through continual front-end evaluation.

One area under person that was less clear was the role that cultural background plays in learning. Although it has been recognised that learning and identity can be influenced by an individual's cultural background (Kidd, 2002; Ogbu, 1992; Paris & Mercer, 2002; Wenger, 1998), could this also influence how a person perceives the concept of learning and therefore how they learn?

Implications:

- Further research could be undertaken about views of learning across groups of culturally-diverse museum visitors.

7.1.2 Purpose

Doering and Pekarik (1996) proposed that visitors came to museums with rich and deep prior experiences—storylines or "entrance narratives"—that they drew on to make sense of their interactions. A study of visitor agendas and museum learning in the United States reported that people who visited museums valued learning, sought it in many ways and were usually better educated than the general population (Falk et al., 1998). In the 6P model *purpose* covers the motivations behind learning, including a person's general interests, enjoyment and fun and choosing learning.

Consistent with the literature (Dewey, 1916; J. Griffin, 1998; Griffin, 2004; Hein, 1998; Hein & Alexander, 1998; Paris, 1997a; Park, 1994; Taylor & Spencer, 1994) choice was seen by participants in this study as an important way of facilitating learning, especially when comparing learning with education. The differences seemed to lie in the word *teach* which was associated with being "talked to" or "told to do something" in an educational sense, and the word *learn* that was connected with personal choice.

Visitors in the present study also want choice in their exhibition experiences, again resonating with the museum learning literature (Griffin, 2004; Kelly et al., 2004; Leinhardt & Knutson, 2004; Paris, 1997a). It emerged that visitors' exercise their choices in how they behave in an exhibition; in what they focus on and discuss; as well as in what they learn. This finding also corroborates with those from many observation studies undertaken in museums (Beer, 1987; Hein, 1991; Screven, 1990; Serrell, 1998).

Implications:

- Give visitors choice and control over their museum experience and their learning through providing multiple pathways through an exhibition and a variety of interpretive experiences suitable for both individuals and groups.

7.1.3 Process

The literature recognised that people learn in many different ways (Cassels, 1992b; Dierking, 1989; Gardner, 1993; Schmeck, 1988). Leinhardt et al. (2003) suggested that museum learning was enhanced when visitors:

- had some prior knowledge and experience
- showed a deep engagement with the exhibition materials
- took part in conversations during their visit that included analysis and explanation.

In the 6P model the *process* category includes the numerous ways that learning happens. Across all samples learning as a general concept was expressed by participants as an everyday activity undertaken by all humans. Learning was also seen as a cognitive process, occurring inside a person's head, as well as a physical one. It was seen as a way of *acquiring and gathering something*, for example, information, skills or knowledge, and *doing something with it*, such as understanding, applying, expanding, discovering, assimilating, experiencing and exploring in order to reach an outcome, or end-product. Other words related to process that were raised by participants included accumulating, choosing, explaining, questioning, reminiscing and thinking.

Implications:

- Provide opportunities for visitors to engage in critical thinking and questioning, with exhibitions and texts that raise questions, point to some answers and addresses both facts and ideas.
- Present multiple points of view to enable visitors to reach their own conclusions and make their own meanings.
- Provide physical, active and lively hands-on experiences that engage the body as well as the mind.

This study found that visitors made connections from the exhibition to other areas of their lives based on shared experiences. Participants recognised the value of building on prior knowledge and experiences when museums addressed visitors' specific and general interests and also made the visit experience enjoyable and fun.

Implications:

- People visit museums to learn, to be educated and to be entertained:
    - in an exciting and stimulating environment
    - that is enjoyable for them and all members of their group.
- People are motivated to learn in museums and expect to do so.
- Museums need to make clear the relevance of the exhibition to visitors' learning goals.

7.1.4 People

The category of *people* covers the social aspects of learning. Research has consistently found that the social dimensions of a museum visit were important (Falk & Dierking, 2000; Leinhardt, Crowley et al., 2002; Paris, 2002; Paris & Mercer, 2002), and that sharing learning was a particular feature of family visiting (Anderson et al., 2002; Blud, 1990; Borun, 2002; Ellenbogen, 2002; Ellenbogen et al., 2004; Hilke, 1989; Kelly et al., 2004; McManus, 1994; Piscitelli & Weier, 2002).

Participants in the present study identified a broad and diverse range of people they learn with, including family, friends, colleagues and work peers, and professionals such as teachers, university lecturers and museum staff. The importance of peers (other students), teachers and university lecturers were more prominent in Stage Two, which could be due to participants' backgrounds (some were university students, older retired learners and teachers).

Implications:

- Museum visits are mediated experiences with knowledgeable others who facilitate discussion and sharing of opinions and understandings.
- Exhibition designs should facilitate the sharing of ideas and intellectual discourse across diverse groups of visitors.

The findings strongly support the views expressed in the literature about the significance of social learning. Stage Two, in particular, uncovered many examples of sharing learning across all ten groups studied. Other outcomes from Stage Two were that visitors link what they see in exhibitions to past, present and future life experiences through sharing these with each other. Many examples were found of adults using objects they saw in the exhibition as triggers related to previous life events, often holidays and other "environmental" experiences.

Implications:

- Provide opportunities for visitors to make links from the exhibition content to other areas of their lives.
- Use concrete examples of local and global environments when developing exhibitions based on animals and nature.

The role that accompanying adults played in facilitating learning has been reported in the literature (Falk & Dierking, 2000; Puchner et al., 2001; Sedzielarz, 2003). The present study revealed that the learner-facilitator role (described under *person*, Section 7.1.1) was also played by adults who visited with other adults. The findings demonstrate that adults accompanying children have special needs, both in the ways they perceive their roles (supporter of childrens' learning) and in the actual roles they play in a visit (visit manager and learner-facilitator).

Implications:

- Recognise that different people in the group play different roles, and some individuals play more than one role at any one time.
- Support the learning needs of adults and children especially in museums and/or exhibitions frequented by large numbers of intergenerational groups.
- Facilitate the learner-facilitator and visit-manager roles for adults accompanying children, for example:
    - Provide rest spaces throughout exhibitions where visitor management can take place, such as plenty of chairs, resting and eating spaces, as well as hands-on activities to manage distracted children.
    - Provide guides/texts with conversation suggestions and questions or information guides that detail the key messages of an exhibition.

McManus (1987; 1988) found that couples typically did not interact as much with each other as other groups, and that families observed read and discussed the content of labels (1991b). The present study found that both the families and the couples that participated spoke together a great deal and exhibited McManus's (1994) "hunter-gatherer" mode of visiting, actively "foraging" in the exhibition to find areas that interested them and coming together at various points to share their experiences. Across all ten groups evidence was also found of intense label-reading and speculating about content in their conversations.

Implications:

- Design exhibitions that encourage conversation and promote group interaction and group activities, but also allow for private reflection.

7.1.5 Place

It has been reported in the literature that people accessed museums as one of a wide range of information resources used when learning (Anderson, 1997; Crane et al., 1994; Ellenbogen, 2002; Falk & Dierking, 2000, 2002; Kelly, 2006; Rennie & Johnston, 2004; Sachatello-Sawyer & Fellenz, 2000). While participants in the present study stated that learning occurs across all aspects of their lives they did nominate specific *places* when asked about where they learn.

Libraries; museums, galleries and other cultural institutions; and universities were places more frequently cited by participants when talking about where learning happens. Other places named were schools; formal education courses; adult education providers; and the home (through television, movies and computer programs).

The study also found that adults regard museums as valuable sources of information and learning. Therefore, museums could capitalise on these views by clearly differentiating themselves from other informal learning providers.

Implications:

- As a large range of places are accessed when learning, museums could promote themselves as unique and accessible learning places where visitors can experience real objects and be together in an enjoyable, safe environment.
- Demonstrate how museums complement a range of both formal and informal learning environments such as school, university and libraries.

Stage One revealed that the internet was an important place where learning occurs. Many participants reported that the internet is the first place accessed when learning something new as it was fast, immediate, usually accurate and something that they controlled. Certain characteristics of the internet have the potential to change how people learn and therefore their expectations of museum learning experiences. These include the freedom to choose pathways through content, being user-controlled, opportunities for interactivity, and enabling the provision of up-to-date content that is easily changed in response to external events.

Implications:

- Conduct further research into the relationship between learning experiences provided through the internet and physical experiences offered by museums.
- Utilise the internet as an information resource to provide deeper layers of exhibition content accessible either on-site or off-site.
- Design activities and material that can be accessed online after a museum visit for further exploration at the learners' own pace and discretion.

7.1.6 Product

Several authors have discussed learning as a progression from lower-order to higher-order outcomes (Entwistle, 1997; Marton et al., 1993; Sachatello-Sawyer et al., 2002; van Rossum et al., 1985). Ramsden (1992) acknowledged that learning involved both deep and surface approaches, and that learners applied the most appropriate to each situation. As mentioned earlier, many authors have equated learning with change (Dewey, 1938; Falk & Dierking, 2002; Marton et al., 1993; Rennie & Johnston, 2004). The present study found that participants also strongly associate learning with change, both deep and surface, as well as *products* such as learning new facts and engaging with ideas. When reflecting on their museum experiences, participants in the study were able to express changes made to deeply-held attitudes, as well as thinking differently about concepts, ideas and their own learning processes.

It has been recognised that personal declarations of learning can be a useful way to understand visitor learning, but is somewhat under-utilised in museum learning research (Griffin et al., 2005). When asked, all those sampled in the present study could clearly state something they had learned from an exhibition—from "simple" facts or aesthetic appreciation; to deep change in attitudes, behaviours or self-perception. Participants also felt that learning new facts is important, as well as both asking questions and finding answers.

Implications:

- Recognise and reinforce that everyone learns in an exhibition.
- Use questions in text panels and interspersing short, quirky "did you know facts" throughout an exhibition, while also providing deeper layers of written content.

The exhibition used in Stage Two, *Uncovered: Treasures of the Australian Museum*, focussed on collections from the Australian Museum, Sydney. The data from the study suggest that visitors look for "why" and "how" information, as well as "what". Participants raised many questions about why museums collect objects, why they have so many specimens and how they are preserved, often using their museum expert role to speculate about these. However, it was shown

that sometimes their conclusions were inaccurate, or that visitors became frustrated when they couldn't find an answer easily.

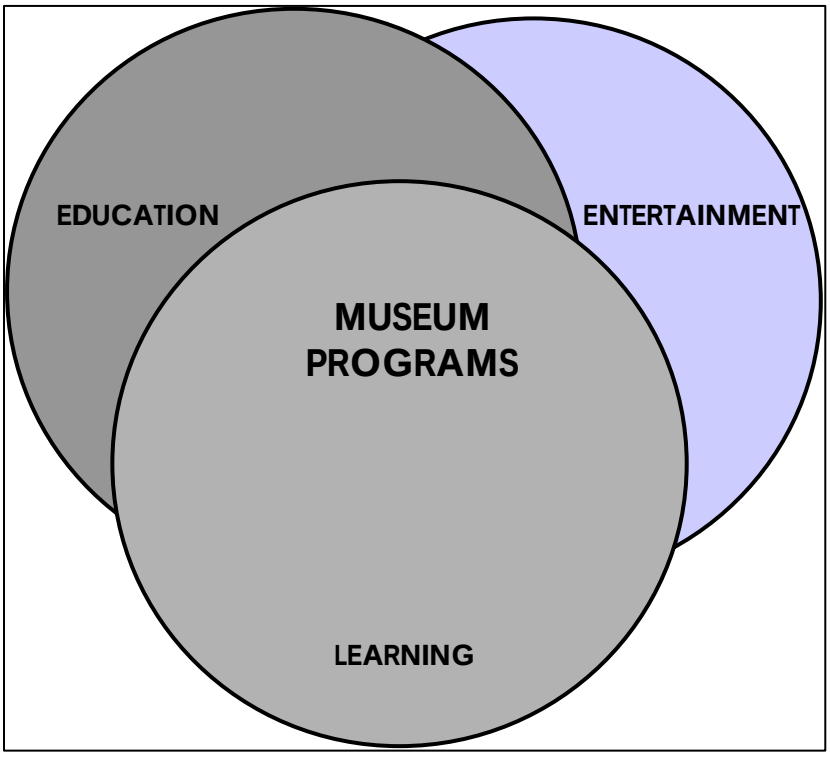
Implications:

- When presenting exhibitions based on their collections museums could:
    - provide information about how and why objects are collected
    - enable access to collection objects and other real material to actively use and manipulate
    - use objects that make an impact on visitors, particularly juxtaposing objects that are big and tiny; unusual and familiar; bizarre and everyday.

7.2 Learning in relation to education and entertainment

From data gathered in Stage One it is concluded that the concepts of learning, education and entertainment are closely linked in the museum environment (Figure 7.2).

Figure 7.2. Learning, education and entertainment



The literature review revealed that education was seen in negative ways, particularly when compared with learning (Combs, 1999; Hooper-Greenhill, 2003; Park, 1994; Taylor & Spencer, 1994). However, the data from the present study did not support these conclusions. Participants understand and appreciate the role that education plays across their learning lives and how it connects with learning. The literature also showed that the problem with the term education was in the perceived lack of choice it offered (Combs, 1999; Park, 1994). The data from the present study showed that education is seen as passive, and something done *to* a person, not *with* a person. Although, participants felt that education is similar to learning in gathering information, knowledge and skills, it is also associated with being told what to do by others and forced, not chosen. Participants viewed learning in more positive ways, understanding that there are many more possibilities for rich and deep outcomes based on choice, when compared with education.

Roberts (2001) and Combs (1999) suggested that entertainment was a passive process that was not necessarily personally enriching. Again, results from the present study do not support these ideas. Adult museum visitors describe entertainment in rich, sensory and active ways and appreciate that museums are entertaining as well as educational. Entertainment is a concept that incorporates fun, relaxing, pleasurable experiences that provide an escape from the everyday. Particular aspects of entertainment that relate to experiences museums offer include sensory, escapism, relaxation, choice and an activity undertaken in leisure time.

7.2.1 Implications: learning, education and entertainment

This study suggests that learning, entertainment and education are not competing concepts or opposites—they are complementary. Museums have a strong learning focus, with their educational role being one way to deliver formal museum programs, and entertainment representing the enjoyment, leisure, emotional and sensory aspects of a museum visit. In relation to the 6P model of museum learning described earlier, it is proposed that education is a *process* that happens within a defined *place*, that enables the delivery of formal *products* of

learning, grounded in sites such as schools, adult education courses and universities, as well as museums. Entertainment also occurs within a defined *place*, either real or imaginary, yet is *person*-centred—being sensory, escapist and relaxing. Learning, while it involves other people, is essentially an individual *process* that happens inside a person's head and at their own instigation, with a specific *purpose* and end-*products*. It is also *place*-oriented, occurring across a broad range of formal and informal contexts.

The challenge for museums is to combine these three concepts in ways that build on the positive aspects of each. Hooper-Greenhill (2003) recognised that the construct of "edutainment" used by Mintz (1994) had attempted to integrate the perceived separation between education and entertainment. The term edutainment has long been problematic for museum professionals and, based on the findings from the present study, is probably redundant—learning in museums is *both* entertaining and educational. This study provides data that supports views in the literature that museums should be thinking about learning in the broadest sense, rather than narrowly focussing on education. Museums need to be clear that they provide visitor-centered learning experiences, rather than "educational" or purely "scholarly" ones. Museums should also not be concerned about their entertainment value and role, as results from this study indicate that adult visitors feel that entertainment *adds* to learning, not detracts from it. Overall, museums could promote themselves as places for enjoyable and entertaining learning experiences.

7.3 Methodology implications

Chapter 1 identified that there was a potential problem when using the term "learning" with visitors as it could contain negative connotations or not be understood by them (Falk et al., 1995a; Prince, 1990), with Senge (1992) arguing that learning had '… lost its central meaning in contemporary usage' (p.13). Stage One revealed that participants initially found learning hard to describe, suggesting that methods need to be developed to give people the language in which to talk about learning as well as the space, both physical and conceptual, to facilitate the conversation.

One key outcome from the present study is that the method used in Stage Two demonstrates that participants could gain new insights into their learning identity when:

- they were asked to think about themselves as a learner *before* they visit an exhibition, and
- they then reflect on these views *after* their exhibition experience.

Therefore, when studying what visitors learn from an exhibition, it might be useful to ascertain what they think learning means and how they like to learn before discussing what they learned. The focus could be on how the exhibition experience may have impacted on a visitor's self-awareness and views about learning, not only on facts and messages learned. In contrast to what some authors have speculated (Falk, Dierking & Holland, 1995b; Pitman, 1999; Roberts, 2001) researchers can use the term "learning" with visitors as they don't see it as a negative concept or confuse it with education.

The methods used in this study generated a wide range of qualitative and quantitative data about learning identities within the sociocultural and museum contexts. Through implementing both open-ended questions and rating scales in Stage One a range of data were gathered about what adults think learning is, where it fits in their lives and the roles museums play in learning. In Stage Two taping visitors' conversations coupled with a pre-visit and post-visit interview

and observations were useful ways of gaining insights into how visitors adapt and shape their experiences to match their learning identity, and the impacts of their exhibition experience on their learning identity. One interesting finding was that by discussing their ideas about learning before and after visiting an exhibition, participant's views about how they did *not* want to learn were strongly reinforced.

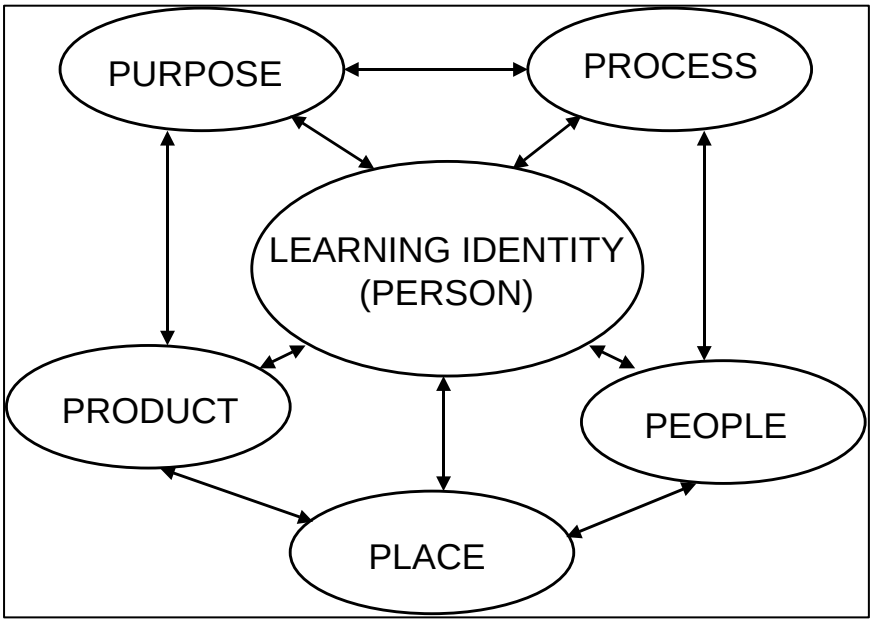
7.4 Learning identity implications

As discussed in Chapter 2, identity is how a person sees themselves in relation to their world and their role in it. Identity is fluid, changes across a person's life cycle and is shaped by the social context and membership of a community, (Kidd, 2002; Vander Zanden & Pace, 1984; Wenger, 1998). It is also an integral part of a person's personality and how others perceive them (Paris et al., 2001). Identity is comprised of a range of factors such as age, gender, cultural background, socioeconomic status, as well as general life experience (Fienberg & Leinhardt, 2002). Identity not only influences who a person is now, but also how a person behaves and conceives themselves in the future (Sfard & Prusak, 2005). Wenger (1998) stated that membership of a social community was a key influencer in defining a person's identity. Stage Two found that the social community of visitors impacts on the multiple roles adults play in the visit.

The literature identified that identity can be influenced by visitors' interactions with museum objects (Callanan et al., 2002; Gurian, 1999). Paris and Mercer (2002) noted that visitors recalled and responded to objects in exhibitions that resonated with their personal identities. The present study found many examples of visitors relating objects they were seeing to other shared experiences and using objects to recall experiences that were meaningful to them and to their group. Worts (1996) suggested that individuals have two kinds of identity—*personal* which made an individual unique, and *collective* in what types of groups they belong to. The present study found similar results to Worts—although sharing was important through linking to past, present and future experiences (collective), there were still defined roles for an individual (personal).

Sfard and Prusak (2005) proposed that learning was an integral part of a person's identity. This study suggests that an individual's learning identity is the link that connects each element of the 6P model, as illustrated in Figure 7.3.

Figure 7.3. Learning identity



In a museum visit learning identity is expressed through a combination of:

1. *person*: their life experience, the roles they play, as well as age and gender
2. *purpose*: why they visited
3. *process*: the ways they learn as well as the objects and interpretive tools such as texts, film and interactives provided in an exhibition
4. *people*: the visiting group
5. *place*: linking back to prior experiences such as group holidays and travel, social occasions and the natural environment
6. *product*: the outcomes of their learning.

Educational psychologists have mentioned how enduring a person's identity can be over time (Atchley, 1989; Vander Zanden & Pace, 1984). Examples from Stage Two demonstrate that learning identity is enduring for some people and not others—it ebbs and flows depending on the sociocultural context of the museum visit. Leinhardt and Knutson (2004) suggested that identity was participatory and

changed in response to a museum visit, which is supported by results from this study. In Stage Two it was found that participants gained insights into their learning identity in three ways, with the exhibition experience:

1. *Influencing* their learning identity through identifying new ways that they learn from their exhibition experience or becoming more confident in their learning.
2. *Resonating* with, or matching, their learning identity.
3. *Conflicting* with their learning identity, reinforcing in their minds the ways they do not like to learn.

Both Paris (1997b) and Morrissey (2002) noted that visitors learned more about themselves and others through their museum experiences. The present study found that adults who participated in Stage Two were aware of how they like to learn, how they can learn differently, as well as how they do *not* want to learn and were adept at articulating their learning preferences. It also emerged that participants in both stages of the study want museum learning experiences that are both educational and entertaining.

7.5 Conclusion

Museum learning is a dynamic process involving both the individual and the social and physical context. The findings from this study imply that museum learning experiences are enhanced through giving attention to the learner's needs and the multiple roles they play in a visit; the social context of the visit; the objects and tools the museum provides; and the interpretive approaches employed within the 6P framework of person, purpose, process, people, place and product. However, further investigation is needed to test the applicability of the 6P model across a range of museum programs, as well as in museum learning research.

The method used in the present study revealed that visitors could learn more about the concept of learning as well as their own learning processes—likes, dislikes, preferred strategies—if they are encouraged to think about themselves as a learner before they engage with an exhibition. Overall, it is concluded that

museum experiences can impact on adult visitors' learning identities. When given the opportunity to articulate their personal views about learning, adult museum visitors demonstrate wide-ranging and deep understandings of themselves as learners, which are subsequently shaped by the sociocultural context of the museum in conjunction with the multiple roles they play during a visit. However, the method used in Stage Two could also be further tested across a broader range of audience types, such as school students, children, multigenerational visitor groups, and those from culturally-diverse backgrounds; as well as different types of exhibitions and programs.

Rounds (2006) proposed that visitors used museums for "identity work", trying out different identities and testing new ideas in a relatively safe environment. Rounds felt that a useful focus for museum research should be on what visitors were "doing about" their identity. The present study researched adult visitors' identities in relation to how they think about learning; the roles they play in a visit; how they share their learning; and the links they make with prior, current and future life experiences. It was found that the ways visitors see themselves as learners is fluid and changes in response to a range of factors both within and outside of their control and their consciousness. It is concluded that an adult museum visitor's learning identity is both *integral*, a part of themselves, and *derivative*, influenced by the sociocultural context of the museum.

List of Appendices

Appendix 1. Stage One consent form

Faculty of Education
Teacher Education Program

PO Box 222
Lindfield NSW 2070
Australia

Tel. +61 2 9514 5621
Fax +61 2 9514 5556
E-mail teached.office@uts.edu.au
I'net http://www.education.uts.edu.au/

University of Technology, Sydney

UNIVERSITY OF TECHNOLOGY, SYDNEY
STUDENT RESEARCH CONSENT FORM

I _____ *(name)* agree to participate in the research project *Understanding museum learning from the visitors' perspective* being conducted by Lynda Kelly, Masters of Education student at the University of Technology, Sydney.

I understand that the purpose of this study is to understand how visitors to museums describe what learning means to them.

I understand that my participation in this research will involve up to forty five minutes of my time and that my interview will be audio taped, transcribed and analysed by the student.

I am aware that I can contact Lynda Kelly (ph: 9320 6413) or her supervisor Janette Griffin (ph: 9514 5474) if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish and without giving a reason.

I agree that Lynda Kelly has answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published in a form that does not identify me in any way.

_____ ___/___/___
Signed by

_____ ___/___/___
Witnessed by

NOTE:
This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer, Ms Susanna Davis (ph: 9514 1279). Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

Office Kuring-gai campus, Eton Road, Lindfield, Sydney NSW
Campuses City, Kuring-gai, St Leonards

Appendix 2. Stage Two consent form

Faculty of Education
Teacher Education Program

PO Box 222
Lindfield NSW 2070
Australia

Tel. +61 2 9514 5621
Fax +61 2 9514 5556
E-mail teached.office@uts.edu.au
I'net http://www.education.uts.edu.au/

University of Technology, Sydney

UNIVERSITY OF TECHNOLOGY, SYDNEY
STUDENT RESEARCH CONSENT FORM

I _____ *(name)* agree to participate in the research project *Visitors and learners: investigating museum visitors' learning identities* being conducted by Lynda Kelly, Doctor of Education student at the University of Technology, Sydney.

I understand that the purpose of this study is to understand how visitors to museums describe what learning means to them, how they see themselves as a learner and how a visit to an exhibition may influence this.

I understand that my participation in this research will involve up to one hour of my time, and that my museum visit will be audio taped, transcribed and analysed by the student.

I am aware that I can contact Lynda Kelly (ph: 9320 6413) or her supervisor Janette Griffin (ph: 9514 5474) if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish and without giving a reason.

I agree that Lynda Kelly and her research assistant have answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published in a form that does not identify me in any way.

_____ ___/___/___
Signed by

_____ ___/___/___
Witnessed by

NOTE:
This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer, Ms Susanna Davis (ph: 9514 1279). Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

Office Kuring-gai campus, Eton Road, Lindfield, Sydney NSW
Campuses City, Kuring-gai, St Leonards

Appendix 3. Ethics approval letters

PO Box 123
Broadway NSW 2007
Australia

Tel. +61 2 9514 2000
Fax +61 2 9514 1551

University of Technology, Sydney

17 March, 2000

Dr Janette Griffin
Faculty of Education
KURING-GAI CAMPUS

Dear Janette

UTS HREC 00/06 - GRIFFIN, Dr Janette, WALKER, Dr Kim (for KELLY, Ms Linda - M Ed student) - "Museums as places of learning"

The Committee considered the above application at its meeting of 14 March 2000 and has approved it, with the proviso that Ms Kelly provide further information before commencing Stage 2 of her research. She will need to provide a copy of the questionnaire, as well as details of the target population.

Your approval number is UTS HREC 2000/06A.

The NHMRC guidelines require us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. The attached report form must be completed at least annually, and at the end of the project (if it takes more than a year), or in the event of any changes to the research as referred to above, in which case the Research Ethics Officer should be contacted beforehand.

I also refer you to the AVCC guidelines relating to the storage of data. The University requires that, wherever possible, original research data be stored in the academic unit in which they were generated. Should you submit any manuscript for publication, you will need to complete the attached *Statement of Authorship, Location of Data, Conflict of Interest* form, which should be retained in the School, Faculty or Centre, in a place determined by the Dean or Director.

Please complete the attached (green) report form at the appropriate time and return to Susanna Davis, Research Ethics Officer, Research Office, Broadway. In the meantime, if you have any queries please do not hesitate to contact either Susanna or myself.

Yours sincerely,

Professor Ashley Craig
Chair
UTS Human Research Ethics Committee

Office City campus, No.1 Broadway, Sydney NSW
Campuses City, Kuring-gai, St Leonards

Research & Development Office

Director
Stephan J Wellink

PO Box 123
Broadway NSW 2007
Australia

Tel. +61 2 9514 1256
Fax +61 2 9514 1244

University of Technology, Sydney

26 August 2002

Dr Janette Griffin
Faculty of Education
Kuring-gai Campus

Dear Janette

UTS HREC 00/06 - GRIFFIN, Dr Janette, WALKER, Dr Kim (for KELLY, Ms Linda - M Ed student) – "Museums as places of learning"

The UTS Human Research Ethics Committee considered your request for an amendment to the above application at its meeting of 13 August 2002. The Committee approved your request to amend the above research by:

1. noting that Ms Kelly's upgraded her degree from a Masters of Education (Honours) to a PhD;
2. extending the research to a further group of eight to ten adults aged twenty-five who have visited a museum in the past twelve months;
3. recruiting participants via a market research recruiting company rather than through Museum databases; and
4. asking participants to visit two cultural venues in Sydney (one being the Australian Museum) with different social groups. Participants will be provided with free entry passes and discount parking, as well as disposable cameras to make a record of their visit to stimulate later discussions.

If you wish to make any further changes to your research, please contact the Research Ethics Officer, Ms Susanna Davis, immediately.

In the meantime I take this opportunity to wish you well with the remainder of your research.

Yours sincerely,

S. Davis

Associate Professor Jane Stein-Parbury
Chair
UTS Human Research Ethics Committee

Office City campus, No 1 Broadway, Sydney NSW
Campuses City, Kuring-gai, St Leonards

Appendix 4. Stage One participant information sheet

[Note: this information is being collected for record keeping purposes only. No individual will be identified in the final analysis]

1. Do you have children?

☐ No

☐ Yes (answer next question)

1a. If yes, please list gender/ages:

2. What is your highest level of formal education qualifications?

☐ Primary

☐ Secondary

☐ TAFE

☐ University/College

☐ Post graduate

3. Which of the following categories best describes your occupation:

☐ Professional

☐ Trade/operational

☐ Clerical

☐ Managerial

☐ Self-employed

☐ Retired

☐ Home duties

☐ Not employed

☐ Student

☐ Other

4. Were you born in:

☐ Australia

☐ Overseas English-speaking country (answer next question)

☐ Overseas non-English speaking country (answer next question)

4a. If born overseas how many years have you lived in Australia?

☐ less than 5 years

☐ 5-10 years

☐ 11-20 years

☐ more than 20 years

5. When did you last visit the Australian Museum?

☐ within the past 6 months

☐ in past 6-12 months

☐ more than a year ago

6. What other museums, galleries, etc have you visited in the past twelve months?

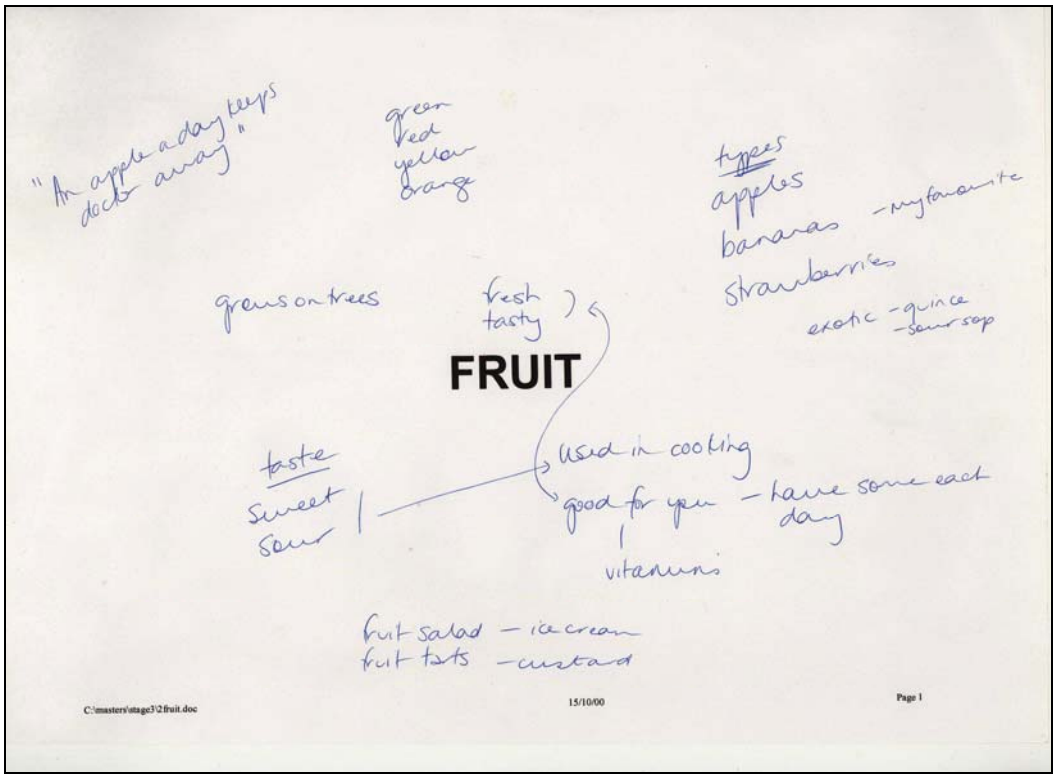
_____

7. Your age: _____

8. Your name and contact number (OPTIONAL: in case I need to follow-up with you):

_____

Appendix 5. Example learning diagram ("fruit")



Appendix 6. Stage One interview guide

	THEME	**TOPIC/QUESTION**
	INTRODUCTION	Introduce research Reinforce privacy aspects: sign consent form Answer any questions about scope of project Complete consent letter and data form
A.	DESCRIBING LEARNING [LEARNING SHEET: BLUE PEN]	I'd like to talk to you about learning. What comes to mind when you hear the word *learning*? Using this sheet I would like you to write words or phrases that you associate with learning. I have completed one about fruit to show you what I mean (talk through the concept map approach) Prompts [working through what they write on the sheet]: Tell me more about ….. What do you mean by ….. Can you explain ….. Why did …. come to mind? Can you tell me why you wrote ….. Does learning happen by yourself or with others? Is it enjoyable? Do you choose to learn? Where does learning happen?
B.	HOW THEY LEARN	Think about something that really interests you – it could be a hobby, perhaps a particular topic of interest to you. How would you go about learning how to do this or finding out more?
C.	MUSEUM EXPERIENCES	Tell me about your most recent visit to the Australian Museum. Prompts: Who did you visit with? What did you see (exhibitions, objects, etc)? What did you do (look, read, touch, play games)? What do you remember thinking about afterwards? Do you think you learned anything? Did it match how you like to learn? (Also refer to words they've noted on their concept map)
D.	ATTITUDES TO CONCEPTS [SEMANTIC DIFFERENTIAL SHEET] [LEARNING SHEET: RED PEN]	How do you feel about each of these subjects/concepts? Imagine each line as a continuum, place an X on one of the five lines between each word pair where you think the subject best fits. It's best to work quickly. Looking at the last, museum, I'd like you to think about how you'd like museum to be compared to what it is now – are there differences? (NB Cover up first museum answer) Going back to the original sheet I gave you on learning : After our chat is there now anything you would like to add?

Appendix 7. Stage One individual analysis example

A. Stephen's view of learning

For Stephen, learning means both fun and pressure and starts at school. Looking back at his school learning Stephen realises that although it was a pressure situation through needing to pass exams, etc, he remembers it essentially as a fun time. Stephen differentiates learning as an adult, seeing it as fun because you can choose what you learn and how based on your own needs and interests: … *now I'm older I can choose and there's no really pressure and that's why it's fun.* Stephen believes that you learn from everyone in everyday situations, with early family experiences playing a key role in development going beyond learning to …*a view of life*.

Stephen likes to learn through using computers, books or the internet. Stephen believes that people are also important in learning because …*you learn everyday something from other people around you…everyday I'm learning for them, but I teach them a lot as well, that's why the interaction is important to me…you learn from everyone, everyday.* In the semantic scale Stephen rated learning as something essentially undertaken alone, and education undertaken both alone and with others.

Stephen's first way of learning about a new topic is through the Internet, followed by library books and encyclopedias, and also talking to others such as colleagues or specialists. For Stephen interest plays an important role – once you become interested in something then you tend to notice more about it and seek it out either consciously or unconsciously: …*it's funny actually that once you're interested in a subject it's just there…before you never noticed it, where all of a sudden you are looking for it and so you find it.*

B. Museum Learning Experiences

Stephen most recently visited the Australian Museum's *Australia's Lost Kingdoms* exhibition with a group of three adults and two children across a broad age range. Stephen sees museum learning as getting new information in ways that are fun, active and lively. In this case, Stephen talked about new information gained after the visit regarding cloning/DNA, which made him think further through these issues and whether it was a good thing or not to form his own opinion.

Stephen remembered active experiences that he had at the Museum, such as the fossil dig and using computer interactives in ways that were fun, with the learning that resulted coming from actively doing things in your own way, especially for the children he was observing: *When they've got it in their hands it's theirs*. He also remembered and enjoyed the humorous and surprising aspects of the Skeletons exhibition.

Stephen also reported learning things about Australia's Indigenous people that he didn't know before, especially individuals who were presented in the exhibition as positive role models. This led him to reflect on the stereotyped images of Indigenous people that are often portrayed by the media …*normally in the media you see the original Aboriginal in their old clothes…you never in the media see a smart Aboriginal or Islander…So in the end you actually saw some people who did make a change, did make a difference in their cultures and that was nice and good to see actually*.

In his rating scales Stephen felt that the ideal museum could be more active, informal, lively and fun, with a combination of facts and ideas being presented. He wanted them to be something you do with others, but also alone, less structured, formal and passive. Stephen felt quite strongly that museums are places for learning: *I think learning definitely links to a museum.*

C. Learning, Education and Entertainment

Stephen believes that learning is fun, an everyday occurrence that happens everywhere, especially from others. It is something that never ends: *It's a very natural process*. It is active, lively, about facts and ideas and tends to be done alone, even though he does believe that learning from others is very important. Education on the other hand is different to learning because …*education is more given to you*, it is structured, formal, passive and imposed, something that can be done both alone or with others and is about facts.

Entertainment was seen as a vastly different concept to both education and learning—it is unstructured, informal, easy, active and done with others being about ideas, rather than facts.

Appendix 8. Stage One questionnaire

The University of Technology, Sydney is conducting some research with visitors in conjunction with the Museum. I would like to ask you a few questions which will take about fifteen minutes.

1. Thinking about museums and galleries. About how many visits, including this one today, do you think you yourself made to museums and galleries in the past 12 months? (prompt – one visit a year, 2 visits a year. Do NOT read out but mark what they say)

One visit in the past year……..1
2-3 visits in the past year……2
4-5 visits in the past year……..3
more than 5 visits in the past year…4

Turning now to some general ideas.

2. Could you please describe in your own words what you think ***learning*** is?

_____

3. Could you please describe in your own words what you think ***education*** is?

_____

4. Could you please describe in your own words what you think ***entertainment*** is?

_____

5. Thinking about learning in particular, would you please read each of the statements and indicate the importance of each to you as a learner.
(NOTE: STATEMENTS WERE SHOWN ON CARD)

1= Not important **2= Slightly important** **3= Moderately important**
4= Important **5= Very important** **n/a= not applicable**

A. Learning in a physical, 'hands-on' way.	1	2	3	4	5	n/a
B. Learning when the information provided is of immediate interest to me.	1	2	3	4	5	n/a
C. Learning that builds on what I already know.	1	2	3	4	5	n/a
D. Learning that specifically fits with how I like to learn.	1	2	3	4	5	n/a
E. Teacher-led learning at school/other formal place.	1	2	3	4	5	n/a
F. Being told what to learn.	1	2	3	4	5	n/a
G. Constructing meaning based on my own experiences.	1	2	3	4	5	n/a
H. Changing how I see myself.	1	2	3	4	5	n/a
I. Seeing something in a different way.	1	2	3	4	5	n/a
J. Learning with and through others.	1	2	3	4	5	n/a
K. Learning new facts.	1	2	3	4	5	n/a

6. There are many resources that people use when learning something new. How important is each of these to you personally when learning something new (Prompt: a new subject of interest, a hobby, a new skill).
(NOTE: STATEMENTS WERE SHOWN ON A CARD)

1= Not important **2= Slightly important** **3= Moderately important**
4= Important **5= Very important** **n/a= not applicable**

A. Internet/websites	1	2	3	4	5	n/a
B. Other people – family, friends	1	2	3	4	5	n/a
C. Books/library	1	2	3	4	5	n/a
D. Work colleagues/peers	1	2	3	4	5	n/a
E. Television programs	1	2	3	4	5	n/a
F. Computer programs, CD-ROMs	1	2	3	4	5	n/a
G. Adult education courses	1	2	3	4	5	n/a
H. Universities, formal education courses	1	2	3	4	5	n/a
I. Museums, galleries, other cultural institutions	1	2	3	4	5	n/a

7. How do you feel about each of these subjects/ concepts? [HANDOUT SHEET 1 AND PEN] Working quickly place an X on one of the seven lines between each word pair that best represents your attitude.

To ensure that we have spoken to representative sample of people we need the following details.

Where do you normally live? Sydney.....1
Newcastle/Canberra/Wollongong…….....2
Other NSW.....…….3
Interstate.....……4
Overseas.....……5 **[GO TO Q10]**

9. Were you born in Australia……1
Overseas English speaking country……2 **[GO TO Q9a]**
Overseas non-English speaking country……3 **[GO TO Q9a]**

9a. If born overseas, how many years have you lived in Australia? less than 5…….1
5-10……...2
11-20…….3
more than 20…….4

10. When did you last visit the Australian Museum? in the past year.....1 **[GO TO Q10a]**
in the past 2 years.....……2
in the past 5 years.....……3
more than 5 years ago.....……4
this is my first visit.....……5

10a. If you visited the Museum in the past year, how many times have you visited?
once before.....….1
twice before.....….2
3 or more times.....….3

11. Who did you come to the Museum with today? by myself.....1
with my family.....…2
with friends.....…3
with family & friends.....…4
with spouse/partner.....5
part of tour group.....6

12. Please indicate which age bracket applies to you:

14-24 years.....1
25-34 years.....2
35 - 49 years.....3
50-64 years.....4
65+.....5

13. What is your highest level of formal educational qualifications?

primary.....…..1
secondary.....……2
TAFE.....……3
university/college...……..4
post graduate.....……5

14. Which of the following best describes your usual occupation:

Professional.....……1
Home duties.....……..2
Managerial.....….3
Self-employed...…….4
Education.....……5
Trade.....…….6
Student.....……7
Other.....…….8

15. Any other comments?

16. Note Gender M / F

THANK THEM FOR THEIR TIME

DATE: DAY: TIME:

SHEET 1. SEMANTIC DIFFERENTIAL SCALE

How do you feel about each of these subjects/concepts? Imagining each line as a continuum, place an **X** on one of the lines between each word pair where you think the subject best fits. The first is an example to help get you started.

← cooking →

structured	____	____	____	____	____	__X_	____	unstructured
formal	____	____	____	____	____	____	__X_	informal
active	__X_	____	____	____	____	____	____	passive
hard	____	____	____	__X_	____	____	____	easy
fun	__X_	____	____	____	____	____	____	boring
chosen	____	____	__X_	____	____	____	____	imposed
dull	____	____	__X_	____	____	____	____	lively
useless	____	____	____	____	____	____	__X_	useful
alone	____	____	____	__X_	____	____	____	with others
facts	____	____	____	____	____	____	__X_	ideas

← national park →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← theme park →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← learning →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← art gallery →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← education →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← internet →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← school →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← library →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← entertainment →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

← museum →

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

PLEASE STOP HERE UNTIL FURTHER INSTRUCTED

← museum →

(HOW WOULD YOU LIKE IT TO BE?)

structured	____	____	____	____	____	____	____	unstructured
formal	____	____	____	____	____	____	____	informal
active	____	____	____	____	____	____	____	passive
hard	____	____	____	____	____	____	____	easy
fun	____	____	____	____	____	____	____	boring
chosen	____	____	____	____	____	____	____	imposed
dull	____	____	____	____	____	____	____	lively
useless	____	____	____	____	____	____	____	useful
alone	____	____	____	____	____	____	____	with others
facts	____	____	____	____	____	____	____	ideas

Appendix 9. Stage Two interview questions

NAME: _____ DATE/TIME: _____/_____

GROUP DETAILS: _____ GENDER: M / F

SIGN CONSENT FORM

PRE-VISIT INTERVIEW

1. Thinking about museums and galleries. About how many visits, including this one today, do you think you yourself made to museums and galleries in the past 12 months? (prompt – one visit a year, 2 visits a year. Do NOT read out but mark what they say)

One visit in the past year……1
2-3 visits in the past year……2
4-5 visits in the past year……..3
more than 5 visits in the past year…….……..4

2. Could you please describe in your own words what you think ***learning*** is?

_____

3. Thinking about yourself as a learner, how do **you** personally like to learn things?

_____

4. Now thinking more particularly about learning, would you please read each of the statements and indicate the importance of each to you as a learner.
(NOTE: STATEMENTS WERE SHOWN ON A CARD)

1= Not important **2= Slightly important** **3= Moderately important**
4= Important **5= Very important** **n/a= not applicable**

A. Learning in a physical, 'hands-on' way.	1	2	3	4	5	n/a
B. Learning when the information provided is of immediate interest to me.	1	2	3	4	5	n/a
C. Learning that builds on what I already know.	1	2	3	4	5	n/a
D. Learning that specifically fits with how I like to learn.	1	2	3	4	5	n/a
E. Teacher-led learning at school/other formal place.	1	2	3	4	5	n/a
F. Being told what to learn.	1	2	3	4	5	n/a
G. Constructing meaning based on my own experiences.	1	2	3	4	5	n/a
H. Changing how I see myself.	1	2	3	4	5	n/a
I. Seeing something in a different way.	1	2	3	4	5	n/a
J. Learning with and through others.	1	2	3	4	5	n/a
K. Learning new facts.	1	2	3	4	5	n/a

5. There are many resources that people use when learning something new. How important is each of these to you personally when learning something new (Prompt: a new subject of interest, a hobby, a new skill).
(NOTE: STATEMENTS WERE SHOWN ON A CARD)

1= Not important **2= Slightly important** **3= Moderately important**
4= Important **5= Very important** **n/a= not applicable**

A. Internet/websites	1	2	3	4	5	n/a
B. Other people – family, friends	1	2	3	4	5	n/a
C. Books/library	1	2	3	4	5	n/a
D. Work colleagues/peers	1	2	3	4	5	n/a
E. Television programs	1	2	3	4	5	n/a
F. Computer programs, CD-ROMs	1	2	3	4	5	n/a
G. Adult education courses	1	2	3	4	5	n/a
H. Universities, formal education courses	1	2	3	4	5	n/a
I. Museums, galleries, other cultural institutions	1	2	3	4	5	n/a

STOP HERE AND PROCEED TO EXHIBITION

POST-VISIT INTERVIEW

6. Thinking now about the *Uncovered* exhibition, what do you think are the main messages that this exhibition is trying to communicate?

_____

_____

7. Can you think of one thing that you found particularly interesting in the exhibition that you would be likely to tell other people about?

_____

8. Turning now to learning in the exhibition. People learn things in different ways. For each way that I read out, please say whether or not you learnt anything in this way during your visit to *Uncovered* today.
(NOTE: STATEMENTS WERE SHOWN ON A CARD)

	Yes/ a lot	Yes / somewhat	No / not really	Not at all	Don't know
A. I discovered things I didn't know	4	3	2	1	0
B. I learned more about things I already knew	4	3	2	1	0
C. I remembered things I hadn't thought of for awhile	4	3	2	1	0
D. I shared some of my knowledge with other people	4	3	2	1	0
E. I got curious about finding out more about some things	4	3	2	1	0
F. I was reminded of the importance of some issues	4	3	2	1	0
G. I got a real buzz out of what I learned	4	3	2	1	0
H. It was pleasant to be reminded and to learn more	4	3	2	1	0
I. It was all very familiar to me	4	3	2	1	0
J. Some of the things I learned will be very useful to me	4	3	2	1	0

9. And finally thinking back to how **you** like to learn (question 3) how did you think the *Uncovered* exhibition fitted (or not) with what you said about yourself as a learner?

_____

_____

DEMOGRAPHIC INFORMATION

10. Were you born in Australia…….……1
Overseas English speaking country…….....2 **[GO TO Q10a]**
Overseas non-English speaking country……..3 **[GO TO Q10a]**

10a. If born overseas, how many years have you lived in Australia? less than 5…….1
5-10……...2
11-20…….3
more than 20…….4

11. When did you last visit the Australian Museum? in the past year.....1 **[GO TO Q11a]**
in the past 2 years.....……2
in the past 5 years.....……3
more than 5 years ago.....……4
this is my first visit.....……5

11a. If you visited the Museum in the past year, how many times have you visited?
once before.....….1
twice before.....….2
3 or more times.....….3

12. What is your year of birth? _____

13. What is your highest level of formal educational qualifications? primary.....…..1
secondary.....…..2
TAFE.....….3
university/college...…4
post graduate.....….5

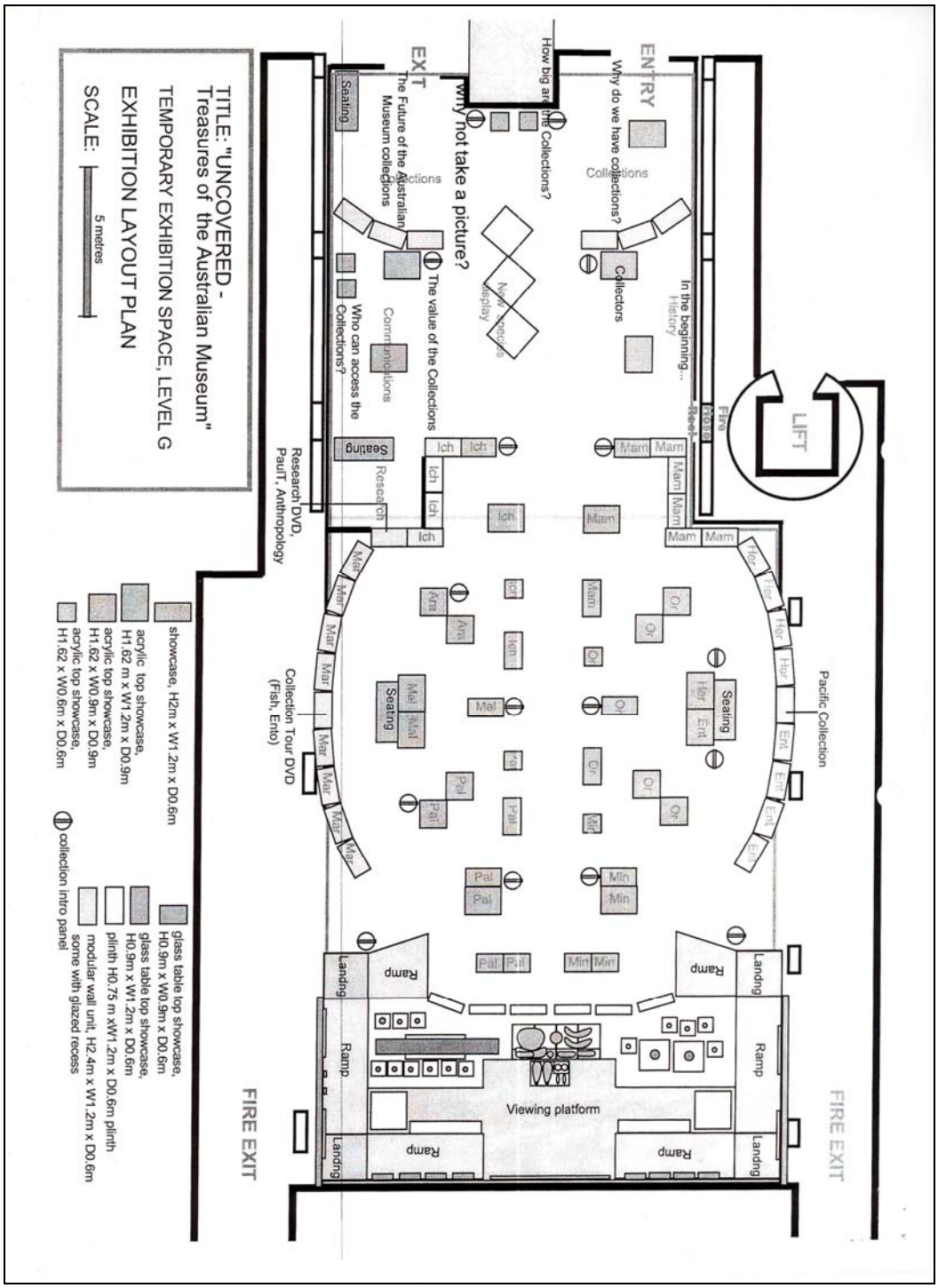
14. Which of the following best describes your usual occupation:
Professional.....…..1
Home duties.....……2
Managerial.....….3
Self-employed...…….4
Education.....……5
Trade.....…….6
Student.....……7
Other.....…….8

15. Do you have any other comments about the exhibition?

THANK THEM FOR THEIR TIME

DATE: DAY: TIME:

Appendix 10. Stage Two: *Uncovered* exhibition floor plan



Appendix 11. Stage One in-depth interview marked-up transcript example

P3.2: Rosemary

Rosemary is a 50-something woman working for a major Australian courier company. She most recently visited the Australian Museum with her grandson, whom she is obviously very fond of. Her approach to learning in the museum visit was through her grandson – she was conscious of experiencing everything through his eyes. When talking about learning she focused on her grandson and how he learns, however when questioned further she talked about learning as a deep process – self analytical, changing etc. (although she found this a bit embarrassing and felt silly mentioning it!)

Regarding museums, Rosemary thinks they are .... The main differences that she would like are more active, less structured, more informal, can be experienced alone or with others and more facts presented than ideas.

Introduce research and process. What I'd like you to do is that I've got this sheet of paper here and I just want you to write down all of the words and phrases and things that come to mind when you think about the word 'learning'. These are called concept maps. [show 'fruit' concept map] *I've done this one for fruit, and what I've done is written out all the things that reminded me of fruit so it looks like that. So what I want you to do is write down things that you think of when you think about the word 'learning' and that come together for you.*

It's hard, I haven't had to do anything like this for a long time!

Well, just think about what comes to mind when I say learning.

OK, doesn't matter where I put it does it? Isn't it funny the things that just come to mind. I started off with just skills, and this is the thing, I've probably gone a bit deeper now because I've put school, knowledge, education, children, pencils/paper, teachers, new insights, innovation, self-analysis. Now I've got to think of other things – it's a bit early in the morning!

What do you mean that you've 'gone deeper' now?

Well just sort of you know that those words are just things on the surface [points to left hand side of map] and then I thinks that sort of what I could gain if I sat and thought about it. So I believe you do gain new insights from learning, and you do feel that you can be innovative through your learning, and then you self-analyse yourself as to whether you're capable of exploring or going further with what you're learning.

Sounds good. You've got here the first thing you thought of...

Yes, just skills, knowledge, school. Like, I was thinking of children, pencils/papers, teachers.

Like practical things?

Yes, practical. It's hard to think – I haven't even had coffee!

Well, tell me more about school and education.

It's very beneficial for you to have self-improvement, to be able to go forward from a children's point of view. I believe these days children have just got so much at their beck and call compared to when I went to school because they really encourage them.

So, how old's your grandson?

He's five and just finished Kindergarten and it's just really blown me away his school report that it's five pages, and they've assessed him on computer skills, on their self-esteem, on their presentation, being able to get up there and give a presentation for twenty minutes with props! And he's the youngest – he only turned five at the end of May, and I thought 'my goodness me they've really moving them along very quickly'.

And is that learning do you think?

I think it is learning. I think it's a wonderful thing. He's not a shy boy anyway, his creative skills have been able to be expressed, he's a very creative person, he has a quick mind to tell stories, and he can just come out with them and he doesn't have a fear of being in front of people.

So why do you think children are like that these days? Have they got more opportunities?

Yes, a lot more opportunities and I think it's wonderful. Then you've got all these institutions as well assisting the input of their learning.

Like, what sort of places?

Like the Museum, the Australian Museum, the Smithsonian. OK, the Smithsonian is overseas, but I've been there fortunately, and you'd be surprised. My grandson loves volcanoes, earthquakes. He's into all of that and I actually have found in Big W, of all places, something where you can build a volcano and it's actually put out by the Smithsonian and he's just going to be blown away 'cos he's very inquisitive: 'well how does that happen', 'why does that flame come out', and he'll think 'wow'.

So lots of questions?

Lots of questions, very inquisitive person, more so than what my daughter was, what I was at his age, but I think because of technology they have these days, television, movies, the Maritime Museum, he loves watching geographic, nature shows, and I think that's wonderful because he gets to see that there is more than just the TV and watching cartoons.

And when you're with him doing things are you learning?

Oh yes, gosh. Yes, very much so.

And in these sorts of ways that you've written – innovation, self-analysis…

Yes, self-analysis because I think, in my way of thinking I didn't have the opportunities that he's now got, and it can only make him a better person, hopefully. Which you all hope. At five years of age you don't know what's ahead - who their

friends are going to be, swayed to go the wrong way, but with the correct guidance from the family you hope that they will have a better life with all these learning skills that they've gained.

OK, good, you've got a lot of stuff there, that's great. I just now want you to think a bit more about you, and how you like to learn. So if you think about something, a topic that interests you, a hobby you might have or something and you think 'Right, I want to find out more about x' how do you learn?

How would I go about it? Firstly I'd would get the Yellow Pages, let the fingers do the walking. Then, I'd actually probably go to the local Library and make enquiries there, do research by asking what books you should be reading. And then proceeding down that avenue then contacting a society or something like that that would be of interest.

So like a group...

Yes, a group of people so you could progress your interest.

Is there anything lately that you've been doing?

No, I don't have time unfortunately!

Is there something you've wanted to do?

Yes, well actually, it's quite funny. As you grow older, how would you say, you're interests change and, actually, I'd very much like to go into the Greek mythology and learn more about that side. I didn't do history at school, I did geography. I found that interesting, but now I tend to find that I'm being drawn to that.

Like the gods and religious beliefs and stuff?

Not so much the religion. Just an understanding of the Greek mythology and get a better insight into it because it wasn't available to me as a child. And of course also computer skills. My goodness me, you've got to be able to keep up with that these days.

What about the Internet? Do you use that?

The Internet, no, we don't use a lot of it here. I don't have a computer at home because I don't see the need, because then I'd just sit there and tap away on the computer and I think my time would be wasted!

It's just that some people I've talked to said 'Oh the first place I'd go is the Internet' and I just found that really interesting.

Well you can do it. I've gone onto the Internet here when I've wanted to find out things, but because I haven't got a computer available at home I have to look at other ways and means of researching.

And then they'd say 'Well I'd still go to the Library'!

What about you, what did you like?

I enjoyed that. I enjoyed watching him experience 'oh, yes' like looking for bones, and putting his cape on and being like a scientist. He loved that. I picked up that most of the children there really enjoyed that and looking through the telescopes, because it was more hands-on and more focused towards the younger people.

Did you go to any other exhibitions?

We went all over, right up to the top floor. I thought the exhibition, it was good, but it just seemed to be missing something, I don't know what it was. Probably because of his reaction.

Yes, I mean our Director, he was very closely involved as he's a paleontologist, and he was saying that he felt it was missing, something big, big icon pieces and I think that's what you're saying, something huge? That's what he's disappointed with, I guess.

Because [grandson's name] can rattle off every dinosaur, and he was saying well where is it? He'd seen them in pictures and as you said your Director was a little bit disappointed, and I think that's what [grandson's name] thought too. He said he enjoyed it, but there wasn't a lot of dinosaurs.

Did you talk much about it or think much about it afterwards? Because we've been talking about learning, do you think you've picked up anything? Learned anything?

Well probably not because of [grandson's name], he's got books, he's got models, because he's always talking about dinosaurs and he knew all about them, knew about the topic because that's his thing at present and has been for a long time, and he's got dinosaurs models, everything.

What about you?

What about me?

Did you pick up anything?

Not really. From an adult's perspective, I went there mainly for his perspective because he hasn't been to a museum. He said he enjoyed the Museum, and I said we'll go another day, and he said 'Yes when something else is there. Will there be other things there?'. That's maybe something that needs to be considered.

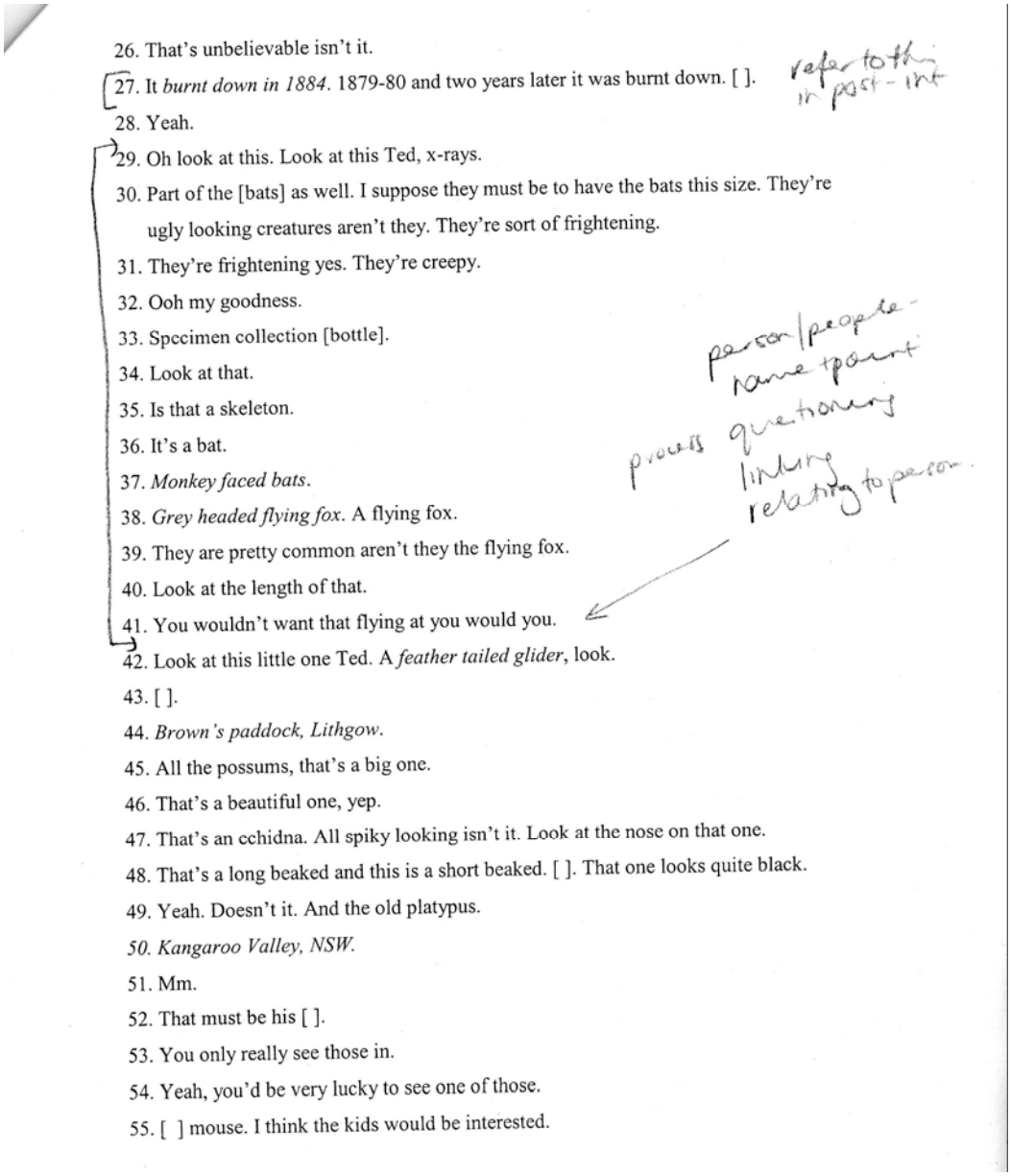
The changing...

Yes, the changing exhibits. And I think the Museum these days is more aimed at younger children, so you've got to have something that retains their interest.

Do you think that's OK that the Museum is for young children? Or would you like to experience it as an adult?

Oh yes, there are different levels at the Museum. Like, one level is focused at the younger, inquisitive mind, because the things they learn at school now progresses

Appendix 12. Stage Two marked-up conversation transcript example

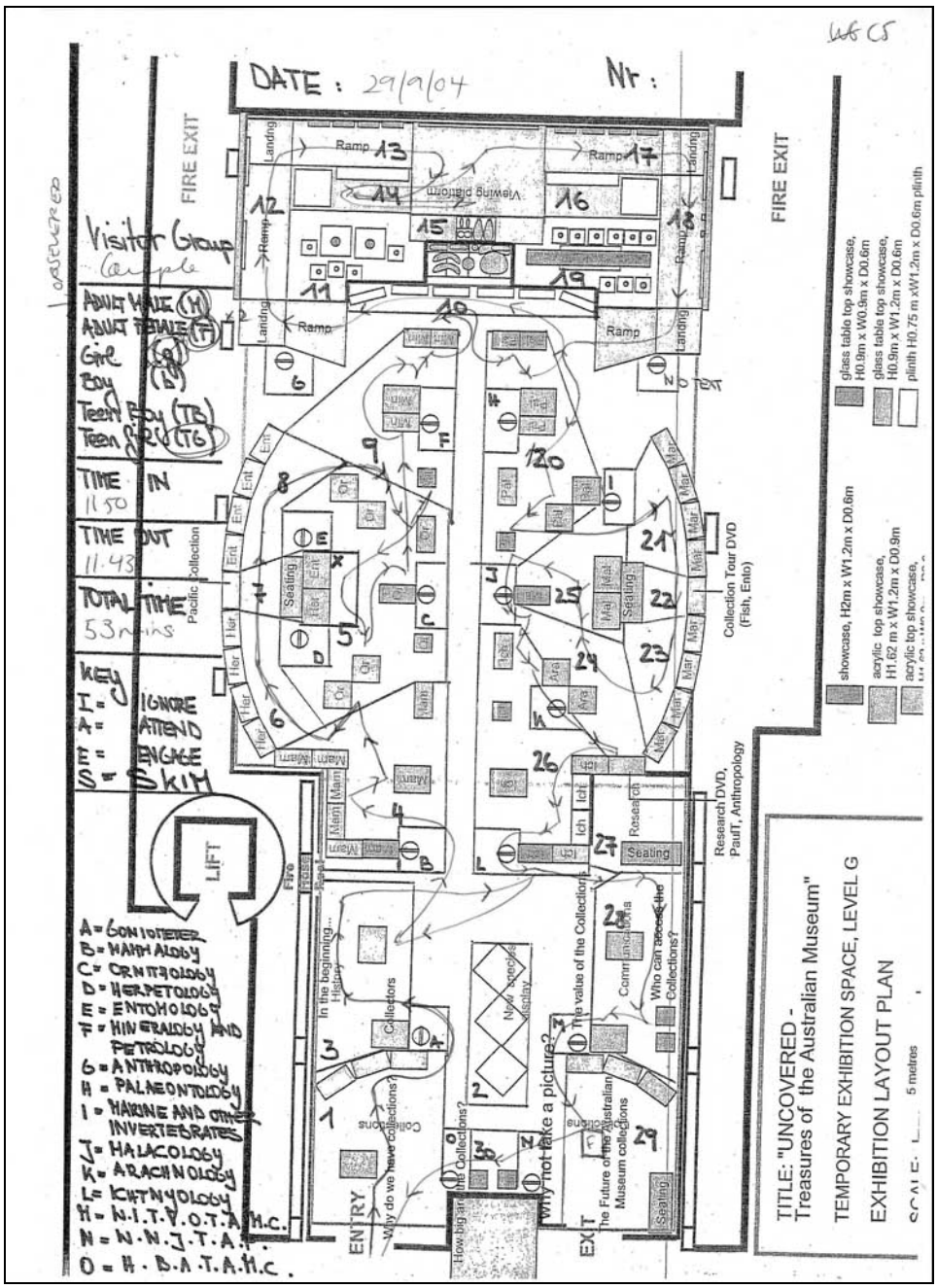


26. That's unbelievable isn't it.
27. It *burnt down in 1884*. 1879-80 and two years later it was burnt down. [ ].
28. Yeah.
29. Oh look at this. Look at this Ted, x-rays.
30. Part of the [bats] as well. I suppose they must be to have the bats this size. They're ugly looking creatures aren't they. They're sort of frightening.
31. They're frightening yes. They're creepy.
32. Ooh my goodness.
33. Specimen collection [bottle].
34. Look at that.
35. Is that a skeleton.
36. It's a bat.
37. *Monkey faced bats*.
38. *Grey headed flying fox*. A flying fox.
39. They are pretty common aren't they the flying fox.
40. Look at the length of that.
41. You wouldn't want that flying at you would you.
42. Look at this little one Ted. A *feather tailed glider*, look.
43. [ ].
44. *Brown's paddock, Lithgow*.
45. All the possums, that's a big one.
46. That's a beautiful one, yep.
47. That's an echidna. All spiky looking isn't it. Look at the nose on that one.
48. That's a long beaked and this is a short beaked. [ ]. That one looks quite black.
49. Yeah. Doesn't it. And the old platypus.
50. *Kangaroo Valley, NSW.*
51. Mm.
52. That must be his [ ].
53. You only really see those in.
54. Yeah, you'd be very lucky to see one of those.
55. [ ] mouse. I think the kids would be interested.

56. Yes this is a good one.
57. Numbat, that's the one that was in that thing that I, the alphabet that I sowed, N was the numbat.
58. The embroidery.
59. Yes.
60. Is that just a smaller one of those.
61. And the quoll was the Q.
62. Yes the quoll was the Q.
63. And the platypus was the P. *Spotted tailed quoll. Taree NSW.*
64. Tree kangaroo.
65. Mm he's a big one isn't he.
66. I didn't know they preserve using a variety of salts and arsenic [soap]. *These substances are toxic and scientists must take care to protect themselves by cleaning their skin regularly.*
67. They don't look a lot like kangaroos do they.
68. No. From New Guinea.
69. They look tiny don't they.
70. Mm.
71. When I was in Fiji, this one, with the stripes, that went across the lawn at the hotel there. [ ] It was a lot [bigger] than that.
72. Yeah.
73. That's a weird looking one, the green one.
74. *Tree snakes.*
75. Wonder if that's their full size or not.
76. Look at the geckos here. Is that what they are.
77. Yeah I think so.
78. Lizards.
79. *New Caledonia is home to a uniquely rich and diverse lizard fauna. Sixty-nine new species have so far been recorded, nineteen the last five years.*
80. That almost looks like a mask doesn't it.
81. Yes. Aren't they the ones that they sort of bring up.

82. They could be I suppose.
83. What do they call the local one, the frilled.
84. The frilled lizard yes.
85. I suppose geckos are all part of the.
86. Yes.
87. Lizard family. Look at that one there. Look at the pattern.
88. Mm, beautiful isn't it. Goanna. They're beautiful aren't they.
89. Look at this one how striped his legs are.
90. Yes. Aren't they. It's almost got spots on the back.
91. Nearly as many spots on the back as there are on the front.
92. That's the Mary River.
93. There.
94. Oh in Queensland.
95. Mm.
96. Look at that there.
97. [Drogger] head. [laughs] Loggerhead.
98. He must have been [ ].
99. Look at this turtle's huge.
100. Look at these beautiful green ones.
101. Mm.
102. Their [colour] is incredible, the variety..
103. Yes they look like our Christmas beetles that we hardly ever see these days, but when we were kids we used to get them.
104. I think a lot of these fertilisers and weed killers and all the rest of it, they've probably wiped the damn things out.
105. Mm.
106. Are they local butterflies.
107. Moths and [ ] Australia. Look at that one with the long things there. *Scuttle flies*, look at these.
108. What are they.
109. Scuttle flies. Can't sort of see what they are really.

Appendix 13. Stage Two observation and field notes example



OBS NOTES

Observed male (carrying tape)

Couple came t mother-in-law / mother (say late 70s) + daughter aged about 16. They wanted to visit together as a group.
In timeline section they stay as a group.
R wandered down to fish display but got called back to chair by daughter
Group conversation a) keeps case
Ento → Birds / Minerals - male t daughter, other female stay together.
Minerals case come together as group briefly [exhib fairly crowded today] 'seem to be an attractor
Does Anthop t the daughter. Other 2 female stay t minerals / paleo.
Double back to spear tips case t older female
Then come rapidly back to paleo then mud crabs [obs crabs case well used - familiar → unfamiliar]
Went to hole in head alone then again t daughter
Only person to look a) Rock Art DVD - albiet briefly (rest point? - 12:40 so 50 min into the visit)
Skim thru values part, spend time a) breaking news display as a gp.

Males also play role - eg father + daughter walking + leaning together

Larval fish display also lends itself to i/activity - obs group of 6-7 yo + mums spending time looking & reading + comparing

Appendix 14. Stage Two narrative description example

1. Overview

C4 are a retired couple, female (Fran) aged 69 and male (Ted) aged 73. In the previous 12 months they said they had made one visit to a museum/gallery, yet when they were discussing their recent travels it was obvious that they had visited many cultural institutions overseas, with places in Russia, Spain and Italy discussed in some detail. For example Ted talked in some depth about a museum he had visited in St Petersburg, that led him to refect on modern-day Russia and the rise of communism, as well as experiencing the splendour of a bygone age.

Although Ted was asked to wear the recorder he requested that Fran wear it (however, both their voices were heard clearly on the tape). As Fran and Ted actively participated in the interviews and the conversation, both their views are included in this analysis.

2. Views of learning pre-exhibition

Fran talked about learning as taking in what you see around you and using it in your everyday life. Ted described learning as taking an interest in things, adding that people learn throughout their lives. They both noted that they were still learning: Ted in using computers and electronics, and Fran in researching her family history. When discussing how they personally liked to learn Ted stated that he liked the "hands-on" aspects, and Fran talked about trail and error, learning through others as well as through travelling. Ted also talked about learning when travelling, making links form the past to the present. The resources used in learning that Ted rated most highly were computer programs/CDROMs, adult education courses and universities, formal education. Fran rated internet/websites, computer programs/CDROMs, and universities, other formal courses most highly.

The statements Ted rated as very important were:

- *Learning in a physical/"hands-on" way*
- *Learning new facts*

The statements Fran rated most highly were:

- *Learning in a physical/"hands-on" way*
- *Learning that specifically fits with how I like to learn*

They both commented that the statement *Changing how I see myself* was not relevant to them at their "late stage of life".

3. Observations of behaviour within exhibition

- Spent one hour in exhibition
- Spent more time at the history/timeline display (in the Introductory area) than other participants, doubling back twice to check on some details
- Read panels in the mammals and birds sections that no one else had noticed
- Seemed to (un)consciously decide not to visit the Anthropology section even though they did read the introduction panel to this section, which was surprising given that Ted stated he was interested in other cultures. However, once they saw the gamelan display (near the exit of exhibition) they made a quick bee-line back to the Anthropology section
- Fran got into deep conversation with another female (elderly) visitor at one of the displays
- Looking and peering intently, crouching to see more
- Viewed most sections of the exhibition

4. Views of learning post-exhibition

Both Fran and Ted described the exhibition as being full of a variety of objects, enabling them to sample everything that the Museum holds. They felt it was very compact exhibition, with interesting information about the origins of the Museum and lots of different specimens that you could see without wearing yourself out. Ted particularly enjoyed the geological formations leading him to reflect of the wonder of nature in forming these minerals. Fran also liked the crystals and rocks, reminding her of her interest in wanting to join a fossicking group. They also both reported learning that the name for the study of fossils was palaeontology, which they never knew before. In the statements about how they felt they learned in the exhibition Ted rated *I discovered things I didn't know* highly.

When asked how the exhibition fitted with the ways they liked to learn, they both reported that the exhibition encouraged them to remember things from the past and make connections. This was one of the ways that they learned mentioned in the pre-visit interview. They were surprised at the wonderful and surprising things to be found in nature and speculated that they wouldn't be known if the Museum didn't exist. They also discussed their visit to a butterfly house in Singapore—a memory triggered by the exhibition. Fran further talked about all the beautiful butterflies she remembered from her childhood and wondered why they weren't around now, guessing it was because of increased use of fertilisers. They felt the same about Christmas beetles and mentioned that is was a shame that their grandchildren don't get to see these anymore.

5. Significant Conversation Events (SEs)

The transcript shows several SEs that demonstrated Fran and Ted's preference of learning through questioning and linking what they were seeing with other events in their lives. Examples of reminiscing were also evident, which was also how they stated they liked to learn.

This SE shows questioning and linking, coupled with people through naming, pointing and discussing:

Fran. *Oh, look at this. Look at this TE, x-rays.*

Ted. *… they're ugly looking creatures aren't they? They're sort of frightening.*

Fran. *They're frightening, yes. They're creepy. Ooh my goodness … Look at that. Is that a skeleton?*

Ted. *It's a bat* [reads text] *"Monkey-faced bats. Grey-headed flying fox". A flying fox.*

Fran. *They are pretty common aren't they, the flying fox?*

Ted. *Look at the length of that. You wouldn't want that flying at you would you!*

This next SE demonstrates process in applying what they were seeing to a seemingly unrelated topic (embroidery):

Fran. *Numbat. That's the one that was in that thing that I, the alphabet that I sewed. N was the numbat.*

Ted. *The embroidery?*

Fran. *Yes.*

Ted. *Is that just a smaller one of those? And the quoll was the Q.*

Fran. *Yes, the quoll was the Q, and the platypus was the P* [reads text] *"Spotted-tailed quoll, Taree, NSW".*

The next SE again shows linking to other holiday experiences, and learning something new:

Ted. *Tree kangaroo.*

Fran. *Mm, he's a big one isn't he?*

Ted. *I didn't know they preserve using a variety of salts and arsenic.* [reads text] *"These substances are toxic and scientists must take care to protect themselves by cleaning their skin regularly".*

Fran. *They don't look a lot like kangaroos do they?*

Ted. *No, from New Guinea. They look tiny don't they?*

Fran. *Mmm.*

Ted. *When I was in Fiji, this one with the stripes,* [points to snake] *that went across the lawn at the hotel there. It was a lot bigger than that one.*

Fran. *Yeah.*

Ted. *That's a weird looking one, the green one* [reads text] *"Tree snakes".*

Fran. *Wonder if that's their full size or not?*

In the next two examples Fran and Ted explore their hypothesis about why they don't see as many butterflies and beetles as they used to, which matched with the way Ted stated he liked to learn through reminiscing about the past and making connections to today:

Fran. *Look at these beautiful green ones* [indicates showcase full of beetles].

Ted. *Mmm.*

Fran. *Their colour is incredible, the variety.*

Ted. *Yes, they look like our Christmas beetles that we hardly ever see these days, but when we were kids we used to get them.*

Fran. *I think a lot of these fertilisers and weed killers and all the rest of it, they've probably wiped the damn things out.*

Fran. [reads text] *"South American butterflies, South east Asian stag beetles". What was the name of that island in Singapore we went to that had the butterflies?*

Ted. *It started with S.*

Fran. *I was looking at it the other say on the video.*

Ted. *Yes, Santore or something?*

Fran. *Something like that I think. We used to get beautiful butterflies when we were kids. Not like that, but those colors, those pinks and …* [points to specimens]

Ted. *Yeah, well they are Australian.*

Fran. *Yeah, I know, but they're not the sort we used to get, and they were beautiful.*

The final SE demonstrates that Fran and Ted are learning new things (the name of the study of fossils). They also made reference to this learning in their post-interview, being really pleased that they had learned this, with Fran especially becoming re-enthused about joining a fossicking group:

Fran. [reads text] *"Paleontology". Don't know whether I knew that was the study of fossils.*

Ted. *Neither did I.*

Fran. *That's something I've learned.*

Ted. [reads text] *"Squid-like animals .. ". You'd wonder how they would become embedded like that.*

6. General Comments

- As with some of the other case examples the exhibition text may not be giving them things to think about – the transcript was full of naming and pointing, however there were several SEs where they discussed what it meant or how it related to their lives
- They liked to learn through reminiscing and felt that the exhibition matched that preference
- They made more links to their early lives (could be a function of age and life-stage?)

References

Abbott, H. (2002). *The Cambridge introduction to narrative*. Cambridge: Cambridge University Press.

Adelman, L., Falk, J., & James, S. (2000). Impact of National Aquarium in Baltimore on Visitors' Conservation Attitudes, Behaviour and Knowledge. *Curator, 43*(1), 33-61.

Allen, S. (2002). Looking for Learning in Visitor Talk: A Methodological Exploration. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 259-303). Mahwah: Lawrence Erlbaum Associates.

Allen, S. (2004a). Designs for Learning: Studying Science Museum Exhibits That Do More Than Entertain. *Science Education, 88*(Supplement 1), S17-S33.

Allen, S. (2004b). *Finding Significance*. San Francisco: Exploratorium.

Alt, M. (1977). Evaluating Didactic Exhibits: A Critical Look. *Curator, 20*(3), 241-258.

Alt, M., & Shaw, K. (1984). Characteristics of Ideal Museum Exhibits. *British Journal of Psychology, 75*, 25-36.

Anderson, D. (1997). *A Common Wealth: Museums and Learning in the United Kingdom*. London: Department of National Heritage.

Anderson, D. (2003). Visitors' Long-term Memories of World Expositions. *Curator, 46*(4), 401-420.

Anderson, D., Piscitelli, B., Weier, K., Everett, M., & Tayler, C. (2002). Children's Museum Experiences: Identifying Powerful Mediators of Learning. *Curator, 45*(3), 213-231.

Argyrous, G. (1996). *Statistics for Social Research*. South Yarra: Macmillan Education Australia Pty Ltd.

Ash, D. (2002). Negotiations of Thematic Conversations About Biology. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 357-400). Mahwah: Lawrence Erlbaum Associates.

Ash, D. (2003). Dialogic Inquiry and Biological Themes and Principles. *Journal of Museum Education, 28*(2), 8-12.

Ash, D. (2004). How Families Use Questions at Dioramas: Ideas for Exhibit Design. *Curator, 47*(4), 84-100.

Atchley, R. (1989). A continuity theory of normal aging. *The Gerontologist, 29*, 183-190.

Australian Bureau of Statistics. (2002). *Cultural Trends in Australia: A Statistical Overview*. Canberra: Commonwealth of Australia.

Australian Bureau of Statistics. (2006). *Household use of information technology*. Canberra: Commonwealth of Australia.

Australian Museum. (2005). *Corporate Strategic Plan, 2005-2008*. Sydney: Australian Museum.

Australian Museum Audience Research Centre. (2003). *Exit Survey Results: January 2003* (unpublished report). Sydney: Australian Museum.

Australian Museum Audience Research Centre. (2004a). *Australian Museum Visitors 2003-2004* (unpublished report). Sydney: Australian Museum.

Australian Museum Audience Research Centre. (2004b). *Evaluation of Uncovered: Treasures of the Australian Museum* (unpublished report). Sydney: Australian Museum.
Australian Museum Audience Research Centre. (2006). *Australian Museum Visitors* (unpublished report). Sydney: Australian Museum.
Baillie, A. (1996). *Empowering the visitor: the family experience of museums. A pilot study of ten family group visits to the Queensland Museum.* Paper presented at the Power and Empowerment: Preparing for the New Millenium. Museums Australia Annual Conference, Sydney.
Baldwin, L., Cochrane, S., Counts, C., Dolomore, J., McKenna, M., & Vacarr, B. (1994). Passionate and purposeful: adult learning communities. In E. Hooper-Greenhill (Ed.), *The Educational Role of the Museum* (pp. 298-302). London: Routledge.
Bauman, Z. (1996). From pilgrim to tourist-Or a short history of identity. In S. Hall & P. du Guy (Eds.), *Questions of cultural identity* (pp. 18-36). London: Sage.
Bedford, L. (2001). Storytelling: The Real Work of Museums. *Curator, 44*(1), 27-34.
Bedford, L. (2004). Working in the Subjunctive Mood: Imagination and Museums. *Curator, 47*(1), 5-11.
Beer, V. (1987). Great Expectations: Do Museums Know What Visitors Are Doing? *Curator, 30*(3), 206-215.
Bennett, T. (1995a). *The Birth of the Museum: history, theory, politics*. London: Routledge.
Bennett, T. (1995b). That those who run may read: museums and barriers to access. In C. Scott (Ed.), *Evaluation and Visitor Research in Museums: Towards 2000* (pp. 11-22). Sydney: Powerhouse Publishing.
Biggs, J. (1979). Individual Differences in Study Processes and the Quality of Learning Outcomes. *Higher Education, 8*(4), 381-394.
Bitgood, S. (1997). The Hein-Miles Debate: An Introduction, Explanation, and Commentary. *Visitor Behaviour, 12*(3&4), 3-7.
Bitgood, S., & Patterson, D. (1993). The Effects of Gallery Changes on Visitor Reading and Object Viewing Time. *Environment and Behaviour, 25*(6), 761-781.
Black, G. (2005). *The Engaging Museum: An interpretive approach to visitor involvement*. London: Routledge.
Blud, L. (1990). Social interaction and learning among family groups visiting a museum. *Museum Management and Curatorship, 9*, 43-51.
Borun, M. (2002). Object-Based Learning and Family Groups. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 245-260). Mahwah: Lawrence Erlbaum Associates.
Borun, M., Chambers, M., & Cleghorn, A. (1996). Families Are Learning in Science Museums. *Curator, 39*(2), 123-138.
Borun, M., Chambers, M., Dritsas, J., & Johnson, J. (1997). Enhancing Family Learning Through Exhibits. *Curator, 40*(4), 279-295.
Borun, M., & Dritsas, J. (1997). Developing Family-Friendly Exhibits. *Curator, 40*(3), 178-196.
Borun, M., Massey, C., & Lutter, T. (1993). Naive knowledge and the design of science exhibitions. *Curator, 36*(3), 201-219.

Bowden, J. (1994). The nature of phenomenographic research. In J. Bowden & E. Walsh (Eds.), *Phenomenographic Research: Variations in Method* (pp. 1-16). Melbourne: RMIT.

Bowen, J., & Hobson, P. (1987). *Theories of Education: Studies of Significant Innovation in Western Educational Thought* (2nd ed.). Brisbane: John Wiley and Sons.

Bradburne, J. (1998). Dinosaurs and White Elephants: the Science Centre in the 21st Century. *Museum Management and Curatorship, 17*(2), 119-137.

Brennan, B. (1994). Widespread Neglect in the Fourth Education Sector in Australia. *Australian Journal of Adult and Community Education, 34*(2), 96-103.

Brown, A. (1995). The Advancement of Learning. *Educational Researcher, 23*(8), 4-12.

Brown, E. (1997). Toward A Natural History Museum for the 21st Century. *Museum News, November/December*, 38-49.

Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge: Harvard University Press.

Bryman, A., & Cramer, D. (2001). *Quantitative Data Analysis with SPSS Release 10 for Windows. A guide for social scientists*. London: Routledge.

Buckingham, D., & Scanlon, M. (2003). *Education, Entertainment and Learning in the Home*. Buckingham: Open University Press.

Burton, C., & Scott, C. (2003). Museums: Challenges for the 21st Century. *Marketing Management, 5*(2), 56-68.

Callanan, M., Jipson, J., & Soennichsen, M. (2002). Maps, Globes and Videos: Parent-Child Conversations About Representational Objects. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 261-283). Mahwah: Lawrence Erlbaum Associates.

Cameron, F. (2003). Transgressing fear - engaging emotions and opinion - a case for museums in the 21st century. *Open Museum Journal, 6*.

Cameron, F. (2006). Beyond Surface Representations: Museums, Edgy Topics, Civic Responsibilities and Modes of Engagement. *Open Museum Journal, 8*.

Carr, D. (1999). The Need for the Museum. *Museum News, March/April*, 31-52.

Carr, D. (2003a). Observing Collaborations Between Libraries and Museums. *Curator, 46*(2), 123-129.

Carr, D. (2003b). *The Promise of Cultural Institutions*. Walnut Creek: AltaMira Press.

Carr, M., Barker, M., Bell, B., Biddulph, F., Jones, A., Kirkwood, V., Pearson, J., & Symington, D. (1994). The Constructivist Paradigm and Some Implications for Science Content and Pedagogy. In P. Fensham & R. Gunstone & R. White (Eds.), *The Content of Science: a constructivist approach to its teaching and learning* (pp. 147-160). London: Falmer Press.

Carr, W., & Kemmis, S. (1986). *Becoming Critical: Education, Knowledge and Action Research*. Geelong: Deakin University Press.

Cassels, R. (1992a). Learning Styles. In G. Durbin (Ed.), *Developing Museum Exhibitions for Lifelong Learning* (pp. 38-45). London: The Stationery Office.

Cassels, R. (1992b). Mind, heart and soul: towards better learning in heritage parks. *New Zealand Museums Journal, 22*(2), 12-17.
Chadwick, J. (2003). *Virtual Space/Physical Space: Where Are We Going?* Paper presented at the Canadian Museums Association Annual Conference, Winnipeg.
Clarke, J. (1995). Tertiary Student's Perceptions of their Learning Environments: A New Procedure and Some Outcomes. *Higher Education Research & Development, 14*(1), 1-12.
Clarke, J. (1998). Student's Perceptions of Different Tertiary Learning Environments. *Higher Education Research & Development, 17*(1), 107-117.
Claxton, G. (1999). *Wise-up: the challenge of lifelong learning*. London: Bloomsbury Publishing.
Cohen, L., & Manion, L. (1994). *Research Methods in Education*. London: Routledge.
Cole, P. (1995). Constructivism - Rediscovering the Discovered. *Curator, 38*(4), 225-227.
Combs, A. (1999). Why Do They Come? Listening to Visitors at a Decorative Arts Museum. *Curator, 43*(3), 186-197.
Confucius. (undated). *The Analects* (D. Lau, Trans.). London: Penguin Classics.
Conversation Transcript C1. (28/09/2004). *Couple #1*. Unpublished manuscript.
Conversation Transcript C2. (28/09/2004). *Couple #2*. Unpublished manuscript.
Conversation Transcript C3. (29/09/2004). *Couple #3*. Unpublished manuscript.
Conversation Transcript C4. (30/09/2004). *Couple #4*. Unpublished manuscript.
Conversation Transcript C5. (30/09/2004). *Couple #5*. Unpublished manuscript.
Conversation Transcript F1. (27/09/2004). *Family #1*. Unpublished manuscript.
Conversation Transcript F2. (28/09/2004). *Family #2*. Unpublished manuscript.
Conversation Transcript F3. (29/09/2004). *Family #3*. Unpublished manuscript.
Conversation Transcript F4. (29/09/2004). *Family #4*. Unpublished manuscript.
Conversation Transcript F5. (30/09/2004). *Family #5*. Unpublished manuscript.
Cox, E. (1980). The Optimal Number of Response Alternatives for a Scale: A Review. *Journal of Marketing Research, 17*, 407-422.
Crane, V., Nicholson, H., Chen, M., & Bitgood, S. (Eds.). (1994). *Informal Science Learning: What the Research Says About Television, Science Museums, and Community-Based Projects*. Dedham: Research Communications Ltd.
Crang, M. (1996). Magic Kingdom or a Quixotic Quest for Authenticity? *Annals of Tourism Research, 23*(2), 415-431.
Csikszentmihalyi, M., & Hermanson, K. (1995). Intrinsic Motivation in Museums: Why Does One Want to Learn? In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 67-77). Washington: American Association of Museums.
Daniels, H. (Ed.). (1996). *An Introduction to Vygotsky*. London: Routledge.
de Vaus, D. (1991). *Surveys in Social Research* (3rd ed.). London: UCL Press.
Denzin, N., & Lincoln, Y. (1998a). Entering the Field of Qualitative Research. In N. Denzin & Y. Lincoln (Eds.), *Strategies of Qualitative Inquiry* (pp. 1-34). California: Sage.
Denzin, N., & Lincoln, Y. (Eds.). (1998b). *Collecting and Interpreting Qualitative Materials*. California: Sage.

Denzin, N., & Lincoln, Y. (Eds.). (1998c). *The Landscape of Qualitative Research: Theories and Issues*. California: Sage.
Denzin, N., & Lincoln, Y. (Eds.). (1998d). *Strategies of Qualitative Inquiry*. California: Sage.
Dewey, J. (1916). *Democracy and Education*. New York: Macmillan.
Dewey, J. (1938). *Experience and Education*. New York: Kappa Delta Pi.
Diamond, J. (1999). *Practical Evaluation Guide: tools for museums and other informal educational settings*. Walnut Creek: AltaMira Press.
Dierking, L. (1989). Learning Theory and Learning Styles: An Overview. *Journal of Museum Education*, 4-6.
Dierking, L. (1992). Historical Survey of Theories of Learning. In G. Durbin (Ed.), *Developing Museum Exhibitions for Lifelong Learning* (pp. 21-24). London: The Stationery Office for the Group for Education in Museums.
Dierking, L. (2002). The Role of Context in Children's Learning from Objects and Experiences. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 3-18). Mahwah: Lawrence Erlbaum Associates.
Dierking, L., & Griffin, J. (2001). *Perceptions of Learning in Formal and Informal Environments.* Paper presented at the National Association for Research in Science Teaching Conference, Boston.
Doering, Z., & Pekarik, A. (1996). Questioning the Entrance Narrative. *Journal of Museum Education, 21*(3), 20-23.
Driver, R., Asoko, H., Leach, J., Mortimer, E., & Scott, P. (1994). Constructing Scientific Knowledge in the Classroom. *Educational Researcher, 23*(7), 5-12.
du Guy, P., Evans, J., & Redman, P. (Eds.). (2000). *Identity: a reader*. Sage: London.
Durbin, G. (Ed.). (1996). *Developing Museum Exhibitions for Lifelong Learning*. London: The Stationery Office for the Group for Education in Museums.
Eklund-Myrskog, G. (1998). Students' conceptions of learning in different educational contexts. *Higher Education, 35*(3), 299-316.
Ellenbogen, K. (2002). Museums in Family Life: An Ethnographic Case Study. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 81-101). Mahwah: Lawrence Erlbaum Associates.
Ellenbogen, K. (Ed.). (2003a). *Sociocultural Perspectives on Museums Part 1*. Washington: Journal of Museum Education.
Ellenbogen, K. (Ed.). (2003b). *Sociocultural Perspectives on Museums Part 2*. Washington: Journal of Museum Education.
Ellenbogen, K., Luke, J., & Dierking, L. (2004). Family Learning Research in Museums: An Emerging Disciplinary Matrix? *Science Education, 88*(Supplement 1), S48-S58.
Entwistle, N. (1997). Contrasting Perspectives on Learning. In F. Marton & D. Hounsell & N. Entwistle (Eds.), *The Experience of Learning: Implications for Teaching and Studying in Higher Education* (2nd ed., pp. 3-22). Edinburgh: Scottish Academic Press.
Environmetrics. (1998). *Staff perceptions of learning* (unpublished report). Sydney: Australian Museum.

Erickson, F. (1987). Qualitative Methods in Research on Teaching. In M. Wittrock (Ed.), *Handbook of Research on Teaching* (3rd ed., pp. 119-161). New York: Macmillan.
Erikson, E. (1963). *Childhood and Society*. New York: MacMillan.
Falk, J. (1991). Analysis of the behaviour of family visitors in history museums: The National Museum of Natural History. *Curator, 34*(1), 44-50.
Falk, J. (1998). Visitors: Who Does, Who Doesn't and Why. *Museum News, 77*(2), 38-43.
Falk, J. (2004). The Director's Cut: Toward an Improved Understanding of Learning from Museums. *Science Education, 88*(Supplement 1), S82-S96.
Falk, J. (2006). An Identity-Centred Approach to Understanding Museum Learning. *Curator, 49*(2), 151-166.
Falk, J., Brooks, P., & Amin, R. (2001). Investigating the long-term impact of a science center on its community: The California Science Center L.A.S.E.R. Project. In J. Falk (Ed.), *Free-Choice Science Education: How We Learn Science Outside of School* (pp. 115-132). New York: Teacher's College Press, Columbia University.
Falk, J., & Dierking, L. (1992). *The Museum Experience*. Washington: Whalesback Books.
Falk, J., & Dierking, L. (1997). School Field trips: Assessing Their Long-Term Impact. *Curator, 40*(3), 211-218.
Falk, J., & Dierking, L. (2000). *Learning from Museums: Visitor Experiences and the Making of Meaning*. Walnut Creek: AltaMira Press.
Falk, J., & Dierking, L. (2002). *Lessons Without Limit: How Free-Choice Learning is Transforming Education*. Walnut Creek: AltaMira Press.
Falk, J., & Dierking, L. (Eds.). (1995). *Public Institutions for Personal Learning: Establishing a Research Agenda*. Washington: American Association of Museums.
Falk, J., Dierking, L., & Holland, D. (1995a). How Should We Investigate Learning in Museums? Research Questions and Project Designs. In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 23-30). Washington: American Association of Museums.
Falk, J., Dierking, L., & Holland, D. (1995b). What Do We Think People Learn In Museums? In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 17-22). Washington: American Association of Museums.
Falk, J., Koran, J., Dierking, L., & Dreblow, L. (1985). Predicting Visitor Behaviour. *Curator, 28*, 249-257.
Falk, J., Moussouri, T., & Coulson, D. (1998). The Effect of Visitors' Agendas on Museum Learning. *Curator, 41*(2), 107-120.
Fasoli, L. (2001). *Young Children in the Art Gallery: Excursions as Induction to a Community of Practice.* Unpublished PhD, University of Canberra, Canberra.
Fensham, P., Gunstone, R., & White, R. (Eds.). (1994). *The Content of Science: a constructivist approach to its teaching and learning*. London: Falmer Press.
Fienberg, J., & Leinhardt, G. (2002). Looking Through the Glass: Reflections of Identity in Conversations at a History Museum. In G. Leinhardt & K.

Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 167-211). Mahwah: Lawrence Erlbaum Associates.
Fink, A. (1995a). *How to Analyse Survey Data* (Vol. 8). California: Sage.
Fink, A. (1995b). *How to Sample in Surveys* (Vol. 6). California: Sage.
Fitz-Gibbon, C., & Morris, L. (1987). *How to Analyse Data* (2nd ed.). California: Sage.
Flavell, J. (1977). *Cognitive Development*. New Jersey: Prentice-Hall, Inc.
Fosnot, C. (2005). *Constructivism: Theory, Perspectives, and Practice* (2nd ed.). New York and London: Teachers College Press.
Francis, G. (1999). *Introduction to SPSS for Windows* (2nd ed.). Sydney: Prentice Hall.
Freedman, G. (2000). The Changing Nature of Museums. *Curator, 43*(4), 295-306.
Freire, P. (1970). *Pedagogy of the Oppressed*. New York: The Seabury Press.
Gardner, H. (1993). *Frames of Mind: The Theory of Multiple Intelligences* (2nd ed.). New York: Basic Books.
Gardner, H. (1999). *Intelligence Reframed: Multiple Intelligences for the 21st Century* (2nd ed.). New York: Basic Books.
Gardner, H. (2003). *Multiple Intelligences After Twenty Years.* Paper presented at the American Educational Research Association Conference, Chicago.
Garnett, R. (2002). *The Impact of Science Centres/Museums on Their Surrounding Communities* (unpublished report). Canberra: ASTC/ECSITE.
Gee, J. (2001). Identity as an analytic lens for research in education. *Review of Research in Education, 25*, 99-125.
Gilman, B. (1916). Museum Fatigue. *The Scientific Monthly, 12*, 62-74.
Gilman, B. (1923). *Museum Ideals of Purpose and Methods*. Cambridge: Harvard University Press.
Griffin, D. (1998). Not the Last Hurrah! *Muse, 2-3*, 13-15.
Griffin, J. (1996). *Museums are educational institutions but are they always places of learning?* Paper presented at the Museums Australia Inaugural Conference, Perth.
Griffin, J. (1998). *School-Museum Integrated Learning Experiences in Science: A Learning Journey.* Unpublished PhD, University of Technology, Sydney.
Griffin, J. (2004). Research on Students and Museums: Looking More Closely at the Students in School Groups. *Science Education, 88*(Supplement 1), S60-S70.
Griffin, J., Kelly, L., Hatherly, J., & Savage, G. (2005). Museums actively researching visitor experiences and learning (MARVEL): a methodological study. *Open Museum Journal, 7*.
Groundwater-Smith, S., & Kelly, L. (2003). *As We See It: Improving Learning at the Museum.* Paper presented at the British Educational Research Association Conference, Edinburgh.
Gunther, C. (1994). Museumgoers: life-styles and learning characteristics. In E. Hooper-Greenhill (Ed.), *The Educational Role of the Museum* (pp. 286-297). London: Routledge.
Gurian, E. (1999). What is the object of this exercise? A meandering exploration of the many meanings of objects in museums. *Daedalus, 128*(3), 163-183.

Haley Goldman, K., & Haley Goldman, M. (2005). *Whither the Web: Professionalism and Practices for the Changing Museum.* Paper presented at the Museums and the Web Annual Conference, Vancouver.
Haley Goldman, K., & Wadman, M. (2002). *"There's Something Happening Here, what it is isn't exactly clear".* Paper presented at the Museums and the Web Annual Conference, Boston.
Hall, S. (1996). Who needs "identity"? In S. Hall & P. du Guy (Eds.), *Questions of cultural identity* (pp. 1-18). London: Sage.
Hall, S., & du Guy, P. (Eds.). (1996). *Questions of cultural identity*. London: Sage.
Hand, B., Treagust, D., & Vance, K. (1997). Student Perceptions of the Social Constructivist Classroom. *Science Education, 81*(5), 561-575.
Hansman, C. (2001). Context-Based Adult Learning. In S. Merriam (Ed.), *The New Update on Adult Learning Theory* (pp. 43-52). San Francisco: Jossey-Bass.
Harkin, M. (1995). Modernist Anthropology and Tourism of the Authentic. *Annals of Tourism Research, 22*(3), 650-670.
Harlen, W. (1996). *The teaching of science in primary schools* (2nd ed.). London: D. Fulton Publishers.
Hein, G. (1991). *Constructivist Learning Theory.* Paper presented at the ICOM/CECA Annual Conference, Jerusalem.
Hein, G. (1992). Constructivist Learning Theory, *Developing Museum Exhibitions for Lifelong Learning* (pp. 30-34). London: The Stationery Office.
Hein, G. (1995). The constructivist museum. *Journal of Education in Museums, 15*, 1-10.
Hein, G. (1997a). *The Maze and the Web: Implications of Constructivist Theory for Visitor Studies.* Paper presented at the Visitor Studies Association Conference, Alabama.
Hein, G. (1997b). A Reply to Miles' Commentary on Constructivism. *Visitor Behaviour, 12*(3&4), 14-15.
Hein, G. (1998). *Learning in the Museum*. London: Routledge.
Hein, G. (1999). Is Meaning Making Constructivism? Is Constructivism Meaning Making? *The Exhibitionist, 18*(2), 15-18.
Hein, G., & Alexander, M. (1998). *Museums: Places of Learning*. Washington: American Association of Museums.
Henerson, M., Lyons Morris, L., & Taylor Fitz-Gibbon, C. (1987). *How to measure attitudes: Program Evaluation Kit No. 6*. California: Sage.
Hergenhahn, B. (1982). *An Introduction to Theories of Learning* (2nd ed.). Englewood Cliffs: Prentice Hall Inc.
Hergenhahn, B., & Olson, M. (1997). *An Introduction to Theories of Learning* (5th ed.). Englewood Cliffs: Prentice Hall Inc.
Hicks, M. (2005). 'A whole new world': the young person's experience of visiting Sydney Technological Museum. *museum and society, 3*(2), 66-80.
Hilgard, E., Atkinson, R., & Atkinson, R. (1979). *Introduction to Psychology* (7th ed.). New York: Harcourt Brace Jovanovich, Inc.
Hilke, D. (1989). The Family as a Learning System: An Observational Study of Families in Museums. In B. Butler & M. Sussman (Eds.), *Museum Visits and Activities for Family Life Enrichment* (pp. 101-129). New York: Haworth Press.

Hilke, D. (1993). Quest for the perfect methodology: a tragi-comedy in four acts. In S. Bicknell & G. Farmelo (Eds.), *Museum visitor studies in the 90s* (pp. 67-74). London: Science Museum.
Hood, M. (1983). Staying Away: Why People Choose Not to Visit Museums. *Museum News, 61*(4), 50-57.
Hood, M. (1995). Audience Research Tell Us Why Visitors Come to Museums - and why they don't. In C. Scott (Ed.), *Evaluation and Visitor Research in Museums: Towards 2000* (pp. 3-10). Sydney: Powerhouse Publishing.
Hooper-Greenhill, E. (1999). *Museums and Interpretive Communities.* Paper presented at the Musing on Learning Seminar, Australian Museum, Sydney.
Hooper-Greenhill, E. (2000). *Museums and the Interpretation of Visual Culture*. London: Routledge.
Hooper-Greenhill, E. (2003). *Museums and Social Value: Measuring the Impact of Learning in Museums.* Paper presented at the ICOM-CECA Annual Conference, Oaxaca.
Hooper-Greenhill, E. (2004a). Learning from Culture: The Importance of the Museums and Galleries Education Program (Phase 1) in England. *Curator, 47*(4), 428-449.
Hooper-Greenhill, E. (2004b). Measuring Learning Outcomes in Museums, Archives and Libraries: The Learning Impact Research Project (LIRP). *International Journal of Heritage Studies, 10*(2), 151-174.
Hooper-Greenhill, E. (Ed.). (1994). *The Educational Role of the Museum.* London: Routledge.
Huberman, A., & Miles, M. (1998). Data Management and Analysis Methods. In N. Denzin & Y. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials* (pp. 179-210). California: Sage.
Interview Transcript 2.2. (11/06/2000). *Pilot Sample 2, Interview #2.* Unpublished manuscript.
Interview Transcript 3.1. (22/11/00). *Brenda*. Unpublished manuscript.
Interview Transcript 3.2. (13/12/00). *Rosemary*. Unpublished manuscript.
Interview Transcript 3.3. (8/01/01). *Mavis*. Unpublished manuscript.
Interview Transcript 3.4. (24/02/01). *Scott*. Unpublished manuscript.
Interview Transcript 3.5. (5/03/01). *Stephen*. Unpublished manuscript.
Interview Transcript 3.6. (5/03/01). *Doug*. Unpublished manuscript.
Interview Transcript 3.7. (13/03/01). *Louise*. Unpublished manuscript.
Interview Transcript 3.8. (13/03/01). *Dennis*. Unpublished manuscript.
Ivanova, E. (2003). Changes in Collective Memory: the Schematic Narrative Template of Victimhood in Kharkiv Museums. *Journal of Museum Education, 28*(1), 17-22.
Janesick, V. (1998). The Dance of Qualitative Research Design: Metaphor, Methodolatry, and Meaning. In N. Denzin & Y. Lincoln (Eds.), *Strategies of Qualitative Inquiry* (pp. 35-55). California: Sage.
Jansen-Verbeke, M., & van Rekom, J. (1996). Scanning Museum Visitors. *Annals of Tourism Research, 23*(2), 364-375.
Jeffery-Clay, K. (1997). Constructivism in Museums: How Museums Create Meaningful Learning Environments. In S. Paris (Ed.), *Understanding the Visitor Experience: Theory and Practice, Part 2, Journal of Museum Education* (Vol. 23, pp. 3-7). Washington: Museum Education Roundtable.

Jeffery-Clay, K. (1998). Constructivism in Museums: How Museums Create Meaningful Learning Environments. *Journal of Museum Education, 23*, 3-7.

Kelly, L. (1996). Jumping in Head First! - Implementing a New Approach to Public Program Evaluation. In C. Scott (Ed.), *Evaluation and Visitor Research in Museums: Towards 2000* (pp. 161-168). Sydney: Powerhouse Publishing.

Kelly, L. (2001). *Developing a model of museum visiting.* Paper presented at the Museums Australia Annual Conference, Canberra.

Kelly, L. (2005). Evaluation, Research and Communities of Practice: Program Evaluation in Museums. *Archival Science, 4*(1-2), 45-69.

Kelly, L. (2006). Museums as Sources of Information and Learning: The Decision-Making Process. *Open Museum Journal, 8*.

Kelly, L., Cook, C., & Gordon, P. (2006). Building Relationships Through Communities of Practice: Museums and Indigenous People. *Curator, 49*(2), 217-234.

Kelly, L., & Gordon, P. (2002). Developing a Community of Practice: Museums and Reconciliation in Australia. In R. Sandell (Ed.), *Museums, Society, Inequality* (pp. 153-174). London: Routledge.

Kelly, L., Savage, G., Griffin, J., & Tonkin, S. (2004). *Knowledge Quest: Australian families visit museums*. Sydney: Australian Museum.

Kelly, L., Savage, G., Landman, P., & Tonkin, S. (2002). *Energised, engaged, everywhere: older Australians and museums*. Sydney: Australian Museum.

Kidd, W. (2002). *Culture and Identity*. Hampshire: Palgrave.

Kilian, M. (2001, 12 August). The culture of popular Science or 'Star Wars'? Museums struggle to align education and entertainment. *Chicago Tribune*.

Kimmelman, M. (2001, 26 August). Museums in a Quandary: Where Are the Ideals? *New York Times*.

Kinnear, T., & Taylor, J. (1996). *Marketing Research: An Applied Approach* (5th ed.). New York: McGraw-Hill, Inc.

Kotler, N., & Kotler, P. (1998). *Museum Strategy and Marketing: designing missions, building audiences, generating revenue and resources*. San Francisco: Jossey-Bass.

Kotler, P., FitzRoy, P., & Shaw, R. (1980). *Australian Marketing Management* (4th ed.). Sydney: Prentice-Hall.

Kropf, M. (1992). The family museum experience: a review of the literature. In S. Nichols (Ed.), *Patterns in Practice: Selections from the Journal of Museum Education* (pp. 222-229). Washington: Museum Education Roundtable.

Lake Snell Perry & Associates. (2001). *Americans Identify A Source of Information They Can Really Trust*. Washington: American Association of Museums.

Landman, P., Fishburn, K., Kelly, L., & Tonkin, S. (2005). *Many voices making choices: Museum audiences with disabilities*. Sydney: Australian Museum.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Leinhardt, G., Crowley, K., & Knutson, K. (Eds.). (2002). *Learning Conversations in Museums*. Mahwah: Lawrence Erlbaum Associates.
Leinhardt, G., & Gregg, M. (2002). Burning Buses, Burning Crosses: Student Teachers See Civil Rights. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 139-166). Mahwah: Lawrence Erlbaum Associates.
Leinhardt, G., & Knutson, K. (2004). *Listening in on museum conversations*. Walnut Creek: Altamira Press.
Leinhardt, G., Knutson, K., & Crowley, K. (2003). Museum Learning Collaborative Redux. *Journal of Museum Education, 28*(1), 23-31.
Leinhardt, G., Tittle, C., & Knutson, K. (2002). Talking to Oneself: Diaries of Museum Visits. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 103-133). Mahwah: Lawrence Erlbaum Associates.
Levinson, D. (1990). A theory of life structure development in adulthood. In C. Alexander & E. Langer (Eds.), *Higher Stages of Human Development: Perspectives on Adult Growth* (pp. 35-53). New York: Oxford University Press.
Loomis, R. (1987). *Museum Visitor Evaluation: New Tool for Management*. Nashville: American Association for State and Local History.
Lynch, R., Burton, C., Scott, C., Wilson, P., & Smith, P. (2000). *Leisure and Change: implications for museums in the 21st century*. Sydney: Powerhouse Publishing.
Malone, J. (1990). *Theories of learning: a historical approach*. Belmont: Wadsworth Publishing Company.
Martin, A. (2003). Boys and Motivation. *The Australian Educational Researcher, 30*(3), 43-65.
Marton, F., & Booth, S. (1996). The Learner's Experience of Learning. In D. Olsen & N. Torrance (Eds.), *The Handbook of Education and Human Development: New Models of Learning, Teaching and Schooling* (pp. 534-563). Cambridge: Blackwell Publishers Ltd.
Marton, F., Dall'Alba, G., & Beaty, E. (1993). Conceptions of Learning. *International Journal of Educational Research, 19*(3), 277-300.
Marton, F., Hounsell, D., & Entwistle, N. (Eds.). (1997). *The Experience of Learning: Implications for Teaching and Studying in Higher Education* (2nd ed.). Edinburgh: Scottish Academic Press.
Marton, F., & Saljo, R. (1997). Approaches to Learning. In F. Marton & D. Hounsell & N. Entwistle (Eds.), *The Experience of Learning: Implications for Teaching and Studying in Higher Education* (pp. 39-58). Edinburgh: Scottish Academic Press.
Marton, F., & Svensson, L. (1979). Conceptions of Research in Student Learning. *Higher Education, 8*(4), 471-486.
Masberg, B., & Silverman, L. (1996). Visitor Experiences at Heritage Sites: A Phenomenological Approach. *Journal of Travel Research, 34*(4), 20-25.
Maslow, A. (1999). *Toward a Psychology of Being* (3rd ed.). New York: John Wiley & Sons, Inc.
Mason, J. (1996). *Qualitative Researching*. London: Sage.
Matheson, D., & Matheson, C. (1996). Lifelong Learning and Lifelong Education: a critique. *Research in Post-Compulsory Education, 1*(2), 219-236.

Matusov, E., & Rogoff, B. (1995). Evidence of Development from People's Participation in Communities of Learners. In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 97-104). Washington: American Association of Museums.

McIntyre, J. (1998). Arguing for an interpretive method. In J. Higgs (Ed.), *Writing Qualitative Research* (pp. 161-174). Sydney: Hampden Press.

McLaughlin, H. (1997). The Pursuit of Memory: Museums and the Denial of the Fulfilling Sensory Experience. *Journal of Museum Education, 23*(3), 10-12.

McLean, K. (2003). *In the cave, Around the campfire, And at the well.* Paper presented at the ICOM-CECA Annual Conference, Oaxaca.

McManus, P. (1987). It's the company you keep...the social determination of learning-related behaviour in a science museum. *Museum Management and Curatorship, 6*, 263-270.

McManus, P. (1988). Good companions: More on the Social Determination of Learning-Related Behaviour in a Science Museum. *Museum Management and Curatorship, 7*, 37-44.

McManus, P. (1989). Oh, Yes, They Do: How Museum Visitors Read Labels and Interact with Exhibit Texts. *Curator, 32*(3), 174-189.

McManus, P. (1991a). Making Sense of Exhibits. In G. Kavanagh (Ed.), *Museums languages: objects and texts* (pp. 33-46). London: Leicester University Press.

McManus, P. (1991b). Towards Understanding the Needs of Museum Visitors. In G. Lord & B. Lord (Eds.), *The Manual of Museum Planning* (pp. 35-52). London: HMSO.

McManus, P. (1993). Memories as Indicators of the Impact of Museum Visits. *Museum Management and Curatorship, 12*, 367-380.

McManus, P. (1994). Families in Museums. In R. Miles & L. Zavala (Eds.), *Towards Museums of the Future: New European Perspectives*. London: Routledge.

Merriam, S., & Simpson, E. (1995). *A Guide to Research for Educators and Trainers of Adults* (2nd ed.). Malabar: Krieger.

Merriman, N. (1989). Museum Visiting as a Cultural Phenomenon. In P. Vergo (Ed.), *The New Museology* (pp. 149-171). London: Reaktion Books.

Miles, M., & Huberman, A. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Newbury Park: Sage.

Miles, R. (1993). Grasping the greased pig: evaluation of educational exhibits. In S. Bicknell & G. Farmelo (Eds.), *Museum visitor studies in the 90s* (pp. 24-33). London: Science Museum.

Miles, R. (1997). No Royal Road to Learning: A Commentary on Constructivism. *Visitor Behaviour, 12*(3&4), 7-13.

Mintz, A. (1994). That's Edutainment! *Museum News, November/December*.

Mitchell, N. (1999). *The Buying Decision Process of Families Visiting the Australian Museum - a focus on problem recognition and information search* (unpublished report). Sydney: Australian Museum.

Moore, K. (1997). *Museums and Popular Culture*. London: Cassell.

Morgan, A., & Beaty, L. (1997). The World of the Learner. In F. Marton & D. Hounsell & N. Entwistle (Eds.), *The Experience of Learning: Implications for Teaching and Studying in Higher Education* (2nd ed., pp. 217-237). Edinburgh: Scottish Academic Press.

Morrissey, K. (2002). Pathways Among Objects and Museum Visitors. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 285-299). Mahwah: Lawrence Erlbaum Associates.

Moussouri, T. (1997). *Family Agendas and Family Learning in Hands-On Museums.* Unpublished PhD, University of Leicester, Leicester.

Newhouse, V. (1998). *Towards a New Museum*. New York: The Monacelli Press Inc.

Norton, L., & Crowley, C. (1995). Can students be helped how to learn? an evaluation of an Approaches to Learning program for first year degree students. *Higher Education, 29*(3), 307-328.

Novak, J., & Gowin, D. (1984). *Learning how to learn*. New York: Cambridge University Press.

Ogbu, J. (1992). Understanding cultural diversity and learning. *Educational Researcher, 21*(8), 5-14.

Ogbu, J. (1995). The Influence of Culture on Learning and Behaviour. In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 79-95). Washington: American Association of Museums.

Osborne, R., & Freyberg, P. (1985). *Learning in science: the implications of children's science*. Auckland: Heinemann.

Osgood, C. (1969). The Nature and Measurement of Meaning. In Snider & Osgood (Eds.), *Semantic Differential Technique* (pp. 3-41). Chicago: Aldine Publishing Company.

Osgood, C., & Suci, G. (1969). Factor Analysis of Meaning. In J. Snider & C. Osgood (Eds.), *Semantic Differential Technique* (pp. 42-55). Chicago: Aldine Publishing Company.

Packer, J. (2002). Motivational factors and the visitor experience: A comparison of museums and other contexts. In J. Barrett (Ed.), *Proceedings of UNCOVER - graduate research in the museum sector Conference 2002* (pp. 191-197). Sydney: Australian Museum and University of Sydney.

Packer, J. (2003). Motivational factors and the visitor experience: A comparison of museums and other contexts. In L. Kelly & J. Barrett (Eds.), *Proceedings of UNCOVER - graduate research in the museum sector Conference 2002* (pp. 191-197). Sydney: Australian Museum and University of Sydney.

Packer, J. (2004). *Motivational Factors and the Experience of Learning in Educational Leisure Settings.* Unpublished PhD, Queensland University of Technology, Brisbane.

Packer, J., & Ballantyne, R. (2002). Motivational Factors and the Visitor Experience: A Comparison of Three Sites. *Curator, 45*(2), 183-198.

Packer, J., & Ballantyne, R. (2005). Solitary vs. Shared: Exploring the Social Dimension of Museum Learning. *Curator, 48*(2), 177-192.

Paris, S. (1997a). Situated Motivation and Informal Learning. *Journal of Museum Education, 22*, 22-27.

Paris, S. (Ed.). (1997b). *Understanding the Visitor Experience: Theory and Practice, Part 1*. Washington: Journal of Museum Education.

Paris, S. (Ed.). (1998). *Understanding the Visitor Experience: Theory and Practice, Part 2*. Washington: Journal of Museum Education.

Paris, S. (Ed.). (2002). *Perspectives on Object-Centered Learning in Museums*. Mahwah: Lawrence Erlbaum Associates.

Paris, S., Byrnes, J., & Paris, A. (2001). Constructing theories, identities and actions of self-regulated learners. In B. Zimmerman & D. Schunk (Eds.), *Self-regulated learning and academic achievement* (2nd ed., pp. 253-287). Mahwah: Lawrence Erlbaum Associates.

Paris, S., & Hapgood, S. (2002). Children Learning with Objects in Informal Learning Environments. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 37-54). Mahwah: Lawrence Erlbaum Associates.

Paris, S., & Mercer, M. (2002). Finding Self in Objects: Identity Exploration in Museums. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 401-423). Mahwah: Lawrence Erlbaum Associates.

Park, A. (1994). *Individual commitment to lifelong learning: individuals' attitudes: report on the quantitative phase. Research series No. 32*. Sheffield: Employment Department.

Patton, M. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). California: Sage.

Pervin, L. (1984). *Personality: Theory and Research* (4th ed.). New York: John Wiley & Sons Inc.

Piaget, J. (1952). *Origins of Intelligence*. New York: International Universities Press.

Piaget, J. (1963). *Psychology of Intelligence*. New Jersey: Littlefield, Adams.

Pierroux, P. (2003). Communicating Art in Museums. *Journal of Museum Education, 28*(1), 3-7.

Pine, B., & Gilmore, J. (1999). The Experience Economy. *Museum News, March/April*, 45-48.

Piscitelli, B., & Weier, K. (2002). Learning With, Through, and About Art: The Role of Social Interactions. In S. Paris (Ed.), *Perspectives on Object-Centered Learning in Museums* (pp. 121-151). Mahwah: Lawrence Erlbaum Associates.

Pitman, B. (Ed.). (1999). *Presence of Mind: Museums and the Spirit of Learning*. Washington: American Association of Museums.

Pramling, I. (1996). Understanding and Empowering the Child as a Learner. In D. Olsen & N. Torrance (Eds.), *The Handbook of Education and Human Development: New Models of Learning, Teaching and Schooling* (pp. 534-563). Cambridge: Blackwell Publishers Ltd.

Prentice, R. (1994). Perceptual Deterrents to Visiting Museums and Other Heritage Attractions. *Museum Management and Curatorship, 13*, 264-279.

Prentice, R. (1998). Recollections of Museum Visits: A Case Study of Remembered Cultural Attraction Visiting on the Isle of Man. *Museum Management and Curatorship, 17*(1), 41-64.

Prentice, R., Davies, A., & Beeho, A. (1997). Seeking Generic Motivations for Visiting and Not Visiting Museums and Like Cultural Attractions. *Museum Management and Curatorship, 16*(1), 45-70.

Prentice, R., Witt, S., & Hamer, C. (1998). Tourism as Experience. The Case of Heritage Parks. *Annals of Tourism Research, 25*(1), 1-24.

Pressick-Kilborn, K., & Walker, R. (2002). The Social Construction of Interest in a Learning Community. In D. McInerney & S. Van Etten (Eds.),

Research on sociocultural influences on motivation and learning (Vol. 2, pp. 153-182). Greenwich: Information Age Publishing.
Prince, D. (1990). Factors Influencing Museum Visits: An Empirical Evaluation of Audience Selection. *Museum Management and Curatorship, 9*, 149-168.
Prosser, M. (1994). Some experiences of using phenomenographic research methodology in the context of research in teaching and learning. In J. Bowden & E. Walsh (Eds.), *Phenomenographic Research: Variations in Method* (pp. 31-43). Melbourne: RMIT.
Puchner, L., Rapoport, R., & Gaskins, S. (2001). Learning in Children's Museums: Is It Really Happening? *Curator, 44*(3), 237-259.
Ramsden, P. (1992). *Learning to Teach in Higher Education*. London: Routledge.
Rennie, L., & Johnston, D. (2004). The Nature of Learning and Its Implications for Research on Learning from Museums. *Science Education, 88*(Supplement 1), S4-S16.
Rice, D., & Yenawine, P. (2002). A Conversation on Object-Centred Learning in Art Museums. *Curator, 45*(4), 289-301.
Richardson, L. (2000). Assessing Alternative Modes of Qualitative and Ethnographic Research: How Do We Judge? Who Judges? *Qualitative Inquiry, 6*(2), 251-252.
Roberts, L. (1991). Affective Learning, Affective Experience: What Does It Have to Do With Museum Education? *Visitor Studies: Theory, Research and Practice, 4*, 162-168.
Roberts, L. (1997). *From Knowledge to Narrative: Educators and the Changing Museum*. Washington: Smithsonian Institution Press.
Roberts, L. B. (2001). Outcomes and Experience: New Priorities for Museums. *Curator, 44*(1), 21-26.
Rogoff, B. (1999). Introduction: Thinking and Learning in Social Context. In B. Rogoff & J. Lave (Eds.), *Everyday Cognition: Its Development in Social Context* (pp. 1-8). New York: toExcel.
Roschelle, J. (1995). Learning in Interactive Environments: Prior Knowledge and New Experience. In J. Falk & L. Dierking (Eds.), *Public Institutions for Personal Learning* (pp. 37-51). Washington: American Association of Museums.
Rosenthal, E., & Blankman-Hetrick, J. (2002). Conversations Across Time: Family Learning in a Living History Museum. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 305-332). Mahwah: Lawrence Erlbaum Associates.
Rounds, J. (2002). Storytelling in science exhibits. *Exhibitionist, 21*(2), 40-43.
Rounds, J. (2004). Strategies for the Curiosity-Driven Museum Visitor. *Curator, 47*(4), 389-412.
Rounds, J. (2006). Doing Identity Work in Museums. *Curator, 49*(2), 133-150.
Rowe, S. (1998). *Learning Talk: Understanding how people talk and think about learning in the St. Louis Science Centre* (unpublished report). St. Louis: St. Louis Science Centre.
Rubenson, K. (2000). *Adults' Readiness to Learn: Questioning Lifelong Learning for All.* Paper presented at the Australian Association for Educational Research, Sydney.

Ryan, C., & Glendon, I. (1998). Application of Leisure Motivation Scale to Tourism. *Annals of Tourism Research, 25*, 169-184.
Sachatello-Sawyer, B., & Fellenz, R. (2000). Coming of Age: A National Study of Adult Museum Programs. *Curator, 43*(2), 147-156.
Sachatello-Sawyer, B., & Fellenz, R. (2001). Listening to Voices of Experience: A National Study of Adult Museum Programs. *Journal of Museum Education, 26*(1), 16-21.
Sachatello-Sawyer, B., Fellenz, R., Burton, H., Gittings-Carlson, L., Lewis-Mahony, J., & Woolbaught, W. (2002). *Adult Museum Programs: Designing Meaningful Experiences*. Lanham: AltaMira Press.
Saljo, R. (1979). Learning About Learning. *Higher Education, 8*(4), 443-451.
Schauble, L., Beane, D., Coates, G., Martin, L., & Sterling, P. (1996). Outside the Classroom Walls: Learning in Informal Environments. In L. Schauble & R. Glaser (Eds.), *Innovations in Learning: New Environments for Education* (pp. 5-24). Mahwah: Lawrence Erlbaum Associates.
Schauble, L., Gleason, M., Lehrer, R., Bartlett, K., Petrosino, A., Allen, A., Clinton, K., Ho, E., Jones, M., Lee, Y., Phillips, J., Siegler, J., & Street, J. (2002). Supporting Science Learning in Museums. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 425-452). Mahwah: Lawrence Erlbaum Associates.
Schauble, L., Leinhardt, G., & Martin, L. (1997). A Framework for Organising a Cumulative Research Agenda in Informal Learning Contexts. *Journal of Museum Education, 22*, 3-8.
Schmeck, R. (Ed.). (1988). *Learning Strategies and Learning Styles*. New York: Plenum Press.
Schwandt, T. (1998). Constructivist, Interpretivist Approaches to Human Inquiry. In N. Denzin & Y. Lincoln (Eds.), *The Landscape of Qualitative Research* (pp. 221-259). London: Sage.
Scott, C., & Burton, C. (2000). What do we seek in our leisure? *Museum National*(May), 26.
Screven, C. (1990). Uses of Evaluation Before, During and After Exhibit Design. *ILVS Review, 1*(2), 36-66.
Screven, C. (1995). Visitor-based exhibit planning: a question of survival. In C. Scott (Ed.), *Evaluation and Visitor Research in Museums: Towards 2000* (pp. 81-82). Sydney: Powerhouse Publishing.
Seagram, B., Patten, L., & Lockett, C. (1993). Audience Research and Exhibit Development: A Framework. *Museum Management and Curatorship, 12*, 29-41.
Sedzielarz, M. (2003). Watching the Chaperones: An Ethnographic Study of Adult-Child Interactions in School Field Trips. *Journal of Museum Education, 28*(2), 20-24.
Senge, P. M. (1992). *The Fifth Discipline: The art and practice of the learning organisation*. Sydney: Random House Australia.
Serrell, B. (1996). *Exhibit Labels: An Interpretive Approach*. Walnut Creek: AltaMira Press.
Serrell, B. (1997). Paying Attention: The Duration and Allocation of Visitors' Time in Museum Exhibitions. *Curator, 40*(2), 108-125.
Serrell, B. (1998). *Paying attention: Visitors and museum exhibitions*. Washington: American Association of Museums.

Sfard, A., & Prusak, A. (2005). Telling Identities: In Search of an Analytic Tool for Investigating Learning as a Culturally Shaped Activity. *Educational Researcher, 34*(4), 14-22.
Shaffer, D. (1979). *Social and Personality Development.* Monterey: Brooks/Cole Publishing Company.
Silverman, D. (1993). *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*. California: Sage.
Silverman, D. (2000). *Doing Qualitative Research: A Practical Handbook.* California: Sage.
Silverman, L. (1995). Visitor Meaning Making in Museums for a New Age. *Curator, 38*(3), 161-169.
Skramstad, H. (1999). An Agenda for American Museums in the Twenty-First Century. *Daedalus, 128*(3), 109-128.
Spock, D. (2006). The Puzzle of Museum Educational Practice: A Comment on Rounds and Falk. *Curator, 49*(2), 167-180.
Stainton, C. (2002). Voices and Images: Making Connections Between Identity and Art. In G. Leinhardt & K. Crowley & K. Knutson (Eds.), *Learning Conversations in Museums* (pp. 213-257). Mahwah: Lawrence Erlbaum Associates.
Stanton, S. (1999). Museums, Families and Cultural Models. *Visitor Studies Today!, 2*(3), 6-9.
Stevens, R., & Martell, S. (2003). Leaving a Trace: Supporting Museum Visitor Interaction and Interpretation with Digital Media Annotation Systems. *Journal of Museum Education, 28*(2), 25-31.
Strahan, R. (Ed.). (1979). *Rare and Curious Specimens: An Illustrated History of the Australian Museum 1827-1979*. Sydney: The Australian Museum.
Strauss, A., & Corbin, J. (1998a). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd ed.). California: Sage.
Strauss, A., & Corbin, J. (1998b). Grounded Theory Methodology: An Overview. In N. Denzin & Y. Lincoln (Eds.), *Strategies of Qualitative Inquiry* (pp. 158-183). California: Sage.
Swanagan, J. (2000). Factors Influencing Zoo Visitors' Conservation Attitudes and Behaviour. *The Journal of Environmental Education, 31*(4), 26-31.
Taylor, P. (1996). Reflections on Students' Conceptions of Learning and Perceptions of Learning Environments. *Higher Education Research & Development, 15*(2), 223-237.
Taylor, S., & Spencer, E. (1994). *Individual commitment to lifelong learning: individuals' attitudes: report on the qualitative phase. Research series No. 31*. Sheffield: Employment Department.
Tian, S., Crompton, J., & Witt, P. (1996). Integrating Constraints and Benefits to Identify Responsive Target Markets for Museum Attractions. *Journal of Travel Research, Fall*, 34-45.
Trulove, J. (2000). *Designing the New Museum: Building a Destination.* Gloucester: Rockport Publishers Inc.
Tynjala, P. (1997). Developing Education Students' Conceptions of the Learning Process in Different Learning Environments. *Learning and Instruction, 7*(3), 277-292.

Usher, R. (1996). A critique of the neglected epistemological assumptions of education research. In D. Scott & R. Usher (Eds.), *Understanding Educational Research* (pp. 9-32). London: Routledge.
Usher, R. (1997). Telling a story about research as story-telling: Postmodern approaches to social research. In G. McKenzie & J. Powell & R. Usher (Eds.), *Understanding Social Research: Perspectives on Methodology and Practice* (pp. 27-41). London: Falmer Press.
van Rossum, E., Diejkers, R., & Hamer, R. (1985). Students' Learning Conceptions and Their Interpretation of Significant Educational Concepts. *Higher Education, 14*(6), 617-641.
van Rossum, E., & Schenk, S. (1984). The Relationship Between Learning Conception, Study Strategy and Learning Outcome. *British Journal of Educational Psychology, 54*, 73-83.
Vander Zanden, J., & Pace, A. (1984). *Educational Psychology: In Theory and Practice* (2nd ed.). New York: Random House.
Vygotsky, L. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge: Harvard University Press.
Watson, L. (1999). *Lifelong Learning in Australia: Analysis and Prospects. Discussion Paper No. 1*. Canberra: University of Canberra.
Weil, S. (1994). Creampuffs and Hardball: Are You Really Worth What You Cost? *Museum News, 73*(5), 42-44, 62.
Weil, S. (1995). *A Cabinet of Curiosities: Inquiries Into Museums and Their Prospects*. Washington: Smithsonian Institution Press.
Weil, S. (1997). The Museum and The Public. *Curator, 16*(3), 257-271.
Weil, S. (1999). From Being *about* Something to Being *for* Somebody: The Ongoing Transformation of the American Museum. *Daedalus, 128*(3), 229-258.
Weil, S. (2002). *Making Museums Matter*. Washington: Smithsonian Institution Press.
Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.
Wenger, E., & Snyder, W. (2000). *Learning in Communities* [website]. LiNE Zine. Retrieved 18 February, 2002, from the World Wide Web: http://www.linezine.com/1/features/ewwslc.htm
Wertsch, J. (1997). Narrative tools of history and identity. *Culture and Psychology, 3*(1), 5-20.
Witcomb, A. (2003). *Re-Imagining the Museum: Beyond the Mausoleum*. London: Routledge.
Woolfolk, A. (1998). *Educational Psychology* (7th ed.). Boston: Allyn and Bacon.
Worts, D. (1996). Visitors Make Their Own Meaning. In G. Durbin (Ed.), *Developing Museum Exhibitions for Lifelong Learning* (pp. 123-130). London: The Stationery Office for the Group for Education in Museums.
Yates, L. (2004). *What Does Good Educational Research Look Like?* Berkshire: Open University Press.
Zervos, C. (2003). Cross-Linked learning: How does computer technology impact students' learning in visual art theory? In L. Kelly & J. Barrett (Eds.), *Proceedings of UNCOVER - graduate research in the museum sector Conference 2002* (pp. 93-100). Sydney: Australian Museum and University of Sydney.