

Understanding Teachers' Perspectives on Field Trips: Discovering Common Ground in Three Countries



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ABSTRACT

The school field trip constitutes an important demographic market for museums. Field trips enlist the energies of teachers and students, schools and museums, and ought to be used to the best of their potential. There is evidence from the literature and from practitioners that museums often struggle to understand the needs of teachers, who make the key decisions in field trip planning and implementation. Museum personnel ponder how to design their programs to serve educational and pedagogical needs most effectively, and how to market the value of their institutions to teachers. This paper describes the overlapping outcomes of three recent studies that investigated teacher perspectives on field trips in the United States, Canada, and Germany. The results attest to the universality of some of the issues teachers face, and suggest improvements in the relationship between museums and schools.

INTRODUCTION

School field trips are common in the western world. Teachers plan out-of-school visits with their classes to settings they believe will complement and enhance their students' understanding of aspects of the world that may or may not be part of the classroom-based curriculum. This paper discusses three recently completed independent studies of teacher perceptions and field trip practices conducted in three different countries: the United States, Canada, and Germany. Strikingly, among these three studies there are many congruent outcomes. Viewing these results collectively enables us to suggest that issues surrounding teacher perceptions of field trip planning and implementation may be widespread and—to a degree— independent of specific school systems and field trip cultures.

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ASSESSING THE FIELD

Numerous studies attest to the value of field trips in a multiplicity of learning domains: cognitive, affective, social, motivational, aesthetic, and so on. (For a literature review, see endnote.)¹ Some key research studies are relevant:

Long-term impact—Several researchers have shown that museum field trips have long-lasting consequences for students, typically involving memories of specific social contexts, as well as specific content (Anderson and Piscitelli 2002; Falk and Dierking 1997; Wolins, Jensen, and Ulzheimer 1992). For instance, Falk and Dierking (1997) investigated the long-term effect of field trip experiences on elementary school students and found strong memories even after many years. Anderson and Piscitelli (2002) examined the aftermath of museum school field trips on childhood memories of 75 parents who had young children of their own. Half of the parents described the experiences as highly positive; the other half, however, reported negative memories, like feeling rushed, or visits that could be dull or even scary. Wolins, Jensen, and Ulzheimer (1992) concluded from a study of young children's memories of museum visits that personal involvement, links with the school curriculum, and multiple or repeat visits were critical factors in producing memorable museum visits for young children. These studies found that early field trip experiences are important predictors for later return visits to the field trip setting by families—both while the children who took part in the field trip are still young, and many years later, when the children have themselves become parents who now bring their own young children to the museum. It is in the self-interest of museums to ensure that museum field trips are educational and pleasurable, since future visitation may depend on the kind of experiences elementary students have during field trips.

Enhancing learning—Much field trip research has examined strategies that enhance students' cognitive learning outcomes following a field trip experience. Numerous studies show that school children gain most from a field trip—cognitively and emotionally—when they are well prepared by the curriculum, when they participate actively during the trip, and when the information received during the trip is reinforced following the visit.²

Pre- and post-visit activities and integration into the curriculum—Several studies have focused specifically on the role of pre- and post-visit activities as factors that have the potential to enhance museum experiences (Anderson 1999; Falk and Dierking 2000; Gennaro 1981; Orion and Hofstein 1994; Stoneberg 1981). The results do not surprise: Pre-visit activities provide prior knowledge that can aid in the understanding of experiences at the site, while post-visit activities strengthen new connections and give additional context for future experiences. Anderson (1999) found that post-visit activities connected with a field trip experience were powerful catalysts for continued insights, both in and beyond the classroom and museum settings. Gennaro (1981) reported that a group receiving pre-visit instruction showed greater overall knowledge acquisition from a trip to an Omni theater (large format) film presentation than a control group without the pre-visit instruction. Orion and Hofstein (1994) noted that students who participated in a 10-hour preparation

unit designed to acquaint students with content, site, and procedure information prior to a geology field trip out-performed their counterparts who participated in the same field trip with no special preparation at the conclusion of a traditional school unit on geology. A study by Stoneberg (1981) on the effectiveness of pre-visit, on-site, and post-visit zoo activities showed that an isolated field trip without preparation and/or follow-up may not aid in student learning. Aside from specific investigations that focused on pre- and post visit experiences, studies show that integrating out-of-school learning experiences into the school curriculum greatly enhances the overall educational impact of such visits.³

Role of the teacher—Teachers play a pivotal role in the learning experience during a field trip. This can have both positive and negative consequences. Wolins, Jensen, and Ulzheimer (1992), for instance, demonstrated that the classroom teacher can play an important role in affecting the strength and vividness of visit recollections. In contrast, Griffin (1994) reported that teacher involvement in student learning in a museum ranged from actively working with students in small groups, to monitoring student behavior, to leaving students to fend for themselves as teachers took a break from teaching. In their study of field trip groups, Griffin and Symington (1997) reported that many teachers transferred classroom-style instruction to an informal setting, yet made little effort to link topics being studied in the classroom with the informal learning environment. They found that the teaching strategies used by teachers during the field trip tended to be task-oriented—focused on having students complete a particular assignment or worksheet to keep them occupied during the visit. Similar findings were reported in a study examining teacher-generated worksheets (Kisiel 2003b). These teachers believed that learning would probably not occur during the trip without a worksheet designed to guide students or keep them on-task. These examples suggest that the educational worth of a museum field trip may be heavily dependent on the agenda of the teacher leading it, primarily in finding the balance between enjoyment and focused learning.

Teachers' perceptions—The perceptions that teachers hold of a museum and of the issues they face in the planning and implementation of field trip visits profoundly influence the kind of visits their classes experience. A study by Jamison (1998) considered the perceptions of elementary and middle school teachers regarding field trip visitation to the Minnesota History Center and the Science Museum of Minnesota. The investigation revealed that the venue location, the quality of the exhibits and programs, the safety and security of students, and relevance of the field trip experiences to the school curriculum were key factors in teachers' planning of visits to these venues. A study by Michie (1995) examined teacher perceptions of field trips and found that communication between the field trip venue and schools plays an important role in teachers' planning for field trips. Michie (1998) found that teachers agreed that field trips were valuable experiences for their students, while the barriers that kept teachers from doing field trips centered on the lack of support from school administrations and lack of time to prepare relevant teaching materials. He suggested that school administrators should recognize the value of field trips for student learning and that professional development programs could help teachers build confidence in field trip preparation.

Table 1 Summary of three research studies* by research question, sample, context, and methods.

	Los Angeles	Vancouver	Freiburg
Key research question(s)	What are teacher agendas (motivations and strategies) for school field trips?	What are teachers' perceptions concerning the planning and implementation of field trips?	What are teachers' perspectives on all aspects of their field trip experiences?
Sample	Teachers, grades 3–5.	Teachers, grades K–7.	Secondary teachers.
Setting focus	None for survey; Natural History Museum for observations and interviews.	All field trip venues in the City of Vancouver. Special focus on Science Center.	Planetarium.
Method(s) of data collection*	Surveys—primarily open-ended (n=115); in-depth, semi-structured interviews with field trip observations (n=10).	Surveys—open-ended, ranking, Likert scale questions (n=93); focus groups (n=12).	In-depth, semi-structured, open-ended phone and face-to-face interviews (n=29).

*Survey and interview instruments used in each of these studies are available from the authors.

THE THREE STUDIES

Although the quantity of research related to school groups in museum settings is increasing, and some of it has been aptly summarized by Griffin in a recent *Science Education* article (2004), the body of literature related to teacher's perspectives on field trips is still relatively small. Although the three studies described in this paper were carried out independently, with somewhat different goals, the authors recognized several striking similarities (and some noteworthy differences) regarding teacher intentions and field trip experiences.

In this collective examination of these three independent studies, there is a shared definition of learning from field trips. The definition is broad and multi-dimensional (see Schauble et al. 2002); it includes cognitive, affective, motivational, social, kinesthetic, and aesthetic dimensions. We also believe that there is value in helping teachers to become more aware of the varied learning opportunities that can be afforded by field trip experiences. We believe that field trips can have a variety of legitimate reasons, such as content learning, motivation, experiencing out-of-school settings, and even the promotion of life-long learning. In fact, a recent comprehensive field trip study conducted in Cleveland, Ohio revealed that teachers pursue a multitude of sometimes conflicting objectives in their field trips (Storksdieck, Kaul, and Werner 2005). We subscribe to a view that field trips can be educationally legitimate even when their focus does not lie predominantly on cognitive objectives related to classroom topics, curriculum or standards. We believe that teachers (and students) should have reasonable autonomy in deciding the learning objectives and pedagogical make-up of the field trip experiences. While most field trip venues offer teachers choices with regard to the kind of field trip program or activities that could be booked, there is frequently little room for adjusting field trip programs to the needs of individual teachers.

Table 2 Summary of context in which studies were conducted.

Context of field trips	Los Angeles	Vancouver	Freiburg
<i>Teachers</i>			
Field trip pedagogy part of teacher education.	Very limited	Very limited	✓
<i>Field Trip Organization</i>			
Busing required.	✓	✓	
Parental note required.	✓	✓	
Money is an issue for field trips.	✓	✓	
Special field trip days assigned.			✓
<i>Pedagogical Aspects</i>			
Curricular pressures high.	✓	✓	✓
Field trips need to adhere to curriculum or standards to be acceptable for schools.	✓	✓	
Field trips can be part of annual outings or class trips with a primarily social purpose.			✓
Elementary students targeted.	✓	✓	
Secondary students targeted.			✓
Museums reference curriculum or standards.	✓	✓	✓

THE RESEARCH CASES

The three independent studies were conducted in different countries, yet they speak to the issues that make field trips to out-of-school settings more satisfying to all stakeholders. Although aspects of these cases have been reported previously (see Anderson and Zhang 2003a; Kisiel 2005; Storksdieck 2001; 2004), the analysis presented here provides a new perspective on the collected data and re-examines outcomes from a larger perspective. Table 1 summarizes the focus, context and method of each of the three studies. Table 2 summarizes the social values related to teachers and field trips in each of the three settings.

The Los Angeles Case—This investigation, conducted by Kisiel in the spring of 2003, involved questioning local teachers about their field trip agendas to understand both their motivations for conducting a field trip, and their strategies for creating a successful experience. Several field trips were observed at the Natural History Museum of Los Angeles County, which serves a large, diverse community and numerous school districts (including the Los Angeles Unified and Long Beach Unified School Districts).

The study addressed questions aimed at understanding the teacher's agenda (motivations and strategies) for a field trip. Observations and interviews were used to understand to what extent these stated motivations and strategies related to field trip practice as observed at a natural history museum. Through examining teacher agendas, this investigation sought to understand how teachers perceive and cope with out-of-school learning environments on a school field trip, thereby providing museum educators a better understanding of teacher behaviors and needs.

Methodology—As mentioned, this investigation involved a two-tier approach to data collection. First, a survey consisting of primarily open-ended questions was created to identify teacher motivations and their instructional strategies. The survey was distributed to upper elementary teachers (grades 3–5) throughout the Los Angeles and Long Beach areas, with responses returned by mail to the researcher via a postage-paid envelope.⁴ Comparison of information from a sample of 115 teachers revealed demographic data such as levels of teacher experience and socio-economic status of the student body that were quite similar to composite data for these large school districts and the county overall. Responses were examined using a process of open coding, and recurring themes were identified and tabulated (Strauss and Corbin 1998). Frequencies were calculated to identify which responses and emerging categorizations were most common.

In order to better understand the relationship between teacher responses and their actions during a field trip, the second tier of analysis involved a study of 10 upper elementary teachers who were planning a field trip to the Natural History Museum of Los Angeles County. Subjects were selected from a list of teachers already scheduled to visit the museum; in this way, the field trip was simply part of their plan, and was not an experience that was being unnaturally forced upon them. Each of these studies included three stages: a pre-visit interview with the teacher, based on questions from the mailed survey questions; observation of the students and teacher during their field trip to a natural history museum; and a follow-up interview with the teacher. Results were used to reinforce and triangulate findings generated from the survey instrument, as well as to provide clarification for concepts not easily described via teachers' written responses.

Summary of outcomes—Overall, survey responses indicated a positive view of field trip experiences, and teachers expressed a variety of rationales for visiting out-of-school settings. Answers to an open-ended survey question of teacher motivations for conducting field trips revealed that 90 percent of participating teachers stated that a connection to the curriculum was an important reason for leading a field trip (Kisiel 2005). Despite the predominance of the connection to the curriculum, it is important to note that the teachers expressed multiple motivations for conducting a field trip, including exposing students to new experiences (39 percent) and fostering interest and motivation (18 percent). In addition, interview and observation data suggested that the level of connection between a field trip and the curriculum covered a range: from a fully integrated field trip, complete with pre- and post-visit activities that built on the experience and corresponded to state science standards; to a casual sense of implicit connection that teachers believed would be obvious to students without much discussion back at the classroom. An additional discrepancy in teacher perspective was noted when examining the survey question that asked how teachers knew when a field trip was successful. The most commonly stated signs of success were a positive experience for the students (61 percent) and a general sense of student learning (41 percent). Only 23 percent of teachers reported that a successful field trip was one that connected with the curriculum, despite the fact that this was stated as a field trip motivation by the majority of teachers.

Teachers were asked in the survey to share strategies for successful field trips. Ninety percent of teachers were able to describe some sort of pre-visit preparation as part of

a successful field trip. Yet only 70 percent were able to describe a post-visit strategy, and by far the most frequently mentioned post-visit activity (45 percent) was discussion of the trip, a strategy that tended to involve little effort for teachers and students. Interview data supported this finding. For four of the 10 teachers interviewed, limited classroom discussion was the *only* explicit follow-up to the field trip. These review sessions typically involved student descriptions of what was seen or done, what they liked about the visit and why they liked it. In most other cases, teachers reported conducting their field trip discussion on the next day; however, in one case, the teacher admitted that the demands of standardized testing forced her to delay any sort of follow-up. She confessed that the call from the researcher a few weeks later prompted her to talk about the trip with her students.

To place teacher agendas in proper context, several survey questions targeted the perceived obstacles faced by teachers when planning a field trip. Less than two-thirds (63 percent) of the teachers felt that they could freely choose to plan and conduct a field trip. Barely half (54 percent) reported that they had freedom to choose the timing of the field trip (Kisiel 2005). Not being able to schedule the trip within the suitable time frame makes it much more difficult for the teacher to link the trip to the classroom curriculum. Less than 20 percent of those surveyed indicated that they could choose how often they would lead a field trip. The primary reason given for this limitation was cost, with transportation expenses being most commonly cited.

Time seemed to impact many of the strategies teachers utilized, or planned to utilize, for their field trip. With regard to pre-visit strategies, several teachers explained that they should have made time to visit the museum prior to the field trip in order to familiarize themselves with the setting and its offerings. Follow-up strategies described in pre-visit interviews were not commonly employed as intended, often due to time constraints. Several teachers indicated that most of their time following the field trip was allocated to testing or test preparation. One remarked that testing pushed the field trip to the very end of the year when the teacher was unable to make the sorts of useful curriculum connections that she would have liked.

In most of these cases, it seems that a shortage of time for employing either pre- or post-visit strategies was ultimately a reflection of curriculum prioritization at a level above the teacher.

The Vancouver Case—In 2003, a study was completed in collaboration with Science World in Vancouver and the University of British Columbia. (See Anderson and Zhang 2003a; 2003b). This study investigated the factors influencing K–7 teachers' decisions to plan and implement field trip visits with their classes.

These were the key questions: What are the perceived values of field trip visits? How often are teachers implementing and planning field trips? What are teachers' views concerning the value of field trips and to what degree do they want to embrace or relinquish involvement in planning? What do teachers consider in planning and implementing field trips that really makes a difference? What factors do teachers keep in mind when planning field trips for their classes, and to what degree do these factors influence the decision-making process in planning field trips in the first place?



Science World, located in the downtown precinct of Vancouver, Canada. *Photo courtesy of Science World.*

Methodology—The study adopted a two-phase approach. Both quantitative and qualitative methods were used. The first phase of the study focused on a sample of 93 K–7 teachers who were surveyed using a 23-item pencil-and-paper questionnaire designed to probe the issues surrounding field trip visitation. The questionnaire was comprised of open-ended questions, Likert scales, and rank ordering priorities of issues. The sample consisted of 11 cohorts of K–7 teachers who represented the entire population of teachers at each of 10 different schools, and one group of practicing K–7 teacher who were Masters of Education students at UBC. The schools were located in diverse parts of the city and represented a range of socio-economic communities. Findings from the first phase informed the second phase of the study which consisted of focus group discussions with two cohorts of teacher participants ($N_{\text{total}}=12$). The selection of the cohorts was based on questionnaire responses; preference was given to teachers whose responses more fully enlightened the key issues surrounding barriers to visiting Science World and other field trip venues in the Greater Vancouver.

Summary of outcomes—Several outcomes from this study provide important insight about the perceptions teachers hold of the planning and implementation of field trip visits. First, analysis of the survey indicated that 83 percent of teachers believe that, in general, field trips provide highly educational experiences for their classes. More than two-thirds (70 percent) of teachers claimed that they plan and implement whole-class field trips to venues outside of their school environment more than once a year.

Teachers were asked who had responsibility for a variety of issues associated with

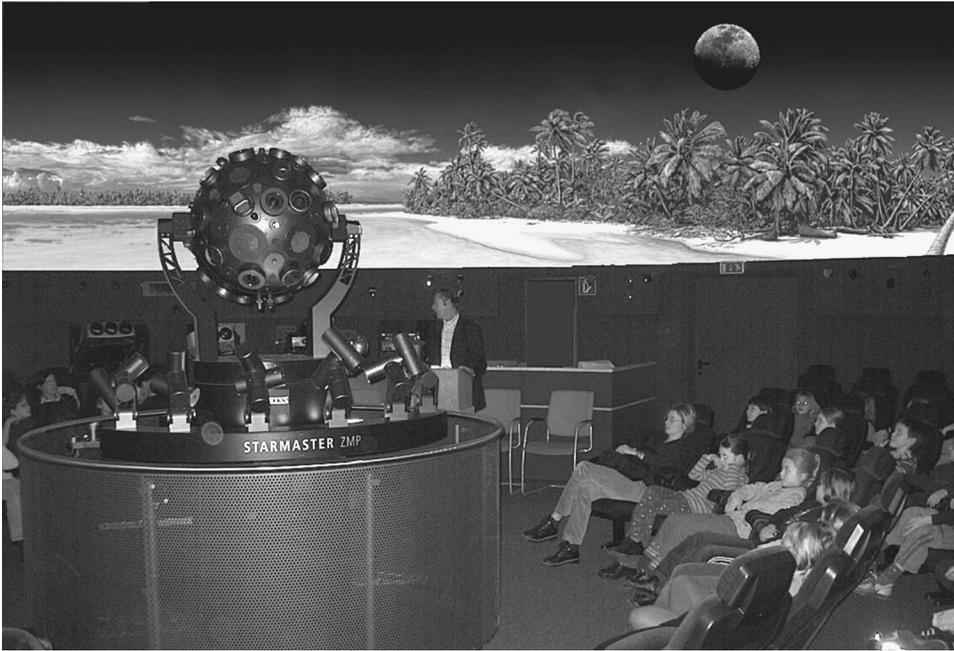
planning and implementation of field trip visits. Sixty percent of teachers believed that at least some of the responsibility for planning at-venue experiences lay with the field trip venue itself; of these, half felt the responsibility was solely that of the venue, while the other half felt that both teacher and venue should have input into what happened at the site. These figures indicate, in other words, that one third of teachers in the study regard the venue as having sole responsibility for planning experiences on site. Additionally, approximately one-third of the teachers (32 percent) believed that the venues had the responsibility to prepare and plan post-visit activities. However, most teachers also felt that they had either a shared or a sole responsibility for this aspect of the field trip experience. Approximately one-quarter of all teachers in the study reported that they were not happy with the current distribution of responsibilities for preparation and planning of field trips.

On an open-ended question in the survey that elicited the key factors influencing the overall success of field trips, teachers frequently cited effective pre-planning/pre-lessons (33 percent), appropriate curriculum fit (22 percent), and engaging/hands-on experiences for students (19 percent) as being most influential. The focus group phase of the study probed the relative importance of pre-visit and post-visit materials and revealed that teachers held a strong view that having the field trip venue provide pre-visit materials is both desirable—and probably more important for the overall success of the experience—than having it provide post-visit activities.

Survey and focus group data gave overwhelming evidence that teachers considered a close fit between a field trip and the school-based curriculum to be the most important of all issues. When teachers were asked in the survey to rank a set of 13 issues they consider in their planning and implementation of field trip visits, curriculum fit was ranked the first priority by more than two-thirds of the responding teachers.

Despite the dominance of teachers' beliefs that curriculum fit was the most important issue in both the planning and implementation of field trip visits, teachers' self-reported pedagogical approaches to field trip implementation suggest that curriculum fit did not guide how teachers actually conducted their field trips. Although many teachers are required to justify field trip experiences in terms of curriculum fit in order to secure the legitimacy and administrative authority to conduct a field trip, the data and evidence from other studies suggest that teachers actually do not integrate the field trip experiences into their post-visit curriculum frameworks. Teachers reported that their post-visit follow-up activities centered on the motivational aspects of field trips.

The Freiburg Case—Although the German study, completed in 2004, examined a different field trip setting (a planetarium) and a different age group (12–18), it similarly sought to gain a deeper understanding of teachers' perspectives on field trip experiences to out-of-school learning environments. The Freiburg case differed from the Los Angeles and Vancouver cases in two other crucial aspects: teachers generally did not have to prove a link to the curriculum or to standards before taking their students to the planetarium; and financial aspects were hardly ever problematic (the planetarium and public transportation are highly subsidized). However, teacher training in Germany stresses the pedagogical advantages of out-of-school learning, and field trips are often conducted as part of outings or excursions with primarily social objectives. The research was conducted at the Richard



Students on a field trip to the Richard-Fehrenbach Planetarium in Freiburg, Germany. *Photo by Martin Federspiel, courtesy of the Richard-Fehrenbach Planetarium Freiburg.*

Fehrenbach Planetarium in Freiburg as part of an evaluation of an environmental science education program, instituted by the planetarium, that served more than 150 school classes, consisting primarily of secondary students who saw one of two multimedia shows on global climate change (Storksdieck 2001; 2004).

Methodology—Interviews with teachers who visited the planetarium with their students for one of the two planetarium shows on global climate change were conducted on average one year after their visit to learn about teachers' theoretical understanding of field trips and their practice in using out-of-school settings. The 29 semi-structured telephone interviews lasted between 35 minutes and one hour. The questions were mostly open-ended and covered all aspects of the visit: motivation to attend, preparation beforehand, class activities during and after the visit, information received and communicated to students, expectations, impact of the show, context of the visit, and so on. The interviews were taped, transcribed, and subjected to a standard content analysis (Mayring 1997).

Summary of outcomes—The teachers participating in the interviews gave multiple reasons when asked why they visited out-of-school learning environments in general. Curricular overlap was mentioned most often (34 percent), despite the fact that curriculum-tied cognitive learning outcomes were not as important as they were, for instance, in Los Angeles or Vancouver. Real-life and hands-on learning (24 percent) and the specific ability of an out-of-school venue to present content (17 percent) also ranked high. Other reasons included the opportunity to learn “with all senses” outside the classroom, increased mo-

tivation of students, learning effectiveness, the benefits of an alternative instructor, and personal interest of the teacher. Overall, teachers provided a vast array of reasons besides curricular fit, an indication that they were generally aware of the rich opportunities that field trips can provide.

When the same teachers were asked more specifically why they had visited the planetarium for their particular field trip, 38 percent mentioned that the visit was simply part of a school outing, or done primarily to “leave school,” though more than half of these teachers also said that they had intended to combine the outing with an educational experience. One third of the teachers visited the planetarium because they believed that the visit would aid them in their teaching in some general way; more than half of these teachers expected the planetarium to present a classroom-relevant topic more effectively than they could, while the others simply pointed to the general ability of the planetarium to visualize or present complex subject matter. Few of the teachers specifically chose a planetarium show because it fit into their curriculum or classroom unit. In fact, only two teachers reported specific goals that connected the visit to their current classroom unit, and only one had used the show as an integral part of the unit. Two-thirds of the teachers stated that they had set specific goals for the visit, and half of this group mentioned environmental awareness-raising and advocacy. Teachers’ answers indicated that some might have “created” goals only after the visit (after they themselves had experienced the shows), or when they were asked. Rather than first setting goals and objectives for a field trip (including the question of whether a field trip would be beneficial), it appeared as if many of the teachers used a specific out-of-school educational experience opportunistically. While this outcome is directly tied to the situation in Germany—in which schools assign a school day for field trips for all students—field trips that are motivated by the venue itself might not be uncommon elsewhere. In the German case, the question was less why teachers chose the venue, and rather more how they used the opportunity of a field trip for learning and/or enjoyment.

When asked, a third of the teachers stated that they had prepared for the visit. Those who did not prepare often (and not surprisingly) cited a lack of curricular overlap and time constraints. Teachers did not generally share many field trip details with their students prior to the visit and only a few teachers informed their students about their goals for the visit. Consequently, according to teachers’ own accounts, about half of the students entered the planetarium without information about the content of the show or the presentation style (multimedia show). While most teachers stated that the shows met their own expectations, the majority of teachers were less certain whether their students’ expectations were met. However, teachers on the whole were not overly concerned with their students’ expectations, and did not consider setting their students’ expectations for the visit an important aspect of field trip planning.

Three-quarters of the teachers stated that they conducted follow-up activities, though descriptions suggest they were generally brief and unsystematic; references to the visit made later on in the classroom, for instance, were counted as follow-up. While most of the teachers stated that they conducted some form of follow-up, about two-thirds of the students who completed a delayed-post written survey (see Storksdieck 2001; 2006) indicated that they did not experience any follow-up. When teachers reported follow-up activities on the written survey, more than a third of their students did not remember them.

It seems that most teachers either understood the planetarium visit as a stand-alone activity, or were unable to unambiguously tie the visit to their classroom curriculum.

At the end of the interviews, teachers were asked what they might recommend to a colleague visiting the same planetarium show. Almost all of the visiting teachers recommended some form of preparation before taking the field trip, either by preparing the topic (34 percent), conducting some general preparation (28 percent), or addressing students' emotions, expectations, or prior knowledge (14 percent). Only a few teachers recommended that the visit be integrated into the curriculum or embedded in current classroom teaching. This stands in contrast to the opinions about curricular integration voiced by the same teachers earlier during the interview when more than one third of the teachers indicated that field trip experiences ought to be integrated into the curriculum. Follow-up was recommended by the majority of teachers (59 percent), mostly to clarify remaining questions, or as a means for repetition and improved retention. All of the teachers who recommended follow-up also recommended preparation.

DISCUSSION AND COMMONALITIES

If museums and similar institutions wish to better improve the learning value of school-based field trips, understanding the teacher is a critical first step. Although each of the studies described here sought to address a particular audience of teachers in different countries and grade levels, re-examination of the findings from a broader perspective reveals numerous similarities in teachers' perceptions of field trips. Three areas of commonality in teacher perceptions emerged: 1) the value placed on field trips by teachers (field trip worth) and responsibility for creating the learning experience, 2) potential obstacles and barriers to field trip planning and implementation, and 3) the importance and paradox of curriculum fit.

Field trip worth and learning experiences—In all three cases, teacher responses indicated that they perceived field trips as highly valuable educational experiences for their students. Teachers were able to identify the range of benefits or outcomes that field trips can provide if successful—however, these experiences were frequently not integrated into subsequent school-based learning. Results from these studies suggest that teachers seemed to intuitively understand that least some steps were necessary to ensure that field trips live up to their (educational) potential. In both the Vancouver and Los Angeles studies, teachers indicated that access to and/or completion of pre-visit activities was generally more important for a successful field trip than post-visit experiences. Like the other two studies, the Freiburg case revealed that more teachers recommended preparation activities than follow-up; however, interview data suggested that more teachers actually conducted some form of follow-up (even general reference to the excursion) than pre-visit activities. However, although the majority of teachers claimed to have conducted some sort of post-visit activity, only about one third of the students were able to describe any post-visit follow-up in the Freiburg case. Closely linked and clearly identifiable follow-up to field trips may need far more encouragement.

The Vancouver study was the only one to look at perception of responsibility for

these learning experiences; one third of the teachers felt it was the field trip venues' responsibility for planning of at-venue experience to the exclusion of any teacher input. Thus, at least on the basis of outcomes of this case, some tensions are likely to exist concerning who ought to bear the responsibility for creating learning experiences.

Logistics and other obstacles—Each of the three studies identified several factors that would interfere with planning and conducting school field trips. Not surprisingly, one common factor was cost. Both the Los Angeles and Vancouver studies indicated that teachers saw funding as a roadblock for field trips. In the U.S. study, transportation cost was identified as being most problematic, while the Vancouver study suggested that cost of entry was more likely to be a barrier. In Freiburg, where students were generally able to use public transportation and where program costs were subsidized, these were not seen as obstacles. It would therefore seem that the cost barrier is location-specific.

Both the Los Angeles and Freiburg studies suggested that time was also perceived as a difficulty in creating an effective field trip experience. Teachers felt that curriculum demands did not allow them to spend adequate time on field trip preparation and/or follow-up. Testing schedules, over-crowded curriculums, and a lack of teaching materials were identified as reasons for time limitations. Both studies also suggested that the timing of the trip during the school year had implications for how (or whether) the visit would fit within a unit of instruction and that fitting field trips to the curriculum was often difficult, since teachers had limited control in scheduling trips to coincide with their curricular plans.

Clearly, there are other restrictions that teachers face, as well. It is critical for museums to understand that there are factors beyond the teacher's control that impact on using the field trip setting. Helping the school audience to better exploit the resources of the institution may require flexibility and creativity in developing the kinds of programs that actually support classroom instruction. The Freiburg case, for instance, focused on middle and high school students. In the U. S., high school students are not often served by museums, primarily because teachers face almost insurmountable problems with scheduling. While scheduling was problematic for some of the Freiburg teachers, the fact that schools assign specific days well in advance for class field trips basically eliminates this obstacle, making it easier for secondary teachers to go on field trips. Museums may want to partner with parents, teachers and principals to lobby for similar field trip policies on the school district or even state level.

The importance and paradox of curriculum fit—A field trip experience that effectively fits with the classroom curriculum was the dominant consideration for the teachers surveyed in these studies. Ninety percent of the Los Angeles teachers indicated that connection with the classroom curriculum was an important motivation for conducting a field trip, and curriculum fit was ranked as the highest priority issue of field trip planning by more than two-thirds of the Vancouver teachers. An emergent theme in both studies suggested that teachers gained legitimacy for their field trip by showing that it would fit the curriculum. This importance of congruence with the classroom curriculum is not particularly surprising, given the increased emphasis on standards and accountability, especially in the North American regions studied. While curriculum fit was not necessarily a required aspect of the field trip for the teachers surveyed in Freiburg, they still indicated

Table 3 Summary of outcomes of the three studies.

Theme	Issue	Los Angeles	Vancouver	Freiburg
Value of Field Trip and	Teachers see field trip as educational.	✓	✓	✓
Creating a Learning Experience	Teachers intuitively understood best-practice but did not demonstrate best practice.	✓	✓	✓
	Access and implementation of pre-visit activities was more important or more frequent than post-visit activities.	✓	✓	
	More teachers conducted post-visit than pre-visit activities.			✓
	Field trip experiences rarely integrated in school curriculum.	✓	✓	✓
	Teachers' field trip practice deviated from their intentions or stated best practices.	✓	✓	✓
	Dissatisfaction with ascribed responsibilities for planning and implementation of field trips.	Unknown	✓	Unknown
Logistics and Obstacles	Teachers report funding as a critical obstacle to planning field trips.	✓	✓	
	Inadequate time for field trip planning and preparation.	✓	Unknown	✓
	Lack of autonomy to select venue.	✓	Unknown	✓
Curriculum Fit—the Paradox	Curriculum fit was of the highest importance in planning and implementing field trips.	✓	✓	✓
	Legitimacy with school admin for field trip gained through curriculum fit.	✓	✓	
	Lack of evidence that curriculum fit was actually guiding the field trip.	✓	✓	✓

that it was desirable and important, suggesting that such a connection is seen as the proper pedagogical approach, even if teachers were unable to tie their specific planetarium field trip to the curriculum.

Despite this apparent need and verbal endorsement for curriculum fit by most teachers across the three studies, there was little evidence in the investigations to suggest that curriculum fit was implemented to any major degree. Rather, most teachers judged the success of their field trips by student enjoyment and other emotional or affective criteria; specific learning outcomes tied to the curriculum were cited less frequently. This contradiction, observed across all three studies, suggests that while teachers understand that their field trip should be related to the curriculum, there may be other factors that ultimately shape the field trip experience. More importantly, many of the field trip objectives and outcomes considered important by teachers may actually be more closely aligned with those of museum-goers in general.

It is important to note that teachers may not necessarily share a common conception for what curriculum fit means. The Los Angeles study suggested that curriculum fit could range from activities that integrated the field trip experience into the current unit of study (an approach promoted by numerous researchers and also often stated as important by teachers), to a general review of a topic they had already covered in class, to opportunistic connections that would inevitably come up in classroom discussion. Similar findings emerged in the Freiburg case where few teachers embedded the visit to the planetarium into their current classroom unit, and many considered it a curricular fit if the topic had been covered during the academic year of the field trip. These investigations suggest that teachers are likely to describe some sort of curriculum-related goal; however, the disconnect between field trip success and successful curriculum fit supports the idea that they may have multiple goals for their field trip experience. Thus, while connecting the field trip to the curriculum is reported as a critical aspect of the trip, it may be less influential within the reality of planning and conducting the actual excursion. In fact, the data would suggest that the system (the school, district, or museum) forces teachers to re-examine the field trip within particular constraints. Within this context, making a connection to the curriculum, while a desirable outcome, may be more difficult. This does not pose a problem to teachers who cherish a range of field trip objectives unrelated to curricular ties, so long as they can prove that the field trip is designed to fit the curriculum. Table 3 summarizes the key outcomes of the three studies.

IMPLICATIONS

Comparison of these three studies suggests that teachers are faced with several common issues, independent of the school system or the cultural background, when they plan and lead field trips to museums or similar sites. In some ways, these issues represent a conflict between two systems—formal schooling and informal education—with different formats, different bureaucracies, and different philosophies. They also represent a gap between teacher aspiration and teacher practice, in terms of field trips. Inasmuch as museums can work with teachers to understand and bridge that gap, field trip experiences might better serve students, teachers and museums, no matter what the objectives are.

Research and recommendations re-examined here suggest that successful field trips have the potential to enhance student understanding or awareness on the cognitive or affective level. To achieve this, the experience would ideally consist of some form of before-visit preparation and post-visit follow-up as well as a useful connection or integration with curricular objectives for the classroom or overall learning standards if the content of the field trip experience overlaps with curriculum or classroom teaching or standards. To meet this success, museums must consider directing their attention to the needs of the teacher and ways in which they can foster teacher implementation of a successful field trip.

Teacher training—These three writers suggest that the ways teachers plan and implement field trips arguably have roots in the models that teachers were exposed to when they were in school. A plethora of evidence in the research literature on pre-service teacher train-

ing suggests that beginning teachers often resort to the pedagogical models they encountered as students (Blanton 2003; Richardson 1996; Lortie 1975; Wideen, Mayer-Smith, and Moon 1998). The same can be said of models of field trip practice. In our experience as educators, we are acutely aware that discussion of any kind of field trip pedagogy that would assist future teachers to think critically and creatively about field trip design is typically lacking within teacher preparation programs. In the absence of such training, we feel that the kinds of issues that are reported here in this paper are likely to continue. It therefore becomes imperative that museums re-examine how they can provide ways for teachers to recognize that field trips can create important affective experiences, and can help them achieve their curriculum-related goals, as well. There are now many examples of museums actively involved in teacher training, both for student teachers, and as part of professional development. Ideally, such programs would not only provide science content but would assist teachers in using the site as a teaching environment. More of these types of collaborations between museums and school districts or teachers colleges are certainly needed. Although pedagogical awareness and knowledge alone may not be sufficient (as the Freiburg case illustrates), first-hand experience during teacher training or the early years of teaching seems likely to influence teacher field trip practice.

Supporting materials—Easy access to materials and experiences that support field trips is critical, as teachers with extensive pedagogical responsibilities and limited time are unlikely to track down ways to blend the field trip with their curriculum. With a mismatch of teacher intentions and practice, it is conceivable that teachers would not pay sufficient attention to classroom teaching material even when it is supplied to them, and many studies show that teachers use such materials sparingly (Griffin and Symington 1997; Griffin 2004). Without clear objectives and a full understanding of the field trip experience, teachers are less likely to make productive use of these materials. It may therefore not be enough for out-of-school learning environments to provide teachers with easily applicable and accessible teaching material. Museums would be well advised to address the multitude of field trip objectives discussed by teachers when developing pre- and post-visit activities, perhaps in conjunction with a teacher advisory group or other formal means to gather teacher input. Museum field trip materials ought to fit the teachers' needs. If many field trips are indeed not conducted as integral parts of a classroom unit, then preparation and follow-up materials that assume such a connection might turn out to be of limited use to teachers. Ideally, museums and other field trip destinations could offer teacher support materials, developed in conjunction with local teachers, based on a range of objectives, for instance: "If your primary reason for the visit is...."

Recognize limitations—The multitude of logistical details teachers have to consider in their field trip planning can be overwhelming, even for experienced teachers. These studies suggest that a teacher's need to consider field trip planning, management requirements, and safety concerns may deflect attention from pedagogical aspects of a visit. Field trip success is oftentimes humorously summarized as bringing all students back alive and healthy, and only secondarily as having provided enjoyment and learning opportunities. Added to this, these studies indicate that time and curriculum constraints often make

preparation and follow-up quite difficult. Museums must consider these and other limitations when looking to provide effective learning experiences for teachers and students. Suggestions from teachers may help these institutions to develop new field trip experiences that might streamline logistics, make the experience less intimidating, provide for more customized experiences, and thus allow more time for a focus on instructional outcomes. Museums might also consider how they might more effectively utilize on-site resources to develop experiences that are self-contained and rely less on teacher activities back in the classroom.

Communication and cooperation—To more effectively serve the teacher audience, museums and other informal settings must be sure to develop a line of communication, whether this is done through teacher evaluation cards, teacher open houses, visits to schools, the development of a teacher advisory board, or even an interactive museum Web site devoted to teachers and field trips that allows teachers to communicate with museum staff and other teachers.

As suggested above, museums might also consider teaming with local universities or school districts to take a more active role in training for both pre-service and in-service teachers. In this way, teachers can be introduced to research-based practice that would allow them to look beyond (but not ignore) affective outcomes, and more carefully consider how they might facilitate learning outcomes aligned with their curriculum. As awareness of museum-based pedagogy and field trip learning opportunities increases, teachers may be more likely to expand their conception of the field trip.

These three studies suggest that the success of field trips is to a large degree dependent on expectations, prior knowledge, and most importantly, teachers' prior attitudes towards the setting of the field trip. Previous studies suggest that these factors are often overlooked by both teachers and the out-of-school learning environments.⁵ Further complicating this is the fact that teachers have potentially different perceptions of what a successful field trip really is, and these perceptions may or may not be shared by museum educators or administrators. These findings suggest that museums must either recognize these different intentions and adjust programming to suit these different needs, or must be proactive in providing teachers with pedagogical support in the form of training or professional development to help teachers better understand how they can effectively use these sites to promote learning related to the school curriculum. Museums need not venture into addressing these aspects alone; partnering with other museums locally, or communicating about field trip issues with similar type venues elsewhere can help.

Field trips are an important aspect of every student's life, and they are acknowledged to be an important educational tool by almost everyone involved in schooling. Children on field trips also form an important current and—hopefully—future audience for museums. Field trips ought to be fun, satisfying, educational, and pedagogically valuable experiences for children while simultaneously serving as a powerful advertisement for museums and an easy way to introduce students to community resources for lifelong learning. Yet many field trips may be far from achieving these goals, which at times lead to frustration on all sides. These studies, conducted independently in three different countries, speak strongly to the universality of issues that confront teachers, their perceptions, their preferences,

and also the paradoxes that are observed from the third party perspective. We believe that these studies promote better understanding of the world(s) of teachers and through their combined interpretation will help museums and teachers make field trips the marvelous experience for students they hold the promise to be.

ACKNOWLEDGMENTS

All three authors of this paper have made equal contributions; authorship is cited in alphabetical order by author name.

NOTES

1. Anderson 1999; Anderson, Lucas, and Ginns 2003; **Beiers and McRobbie 1992**; Borun, Chambers, and Cleghorn 1996; Falk and Dierking 1997; **Feher and Rice 1985**; Finson and Enochs 1987; Flexer and Borun 1984; Griffin 1998; Hofstein, Bybee, and Legro 1997; Hofstein and Rosenfeld 1996; Lucas, McManus, and Thomas 1986; Piscitelli and Anderson 2001; **Stevenson 1991**; **Stronck 1983**.
2. Bitgood 1989; 1993; Gennaro 1981; Delaney 1967; Farmer and Wott 1995; Koran and Baker 1978; Koran, Lehman, Shafer, and Koran 1983; Koran, Morrison, Lehman, Koran, and Gandara 1984; Marshdoyle, Bowman, and Mullins 1982; Orion 1993; Ramey-Gassert, Walberg, and Walberg 1994; Rennie and McClafferty 1995; 1996; and Stoneberg 1981.
3. Anderson, Piscitelli, Weier, Everett, and Tayler 2002; Bogner 1998; Dettmann-Easler and Pease 1999; Disinger 1988; Farmer and Wott 1995; Gutierrez de White and Jacobson 1994; Hofstein and Rosenfeld 1996; Stoneberg 1981; Wolins, Jensen, and Ulzheimer 1992.
4. A sample of 400 teachers was randomly selected to receive the questionnaires. Modest incentives were offered to those teachers who returned their information in a timely fashion, resulting in a response rate of approximately 25 percent.
5. Anderson 1999; Anderson 1994; Anderson and Lucas 1997; Falk and Balling 1982; Falk and Dierking 2000; Griffin 1998; Griffin and Symington 1997; Jensen 1994; Kubota and Olstad 1991.

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