Research on Students and Museums: Looking More Closely at the Students in School Groups

JANETTE GRIFFIN
University of Technology, Sydney, New South Wales, Australia

Received 27 August 2003; revised 29 March 2004; accepted 7 April 2004

DOI 10.1002/sce.20018
Published online in Wiley InterScience (www.interscience.wiley.com).

ABSTRACT: This paper surveys research over the past decade on school group visits to museums. By shifting attention to students’ views about field trips, to their socially negotiated learning behaviors during field trips and the interaction between learning in the classroom and in the museum, this research has afforded a deeper understanding of the nature of learning in these contexts. This paper explores these aspects through a look at what the literature tells us about the similarities and differences between how families and students learn in museums, then investigates this further through the voices of adults and students in museums. The impact of the valuing and definition of learning in museums by students and teachers leads to discussion of boundary crossings between museums and schools.


INTRODUCTION

School field trips1 to museums2 have been researched for more than 30 years. Three key aspects dominated the research through the early 1990s: the overall educational value of the trips; the impact of preparing for field trips; and early studies into the complexity of elements that influenced student learning.

Some studies investigating the intrinsic value of field trips indicated that student groups who visited museums showed clear cognitive gain, compared with those who had not (e.g. Stronck, 1983) and that those classes that visited museums expressed more positive attitudes and motivation toward learning (e.g. Orion & Hofstein, 1991), while others found no improvement in cognitive or affective learning (e.g. Borun & Flexer, 1983). Teachers’ views of visits to museums generally emphasized enrichment or a change of pace (e.g. Gottfried, 1980), rather than essential connection to the curriculum. Three aspects of pre-visit preparation that influenced learning were extensively discussed: the students’ prior knowledge (e.g. Feher & Rice, 1985); specific classroom preparation for cognitive learning.

Correspondence to: Janette Griffin; e-mail: janette.griffin@uts.edu.au

1 The focus here is on single day field trips led largely by the teacher through the general displays.
2 “Museums” is used in its broadest sense including any out of school learning setting.

© 2004 Wiley Periodicals, Inc.
at the venue (e.g. Gennaro, 1981; Wolins, Jensen, & Ulzheimer, 1992; Stoneberg, 1981); and orientation to the setting to be visited (e.g. Falk & Balling, 1982; Falk & Dierking, 1992). Studies of the impacts of fruitful interactions between the students and the exhibits, other students, and their teachers were becoming more frequent in the late 1980s and early 1990s and qualitative methods became prevalent for probing the learning that took place on field trips under various conditions (e.g. Beiers, 1992; Hilke, 1988; McManus, 1989).

From these studies we learnt that the value of the field trips was equivocal and apparently context specific, preparation improves the chances of learning especially if it involves integration of the school and museum learning and provides opportunities for student involvement. These findings provided a platform and a need for deeper and more extensive research. The earlier studies did not fully address the complexity of the context including the nature of the students’ and the teachers’ perceptions and expectations of learning in informal settings. The more extensive research that had been conducted with family visitors was rarely interrogated for insights on preparing students for museum learning and the social interactions operating within school groups needed addressing.

REFRAMING THE RESEARCH

While it is general, particularly in a school context, to think of learning as meaning cognitive or conceptual change, Schauble et al. (1996) remind us that learning in a museum context “includes outcomes like an expanded sense of aesthetic appreciation, the development of motivation and interest, the formation and refinement of critical standards, and the growth of personal identity” (p. 24). This understanding of learning is consistent with a sociocultural view in which social interaction, cultural norms, and a range of tools and methods are used when assimilating ideas and information. While museums provide opportunities for social interaction and expression of choice in activities, a major impediment to learning during field trips has been that teaching strategies appropriate to a formal setting are often being imposed in museums (Griffin, 1994; Olson, 1999).

The literature on family visitor learning can also provide insights into ways to enhance student learning in museums. Family visitors value their ability to choose what they attend to and exploit this strategy in order to pursue their personal agenda, and to find out things for themselves (Wood, 1996). They spend time scanning displays and selecting the exhibits to which they wish to devote time. Davis and Gardner (1993) describe museums as places where visitors are free to map their own course through the expanse of diverse stimuli. This choice may be shared amongst family members, for example, the role of guiding (or selecting) is shared and rotates among family members although it is most frequently taken by a child (Baillie, 1996). These aspects of agenda, choice and sharing, are consistent with Paris’ (1997) investigation of museums from an educational psychology perspective. He found museums to be places that inherently foster intrinsic motivation and sustained engagement. He sees museums as environments that allow for key conditions for learning, those where people “construct personal meaning, have genuine choices, encounter challenging tasks, take control over their own learning, collaborate with others, and feel positive about their efforts” (Paris, Yambor, & Packard, 1998, p. 271).

Falk and Dierking (2002) have investigated the contexts in which this learning takes place and describe 12 suites of factors within three contexts which they consider fundamental for museum learning.

- Within the Personal Context: motivation and expectations; prior knowledge, interests, and beliefs; choice and control.
• In the Sociocultural Context: within-group social mediation; facilitated mediation by others and cultural background and upbringing.
• In the Physical Context: advance organizers; orientation; architecture and large-scale environment; design; reinforcing events and experiences outside the museum.

The fourth and essential context of time is overlayed across these factors.

Three consistent findings in this research are choice, control, and social collaboration. Rand (2001) formulated a Museum Visitors’ Bill of Rights which incorporates these authors’ views. It includes the rights to comfort, orientation, welcome, enjoyment, socializing, respect, communication, learning, choice and control, challenge and confidence, and revitalization. These dimensions are important to address in school field trip research also.

Specific interest in students’ learning during field trips has grown tremendously in the past 10 years and a major shift in the investigations of such learning in museums over the past decade has involved closer investigation into the learning of the individual students within school groups rather than viewing the group as a single entity. It has increasingly incorporated a sociocultural perspective on learning and there has been an increased emphasis on the students’ learning processes and how they can be facilitated, by paying attention to the students’ views of their learning experiences, rather than details of the field trip program. It has looked more closely at the different impact that the museum staff, the teacher, the students themselves and their peers have on the learning. This paper explores these aspects through three research approaches that have emerged in the last decade: listening to adults and students in museums; understanding how students and teachers value and define learning; and crossing boundaries between schools and museums.

LISTENING TO ADULT AND STUDENT VOICES IN MUSEUMS

Visitor conversations have been increasingly used to reveal the nature of learning in museums. Leinhardt, Crowley, and Knutson (2002) present a significant suite of studies, using a sociocultural perspective, that investigate the meaning making that is revealed through visitor conversations. A range of methodologies was used including diaries, interviews, and taping conversations as visitors moved through exhibits. Findings included the way visitors interpret and enfold their museum experience into their lives (Leinhardt, Tittle, & Knutson, 2002); the depth and analytical content of conversations varies according to entering narrative (Abu-Shumays & Leinhardt, 2002), while personal identities are influenced by visits (e.g. Leinhardt & Gregg, 2002). Allen (2002) at the Exploratorium gives us a measure of the proportion of “learning talk,” which was recorded as about 83% of the time. In contrast to earlier indications that families are primarily interested in social interaction, all of these projects reveal that museum conversations are centered on learning but within a social context. However, only two of these studies included children, and in both cases they were children in family groups.

A number of recent studies have shown that students also value the provision of choice and control in their learning in museums as well as appropriate opportunities for orientation, socializing, and revitalization (Falk & Dierking, 2000; Griffin & Symington, 1997; Paris, 1997; Shelnut, 2000). Piscitelli (1997) worked with young children in an art museum in Brisbane, Australia and she and her colleagues found that given freedom (choice) in their activities “these children considered museums to be exciting, happy places which provide opportunities to learn and gain many ideas” (Piscitelli & Anderson, 2001, p. 7). Brooke and Solomon (2001) described successful visits to a science center by pupils with severe learning difficulties, largely because they were not being told what to do or not do, and were allowed to persevere with tasks that intrigued them.
In a study in Sydney (Watson et al., 2002) where teachers encouraged young children’s interactions with their peers, this interaction was a rich source of motivation for further investigation. They also found that appropriately designed exhibits can promote interaction not just with the exhibit itself but among children. Anderson (1999) found that the social context in and beyond the classroom, before and after the visit, contributed to the learning through a visit to an interactive science center. He showed that prior experiences and personal attitudes, and the activities carried out beyond both the museum and school activities created quite different learning between different members of the same class. Students chose to conduct related activities beyond those provided, hence taking control of their own learning.

School visits specifically planned to match the way in which family groups use museums led to students on field trips enjoying museums as places to learn (Griffin & Symington, 1997). The factors which enabled this learning were purpose, choice, and ownership of learning processes in a social context (Griffin, 1998). The students needed to know why they were gathering the information—how they would use it, they needed some freedom (choice) in the specific aspects of their learning, some ownership of the way in which they were learning, and encouragement to share their learning with classmates and elders, albeit within the framework set by the teacher and/or museum.

School students are not always afforded the opportunity to exploit all of these factors however. Gammon (2001) has described barriers to learning in a museum: activities where there is no obvious reward or motivation for continuing; activities poorly matched to the abilities of the audience; activities that make visitors look foolish; and activities that preclude social interaction. Teachers’ agendas can greatly influence students’ experiences. Kisiel (2001) found that teachers have one of two clear agendas, particularly with regard to worksheet use in museums: a survey agenda and a concept agenda. Those with survey agendas (the majority) used worksheets that had little to do with the classroom curriculum. This dampens motivation, reduces opportunities for linking experiences with prior knowledge, and reduces control and choice in learning. In general, exhibit or program development is still informed by school curricula and orchestrated by teaching staff and rarely by the young people themselves (Shelnut, 2000). Despite these issues, students remember their field trips for a long time after the event—where and when they went, transport, and some aspects of what they did and what they learnt (Falk & Dierking, 1997).

Even deeper insights into adult visitors and students’ approaches to learning can be gleaned by listening intently to their views about learning. In a methodological study looking at ways of determining learning in museums in Sydney and Melbourne, school students have been asked to carry tape recorders with lapel microphones while they visit an exhibition (Griffin, Meehan, & Jay, 2003). The recordings are coded to determine the aspects of learning and non-learning included in the conversations. The results are proving surprising. The tapes have revealed that when moving freely the students are conducting learning-related conversations for over 80% of their time. They are linking what they see to prior experiences and discussing similarities and differences between exhibits. They do much of their “learning talk” as they walk between exhibits, not necessarily while in front of the exhibits where much of the talk involves drawing their friends’ attention to things they are interested in or making simple comments about the exhibits. These same students are being visually observed as they move around the exhibits. The data being gathered in this ongoing study show that a general look at a group of school students can be very misleading when the prominent overall activity is often movement leading to the impression that the students are not involved in learning activities. By looking and listening specifically to individual students, however, a very different pattern appears, with more time engaged with exhibits than would be expected, and with clear evidence that they share their learning with classmates.
Young people are remarkably thoughtful and insightful about their own experiences and have clear ideas on how they would like to learn. Their views cover aspects of choice, social interactions, personal interests, and motivation. In an initial study of school group visits to museums in Sydney (Griffin & Symington, 1997), students in Years 5 and 6 were asked about how they would run field trips if they were in charge. They gave answers such as:

I’d give the children the choice of what they want to do and join everyone together and find out what they want to learn.

Make it for the whole day . . . And let us go where we want and find out what we want to find out.

We’d organize it for longer. We’d be able to go around and do it ourselves, not as many questions, be able to see other things. (Griffin, 1998)

In interviews with Year 10 students following a trip to a museum there was discussion about the use of worksheets and two students’ views provide insights into the reasons that they did not like them:

...because you have to go around looking for the information, you haven’t got time to study the things we want to see

[We didn’t learn anything because] most of it went in through the eyes and out through the pen on to the paper (Griffin, 1998)

In contrast, following a program in which the students prepared their own questions about their class topic before they visited the museum, and were allowed to select what they looked at within particular exhibitions (Griffin, 1998) the following comments were made about the visit:

[This visit was different], because in this one we actually wanted to find out about [animals], on other ones we just went to have a look. (Student C)

This was different because the other [field trips] were more plain educational, where this one was more fun, although it was educational, but it was also fun and you could do things that you liked doing and not walking around, just. (Student R)

Working with children at the Los Angeles County Museum of Natural History and the Los Angeles Zoo, Birney (1995) asked children their views of exhibits and how they liked to learn from them; they described strong views about the social environment. She found that they “define specific social environments as optimal contexts for sharing information and . . . dislike social components (such as crowding) that prevent acquiring new information . . . they appear to associate new knowledge with an increase in their social value . . . they frequently comment that . . . someone who has seen this material is somehow special and can tell others about it” (Birney, 1988, p. 313).

Middlebrooks (1999), interviewing children in New York about what they do and play when on their own, learnt amongst other things, that “They like to have fun—a complex notion that includes feelings of mastery and control” (p. 25). She goes on to say that “all children, and poor kids of color in particular, are disadvantaged by our failure to acknowledge and value how smart they really are. By paying attention to children’s ideas, interests, hopes, and dreams, we in museums can build on important aspects of children’s lives, knowledge and abilities.” (p. 25)
VALUING LEARNING

Research over the last decade also suggests that the valuing of learning in an informal setting may influence approaches to learning in these settings. The student quotes above indicate that they enjoy learning when they have some choice and control over what they are doing. Jensen (1995) has found that children prefer visiting museums with their families rather than with their school class, because they find it a more enjoyable experience with their families. Dierking (1997) has found that family groups declare that they come to museums to enjoy themselves by learning and socializing. Falk, Moussouri, and Coulson (1998) also found that family groups often indicated that they were visiting both for educational reasons and entertainment reasons.

In contrast to the views of family groups, Griffin (1994) found that both teachers and students clearly declared distinct circumstances when and where students were learning and when they were enjoying themselves. There was a strong feeling among students and teachers that learning was related to school activities and in particular it involved reading and writing. Overwhelmingly, both teachers and students indicated that worksheets were “necessary” on field trips. Students said in interviews that they preferred not to use worksheets, and yet commented: but you wouldn’t learn anything if you didn’t. There seemed to be a strong belief that just looking around, although they enjoyed it, did not count as learning.

Other researchers have found that learning is perceived by teachers and students as a compulsory, informative, and individualistic activity, whereas fun is perceived as a voluntary, interactive, and group activity (Tynjala, 1997; Zavarzadeh, 1994). Enjoyment is not always associated with the classroom environment because it is only thought of as a tool or motivator in voluntary participation situations. On the other hand, enjoyment may be part of informal education projects, but these may not be regarding learning as their priority (Schauble et al., 1996). Further, Taylor (1996) has looked at university students’ perceptions of learning and learning environments and found that the students’ prior experiences in formal settings affects their perceptions of informal learning environments as places they would enjoy visiting.

To investigate these apparent anomalies, Dierking and Griffin (2001) have carried out a series of investigations with family groups, and school students using photo stimulus interviews to uncover perceptions of learning and enjoyment in different environments. In these studies the participants were asked to select among photos that showed people who were learning and/or enjoying or both, from a display of photos taken in a variety of school, museum, family, and recreational settings. The children interviewed in school did show that they had clear perceptions of what activities they considered did and did not involve learning. School-related activities were commonly considered learning, as were the presence of a teacher or “teller,” and when the children were “learning how to do” something. Children declared that learning and enjoyment went together when it was fun, they had choice and they were with friends or family. Older children added emphasis on the learning being useful, and actively being involved. Visitors interviewed in the museum were more likely to consider photos of people having fun as learning.

These results agree with the view of Paris et al. (1998) that, “Interest in a topic involves both feeling-related characteristics, such as enjoyment and involvement, and value-related characteristics, such as attributing significance to an activity. . . . When students attribute positive values and feelings to tasks, they are likely to choose them and pursue them vigorously.” (p. 280)
CROSSING BOUNDARIES

Wertsch (2002) emphasizes the different nature of schools and museums suggesting that while they can learn from each other they have different roles. On the other hand Weil (2000) talks of a need to shift toward breaking boundaries between museums and other “like-intended entities” such as schools. There has been an explosion of boundary crossing partnerships in the form of Museum Schools particularly in the USA (Dori & Tal, 2000), but fewer studies of the relationships between museums and single day school group trips.

Both schools and museums “can be places where learning is facilitated through the use of objects, the opportunities to learn are based on the learners’ interests, education includes discovery and/or construction of meaning, and students take responsibility for their own activities” (Hein, 1998, p. 7). While museums provide the requisites for free-choice, socially mediated, constructivist learning, this does not necessarily mean that such learning is being allowed to take place. When teachers take a class to a museum they are working under many constraints: their personal perceptions and expectations; curriculum controls; student wants and needs and logistical considerations (Carter, 2001). Michie (1998) found that teachers were not keen to prepare materials for field trips due to lack of time, and the logistical issues were off-putting. He talks, like many, of the need for professional development with teachers. In addressing these issues, Bell and Rabkin (2002) see the challenge for science centers is to engage teachers and students with experiences that support the core ideas of the curriculum, while enhancing formal educational efforts with experiences that are adapted for the special needs of the audience and the nature of the informal learning environment. Kisiel (2001) found the need for museum educators to help teachers: “The heavy dependence on written text as a source of information and an emphasis of breadth of knowledge over depth of understanding are philosophies often shared by well-intentioned inexperienced teachers. Perhaps we need to look at teachers in museums as well intentioned novices who are using prior museum experience, perhaps from when they were a student, to inform practice” (p. 23).

The boundaries between schools and museums need to be crossed from both sides. There have been a number of studies over the past decade that show ways to close the gap between the so-called formal and informal environments of school and museum. Xanthoudaki (1998) describes the contrast between art museum programs which are aimed at supporting the teacher by “helping teachers help themselves” through discussing and planning programs with and for teachers; and ready-prepared programs which may or may not match the teachers’ or students’ requirements. She describes these two models as “the gallery as classroom resource” (Model 1) and “the gallery as teacher about its own collections” (Model 2) (p. 189). She found that visits to a gallery using Model 1 were more likely to lead to incorporation of the visit into classroom art practice “because of the correspondence between educational programs in the institution and school curriculum requirements” (p. 189). The second model encouraged less incorporation of experiences from the visit into classroom art work. “The success of the ‘three part unit’ of preliminary preparation, visit and follow-up work, depends on the correspondence between visit and classroom topic, the teacher’s initiatives and curriculum requirements and teaching context” (Xanthoudaki, 1998, p. 191).

An approach for teachers to use for topics incorporating museum visits, named SMILES (School–Museum Integrated Learning Experiences in Science, SMILES) (Griffin, 1998) was developed and tested. This encompassed close integration between school and museum learning; involved the children in planning aspects of their own visit; allowed them to research specific aspects of the class topic in which they had a particular interest; encouraged working in small, semi-autonomous groups that could move when and where they wished (within the confines prescribed by the teacher or museum); and provided the opportunity
for physical and mental rests as needed and for activities that complemented the informal nature of the learning setting.

The voices of the young people involved describe the outcomes:

_This visit was different to previous ones because in this one we actually wanted to find out about [the animals], on other ones we just went to have a look._

_\textit{I liked all of it because I learnt heaps of things and it was fun being with my friends and learning things at the same time.} (Griffin, 1998)_

The provision of a clear learning framework for the visit, and a clear indication of how the information was to be used following the visit, provided the students with an understandable purpose for their learning. Giving the students choice in the specifics of their learning—allowing children to determine their own areas of inquiry within the class learning framework—empowered the children.

Orion (1993, 1999) developed a similar model for integrating the field trip into a curriculum unit, with the field trip occurring relatively early in the program. He designed his model to “address school system limitations, teachers’ needs/concerns and influential factors in a field trip setting” (Orion, 1993, p. 331).

Looking at programs from the museum educators’ perspective at the Liberty Science Center, five elements were found to positively influence school student learning: “(a) alignment with accepted science curriculum standards and benchmarks; (b) extension of all contacts through pre- and post-activity connections; (c) integration with other subjects and disciplines; (d) connection of classroom experience to science center experience; and (e) insistence on student production through problem solving, construction, collaboration, and use of creativity” (Lebeau et al., 2001, p. 134).

Also from the museum perspective, Parsons and Muhs (1994) conducted a study of self-guided groups in the Monterey Bay Aquarium, looking specifically at chaperones with such groups, gathering data through phone interviews and observing groups in the aquarium—their findings challenged assumptions. They found that the interactions between chaperones and students were mostly positive, closely resembling family groups despite the similar ages of the children and the lack of a shared history and world view. She found that “worksheets interfere with the social interaction and maybe learning. . . . We found that while filling in worksheets, group members spoke less to one another, looked at the exhibits less, usually gave up on the worksheets during their tour and didn’t spend any more time in the aquarium than groups without worksheets” (p. 60).

Schauble et al. (2002) also looked at levels of support or mediation in learning in museums. They interviewed parents and museum staff, and then observed parents helping their children in a science gallery. Their findings suggested that “unless careful attention is paid to helping the helpers, the energy and resources devoted to deepening museum learning may be wasted, or at best, underexploited” (Schauble et al., 2002, p. 449). They conclude that good mediation (whether it be by parents, museum staff, or teachers) needs to be based on how the learners think about a range of ideas and an understanding of how individuals value the learning that takes place in museums.

Several authors have described programs that are trying to close the gap between museum and teacher. Sacco (1999) involved teachers in evaluating different exhibit-related experiences in terms of their usefulness as a teaching tool in a museum setting. Teachers liked multisensory exploration of museum objects and live demonstrations. They were not so keen about computer and video presentations. Guided tours were rated poorly. Guy and Kelley-Lowe (2001) report on a program where pre-service teachers worked with educators
in a science center and gained a wide range of insights into teaching science and the value of science centers as learning environments for the future children they would teach. Similar programs have been developed in Sydney (Griffin, under review) where student teachers undertake projects as “apprentices” with museum educators.

An excellent partnership program of teacher ambassadors is described by Mcleod and Kilpatrick (2002). Ambassadors are selected from their school to be the person who forms a link with local museums for a year. The authors summarize their wider survey of school museum partnerships by saying: “Whether these facilities are widely used depends on the influence of the school through its teachers and staff. When teachers seek out such centers for their own professional development, when school districts provide the financial support for field trips, and when the centers and the school districts work together to develop inquiry-based learning opportunities linked to the school curriculum, the window of opportunity for making students’ learning more meaningful, more connected and therefore more permanent, opens wider” (p. 62).

It is clear from these studies that making the links between school and museum learning explicit, genuine, and continuous affords real opportunities for school students to have enjoyable learning experiences in both settings. Studies to date indicate that providing opportunities for museum and school staff to learn from each other and to learn together has exciting potential.

CONCLUDING REMARKS

The last decade of research has revealed a great deal about how adults and students learn in museums, and about ways that school and museum educators can facilitate student learning. However, despite the wide range of research into school field trips to museums reported here, in general, school students still look, act, and are treated differently from children in family groups in museums (Hein, 1998). Their personal relationships within the group are limited, different expectations and constraints are placed upon them, and personal control over their own movement, rest, and learning styles are often minimized. The school group is generally referred to and largely treated as a single entity rather than as a group of individuals and the group’s characteristics and needs are considered over the characteristics and needs of the individuals. Yet by providing students with some authority over their learning—giving them a clear agenda and choice in their learning and allowing them the same rights to learn in museums as we afford adults, we know that student learning can be facilitated.

The need now is to share the findings of the research to date widely, while also further investigating these areas. As a field, we need to provide meaningful opportunities for educators in both museums and schools to embrace and act on the findings. In addition, the boundary crossings between schools and museums need to be explored in more detail to continue to unravel and affirm the respective roles of museum and school staff.

REFERENCES


