

FIRST PERSON INTERACTION: THE BENEFITS
OF FIELD TRIP EXPERIENCES TO
SOCIAL STUDIES EDUCATION

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ABSTRACT

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This review of literature includes an examination of the extent that field trips and technology use promoted first person interaction (FPI) between social studies students and presented material. FPI experiences enabled student creation of meaningful connections between their environment, direct experiences, conceptual themes, and factual material. Social studies curriculum would benefit from more consistent use of field trips and supplemental technologies that promote FPI. Research is still needed to compare the effects of FPI instruction with traditional methods.

Chapter 1: Introduction of the Study

Introduction

Effective teachers often search for scholarship that explains successful teaching methods. Their searches might lead to information on learning in non-classroom settings. History teachers might expect to find studies in which researchers examined the influence of field trips on student performance, or demonstrated the importance of taking history students away from their textbooks. Classroom teachers interested in taking their students on field trips could use such supportive research, as could museum educators interested in attracting school groups. For a variety of reasons, empirical studies of this nature are not available. Suggestions from this review of literature will guide the first quantified examination of the influences that historic field trip experiences have on student performance.

Statement of the Problem

The purpose of this study was to examine the benefits of using first person interaction (FPI) in social studies education. Three questions guided this review of literature:

1. Did field trips achieve FPI between students and material?
2. Was FPI between students and material responsible for a quantifiable improvement in performance, comprehension, and/or retention?

3. Is it feasible to include greater subject pools, museum types, supplemental technologies, and long-term effects?

Significance of the Study

Museums and schools are learning institutions that have frequently enjoyed a close relationship. Even so, no researchers have assessed the quantitative gains of history students who visited history museums; studies instead included qualitative descriptions of student experiences and attitudes. In an educational system that increasingly relies on standardized quantitative results to assign funding, it is crucial that educators understand the varied benefits of museum field trips.

Museums are responsible for providing educational opportunities to their visitors. The responsibility is no greater than with student visitors. The intellectual formations and connections made on museum visits may well influence students for the rest of their lives. It is crucial that museums and schools reconstruct their former associations so that students receive meaningful, accessible, accurate, and effective instruction inside and outside the classroom.

A survey of available data suggested that museum field trips increased student engagement and motivation. Expanded studies that make information on student performance available to educators and administrators may help offset existing budgetary and legal concerns. While addressing these issues, this study will present findings from research into the qualitative and quantitative benefits of first-person interaction (FPI) and museum field trips.

Learning Theory and Museums

As a discipline, history has been crucial to public education. Dewey (1990 version) recognized the importance of a strong foundation in history to the well-rounded student. In his ideal school, local history museums played a central role; he even included a museum on the grounds. He believed students should engage the past as they learned the important things of their present. These experiences helped students conceptualize their role in the larger world. According to Dewey:

If the aim of historical instruction is to enable the child to appreciate the values of social life, to see in imagination the forces which favor and allow men's effective co-operation with one another, to understand the sorts of character that help on and that hold back, the essential thing in its presentation is to make it moving, dynamic. History must be presented, not as an accumulation of results or effects, a mere statement of what happened, but as a forceful, acting thing. (p. 151)

During the late 20th century, public history programs developed with the goal of assessing and maximizing public engagement with the past. Public historians worked to make academic research accessible to anyone with an interest in the past. Guiding their work was the principle that people engaged the past through experience (Ahonen, 2001). Familiar examples were interactive history activities during which visitors could directly experience elements of the past. These experiences attracted visitors.

Many studies demonstrated how museums engaged public interest. For over a century, museums had held a place in the American experience. Museum education researchers Falk and Dierking (2000) extrapolated the statistics and found that between 40% and 60% of Americans visited a museum at least once every year. Between 1999

and 2000, 57% of the population visited at least one museum (Rosenzweig & Thelen, 1998). During the 1990s national museum attendance increased by 200 million visitors (Pitman, 1999). Between 2000 and 2003, museums in the United States received more visitors than professional baseball, basketball, and football games combined (Leinhardt & Knutson, 2004). While such statistics were not specific to history museums, they demonstrated the American public's interest in encountering information beyond the classroom. The data revealed a desire for information that was physically and temporally present.

As the United States left behind an industrial economy the acquisition, possession, and management of information gained prominence. The developing knowledge-based economy required spaces of learning for people beyond formal school (Falk & Dierking, 2000). Museums were ideal for fulfilling that requirement. According to educational theorist Gardner (1991), "Schools have become increasingly anachronistic, while museums have retained the potential to engage students, to teach them, to stimulate their understanding, and, most important, to help them assume responsibility for their own future learning" (p. 202). If Gardner, Falk, Dierking, and others were correct, museums and other free-choice learning institutions would gain prominence during the 21st century.

Beyond pure experience, museums provided trustworthy information. A survey of history museum visitors revealed a "connectedness of 7.3 out of 10 . . . more [trustworthy] than any professor or book" (Marcus, 2007, p. 108). Studies showed that Americans preferred social studies knowledge from proven FPI environments (Percoco, 2002; Vanderstel, 2002). A bevy of theories helped museum personnel attract and instruct

visitors through FPI and engaging material. With attendance high, researchers suggested that this work was effective; however, they did not distinguish non-school visitation from school field trips. No specific information detailed classroom museum attendance, and problems certainly existed when studying FPI between students and the past.

The educational system in the United States has had little room for Dewey's vision of experiential hands-on history education. Social studies became the realm of textbooks rather than artifacts. Textbooks focused students on popular people and events, but the material often lacked relevance for many students. Even the medium became anachronistic. At the least, museums addressed the problem of transmission. Many also offered naturally engaging content not covered in classrooms (Gardner, 1991). The experiences offered were essential for students to establish meaningful connections between the elements of social studies (Ahonen, 2001; Linenthal, 2002; Musbach, 2001). Museums of all kinds, including history museums, proved effective at bridging instructional gaps.

Detailing the ways Americans made meaning, Wallace (1996) touched on the Disney Corporation's focus on presentation. Park designers fully understood and accepted the idea that how visitors engaged something was as important as what they engaged. Walt Disney acted on his belief that people wanted to experience whatever they could, including history. In FPI-focused approaches visitors saw, did, and understood the physical elements of history that often eluded the classroom setting. This was an adaptation of Jean Piaget's argument that classroom teachers should stress exposure rather than direct instruction (Smith, 2007).

History sites had offered educational programs for decades; new efforts brought the techniques into dedicated museum spaces. Some history museum staffs generated programs that included suggestions from other accepted educational theories. Leading the effort was the staff of the Hands-On-History Room (HOHR) at the Smithsonian Institution's National Museum of American History (Grove, 1999). The HOHR offered a "self-directed, activity-based learning center for visitors ages 5 and older" (p. 18). HOHR staff designed activities to promote the hands-on encounters formerly available primarily at natural science discovery centers.

Staff worked to clearly connect student experiences in the HOHR with exhibits elsewhere in Smithsonian complexes. The interdisciplinary approach stemmed from educational theories of holistic experience and:

The theory of multiple intelligences espoused by Howard Gardner. Gardner identifies eight intelligences, or ways that people receive and process information. Because strong visual, linguistic, kinesthetic, logical, and audio components are incorporated into the activities, the HOHR reaches the broadest possible spectrum of visitors, including those with cognitive and physical challenges. (Grove, p. 19)

As the HOHR method proved successful at promoting widespread visitor engagement, other institutions began offering similar programs. Applying classroom-based educational theories to museum spaces resulted in an "understanding that people learn in different ways [and] has encouraged museum staff to think of varied ways to present information" (p. 20). The HOHR and similar programs demonstrated the potential of museums to implement classroom educational theory.

FPI and the social studies.

In American public education, social studies developed into a complex discipline with a variety of applicable educational theories. According to the National Council for the Social Studies (n.d.):

Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences. The primary purpose of social studies is to help young people develop the ability to make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world.(n.d.)

Compared with such broad objectives, the practical methods used in social studies classrooms were narrow. FPI was an established classroom tool in other disciplines (e.g., biology, chemistry, art) but not necessarily the social studies. Most classroom social studies education came exclusively via textbooks (Kelsch, 2002). This absent experiential learning style was the crux of FPI.

Though under-studied and under-utilized, engaging social studies FPI remained available in a variety of non-classroom settings. At living history sites, traditional museums, and other venues, students could ask personal questions while interacting in a potentially novel situation. Budget restraints, litigation concerns, and a lack of theoretical understanding by teachers and administrators prevented the field trips that allowed

students to experience social themes and history in the first person. School location also limited opportunities, though in these cases various technological supplements often existed (Farmer, Knapp, & Benton, 2006).

As studies in public history continued, students could expect more effective and readily present opportunities for engaging the past in the first person. These opportunities would come through an improved, measured understanding of how and what students learn through FPI history education.

FPI and the natural sciences.

As mentioned, FPI remained an established method in other disciplines. Particularly in the natural sciences, students engaged material directly, often through purely hands-on experiences. Classroom teachers fully relied on FPI instruction; biology, chemistry, and physics classrooms became experiential laboratories where students developed, conducted, and measured experimental results first-hand.

Even as natural science classrooms focused on FPI learning, researchers developed studies to assess the benefits of natural science field trips. Unlike their social studies counterparts, natural science researchers focused their research designs to collect quantitative data. Statistical evidence allowed confident researcher conclusions, and the natural sciences became the bastion of FPI experiences inside and outside the classroom.

Many researchers presented important findings that correlated field trips FPI with increased student performance.¹ Among the most important were studies by Farmer, Knapp, and Benton (2007) and American Institutes for Research (2005). These and

¹ Selected studies are detailed in Chapter 2, section 7: Quantified Museum Learning.

similar studies included reports of how student field trips positively influenced generalized learning and performance on content-specific assessments.

The efforts of those and other researchers gave classroom teachers accessible quantified information that supported experiential learning in the natural sciences. Existing studies were also references for other researchers interested in how field trip experiences affected student learning; unfortunately, for social studies students and teachers, administrators treated findings as discipline-specific. Social studies educators did not rely on natural science research to support an interest in historic field trip experiences. Gaps in research meant that social studies remained a textbook-focused content area. The gaps resulted in part from educational theories that did not apply accepted FPI methods from the natural sciences to the social sciences. More important was a prevailing assumption that—unlike the natural sciences—testable social studies learning could not occur through experiential methods.

Comparing Museum and Classroom Learning

Problems and potentials of museum visits.

Falk and Dierking (1995, 2000, 2007) were among those who argued the methods of testing found in the typical classroom ought not apply to museums. Effective museums dealt in generalized facts and overarching thematic content, not specific itemized information (Falk & Dierking, 2000). In the informal museum setting, visitors did not receive the one-way instruction tested for in the classroom. Instead, “visitors could be expected to learn broad generalizations and show generalized increases in understanding and interest, but the specifics of what they learned [remained] highly personal and

unique” (p. 173). Educational theorist Hein (1998) agreed that the understandings created were so dependent on contextualizing presented information within prior experience that the resultant formations eschewed objective measurement. Museum studies professional Allen (2006) argued that “it is commonly accepted by museum evaluators and visitor studies professionals that school-based methods of assessing learning, such as conceptual pre- and post-tests, do not transfer well to the study of learning in informal environments” (p. 260).

This created a position where proving the relevancy of museums to American social studies education relied on the common sense of classroom educators, not focused studies. Different expectations could have forced museums to demonstrate contextualized and content-specific information and may have yielded observable performance gains on standardized tests. Museum educators could also have shown that their holistic, personalized, and conceptual methods enabled deeper, more durable understandings.

Some museum staff achieved this aim; however, focused research was lacking. In a 1992 report, the American Association of Museums (AAM) stated, “Too few museums are involved in systematic evaluation and self-study as a stimulus for institutional variety and growth” (p. 13). With some effort, “many museums could be more effective in working with formal and informal education institutions and organizations as partners in carrying out their public service” (p. 13). The key recommendation was that museum methods needed to change to meet existing educational assessments, and that museum staff needed to “assess the effectiveness of exhibitions and programs in an ongoing evaluation process that encourages revision and experimentation to improve the visitor’s

experience of learning” (p. 7). The aim was mutual educational benefit, but the report overlooked the potential contributions of classroom educators.

Some researchers demonstrated that museums could introduce factual material while promoting discoveries of useful and testable information (Gottfried, 1981). Visitors also related new information with prior knowledge, “facilitating intellectual ‘connections’ and bringing together disparate facts, ideas and feelings” (Hein, 1998, p. 150). Museums and recognized public education methods had an acknowledged relationship, but evidence was primarily anecdotal. No statistical breakdowns of student assessments supported the claims.

Rationale for museum visits.

Studies did not address why teachers brought students to museums. Many researchers assumed classroom teachers used museums to stimulate student reactions and learning. Progressive educators hoped teachers planned to introduce new material, reinforce material introduced in classrooms, or enable contextual understandings of broad themes (Falk & Dierking, 2000). Other educators assumed that field trips represented a break from the normal school day. Interestingly, even without pre-visit preparation, students appeared to acquire new information and form new understandings (Gottfried, 1981; Marcus, 2007). This may have incorrectly suggested to classroom teachers that there was little educative work for them on field trips.

Most researchers treated museums as a form of free-choice learning environments. These environments generally specialized in providing FPI opportunities and offered students opportunities at self-paced learning independent of mediators such

as teachers(Falk, Dierking, & Foutz, 2007). Students were encouraged to explore topics and themes in a variety of ways. That exploration benefited personalized modes of learning, and often encouraged students to develop their own interpretations and explanations. In free-choice environments, students were “most likely to profit . . . when they have had intervention sessions to activate the schemes needed for the task” (Linn, 1980, p. 245). Similar findings on the importance of student preparation exploded any notion that classroom teachers lacked influence in free-choice or other FPI environments. Teachers needed to prepare students for the instructional methods they encountered. Efficient learning came more readily to actively prepared students. Studies suggested that successive visits became progressively more efficient, as students adjusted their learning modalities to the informal presentation style of free-choice environments. Research of how to maximize the varied benefits and opportunities of museum-based learning was a key need in American education.

Effects of Standards on Field Trip Opportunities

Government standards have a long history in American public education. The Elementary and Secondary Education Act of 1965 began the use of federally monitored standards. Education reform at the federal level was most active during the 1980s. In 1990, the National Governor’s Association developed an integrated set of educational goals. In 1992, Congress used the Goals: 2000 Educate America Act to authorize the development of national standards as a means of “evaluating student achievement” (National Council on the Social Studies, n.d.). In 1994, the National Council on the Social Studies created the first unified presentation of national social studies standards.

The 2001 No Child Left Behind legislation (NCLB) cemented prescribed standards as the chosen method for evaluating student, teacher, and school performance. One of the most recognized effects of NCLB was the correlation of school funding with student performance on standardized tests. Some worried that the mandate refuted the holistic education and evaluation methods advocated by Dewey, Piaget, and Vygotsky (Dewey, 1990 version; Hein, 1998; Leinhardt, Crowley, & Knutson, 2002; Linn, 1980; Murachver, Pipe, Gordon, Owens, & Fivush, 1996). For the social studies, NCLB brought greater scrutiny over teaching methods and results.

Social studies standards contained two main parts. On a macro level, the broad discipline had its own set of standards, designed to integrate the many associated courses. On the micro level, each subject had a separate set of standards. Standards were designed to help students gain and connect specific information to reach the macro goals.

At all grade levels, the standards prescribed study in ten main themes. Those themes were: (a) culture; (b) time, continuity, and change; (c) people, places, and environments; (d) individual development and identity; (e) individuals, groups, and institutions; (f) power, authority, and governance; (g) production, distribution, and consumption; (h) science, technology, and society; (i) global connections; and (j) civic ideals and practices. Some of these themes were effectively taught in the classroom; however, several suggested the interdisciplinary approach available in museums. A list of the specific standards, available from the UCLA National Center for History in the Schools, demonstrated the frequency with which students were expected to make interdisciplinary associations (2004).

In 1995, the Organization of American Historians released a special assessment of the newly published national standards. The publication included this explanation that the standards promoted an interdisciplinary approach:

The study of history involves more than the passive absorption of facts, dates, names, and places. Real historical understanding requires students to engage in historical thinking: to raise questions and to marshal evidence in support of their answers; to go beyond the facts presented in their textbooks and examine the historical record for themselves; to consult documents, journals, diaries, artifacts, historic sites, and other evidence from the past, and to do so imaginatively--taking into account the historical context in which these records were created and comparing the multiple points of view of those on the scene at the time.

(Organization of American Historians, ¶ 1)

The OAH assessment reflected the goal of those writing the standards, that the standards “not replicate the content of textbooks” (Appleby, 1995, ¶ 7). Authors were interested in pointing teachers towards topics best covered through engaging, interdisciplinary exposure. The goals often became lost as textbooks specifically addressed individual standards independently.

Impact on funding.

NCLB linked student performance on standardized tests with up to 8.3% of annual federal education funding (U.S. Department of Education, 2007). To ensure eligibility for the funds many administrators focused on teaching models dedicated to

passing the tests. Educators interested in providing field trip education faced new difficulties. Falk and Dierking (1995) voiced a common complaint:

Even though museums have increased in variety and exploded in popularity over the last few decades, their value to society seems to be in question as never before. While museums are aggressively characterizing themselves as institutions of public learning, diminishing resources and a political climate of public accountability are requiring that they demonstrate their educational value to society and justify their very existence. (p. 9)

Teachers and administrators used cost-benefit analyses when evaluating instructional methods. The result was often so-called “teach-to-the-test” environments. Arguments against such methods were widespread; most relevant was the concern over trading well-rounded students for a nation of test-takers. Without a cost-benefit analysis of the affects of field trip experiences on student performance, those forays continued to lose out during budget talks. Researchers needed to correlate field trips with increased student performance.

Lack of Research

Existing research did not quantitatively relate the instructional benefits of classroom- and field trip-based education. As students visited museums “to learn, to find meaning and connection . . . documenting this learning [proved] challenging” (Falk & Dierking, 2000, p. xiii). Before the advent of museum visitor studies, “it was assumed that people would learn, be enlightened, and be entertained by their visits to museums without any reference to the study of visitors’ experiences” (Hein, 1998, p. 5). Some

researchers recognized the problem, and called for long-term, mixed methods analyses of factual learning and conceptual growth (Anderson, 1966).

The lack of research on student learning in history museums was a great concern for history education in America. Common sense dictated that experiential learning maximized student education, as did the application of research from other fields. Certainly, the natural sciences demonstrated a solid link between FPI and increased student performance. Similar research may have uncovered verifiable increases in student performance following field trips to history museums.

Researchers, professionals, and theorists helped establish the rationale and framework for a study of student learning during museum visits, but most studies came from the natural sciences. It was unfortunate that scholarship on learning within the social studies—particularly history—did not keep pace. Still needed was the application of those methods to an intensive, long-term study comparing student performance following classroom- and museum-based history instruction.

Even the question of how many history students visited museums was unanswered. Professionals collected surprisingly little data of any kind on museum field trips. The AAM released their first study of museum education in 1992. Rather than detail learning in museums, the report offered suggestions for improving “experiential, emotional, and intellectual learning that is self-directed and voluntary” (p. 12). Researchers did not investigate whether those offerings were effective methods of education, or even if they succeeded in attracting visitors.

In many ways, the association between schools and museums has weakened. As “the public school movement and educational work in museums diverged . . . museums

[became] viewed as one type of institution among several that could provide education for the masses” (Hein, 1998, pp. 4-5). As this mindset took control, the interest in measuring student learning waned. Curriculum planners had little scholarship demonstrating history museums as proven educational resources. The “back to basics” education push, stressing fact-based knowledge and memorized material further undercut the perceived instructional benefit of visiting a history museum (Hein, 1998).

Few classroom educators focused published studies on field trips. Studies of student history learning outside the classroom continued to include only qualitative observations of student involvement. These efforts uncovered important evidence of student motivation and interaction, but did not include quantitative assessments of student learning.

Most research came from museum professionals. The researchers focused on marketing purposes more than on measuring student or visitor learning. They focused on the overall experience of visitors and their likelihood of returning to that museum with friends or family members. Those works were central to understanding the role museums play in fostering academic interest, but did not include the statistical information on student learning needed to secure funding in the standards-based public education system.

Some schools and museums maintained rich and rewarding working partnerships. More museums consciously developed extensive on-site programs tailored for classroom integration.² These options worked when distance was not a concern, but as many schools moved into the suburbs, their constituencies remained isolated from the traditional cultural centers (Williams, 2000, p. 1). This educational symptom of urban sprawl meant

² An example selection of museum charter schools is presented in Chapter 2, section 8: Recent School-Museum Partnerships.

museum resources were furthest away from those groups who could most benefit from them.

A variety of museums developed outreach programs for schools that could not physically visit. For poorer and at-risk students, who frequently lived further from cultural centers, such programs were critical (Costa, 1999; Tyler, 2000). Their parents were statistically less likely to visit museums (Falk & Dierking, 2000). When schools lacked FPI alternatives to field trips, such as distance learning programs, children lost exposure to important cultural elements.

When schools and history museums were miles apart, field trip costs quickly rose. Rising gas costs, driver pay, student meals, and the loss of classroom time for other subjects made field trips difficult to rationalize (Linn, 1980). Particularly at the secondary level, field trips seemed impractical expenditures (Donald, 1991). Given the cost of bus transportation—during the 1998-1999 school year, Austin Independent School District spent \$558,003 on driver overtime pay alone—it was little wonder that administrators expected a proven academic return on the investment (Combs, 2000). Evidence that museum field trips and FPI brought improved student comprehension and performance would have helped offset administrative concerns at such extensive resource outlays. As “museums [were] increasingly being asked for proof of their impact” (Falk, Dierking, & Foutz, 2007, p. 233), the data could have provided the rationale for bringing academic field trips back to secondary schools. No studies generated the needed data.

Statement of Terminology

The following terms were identified to clarify their use in the context of this study:

1. Public history is a discipline concerned with the ways in which academic history is made accessible to the public. Public historians work to promote a broader understanding of general history, including the physical and ephemeral elements of the past.
2. FPI refers to a mental and physical engagement between students and material (e.g. physical artifacts, sites, settings) that is unmediated. It generally implies the use of primary source material.
3. Free-choice learning involves an open instructional format. For the purposes of this study, it implies an environment that creates direct interaction between student and information.
4. Place-based education is an educational movement and method that provides holistic education as students directly encounter and explore topics in their communities.
5. Supplemental technology refers to the various classroom technologies used to enhance or complement traditional instruction, such as virtual exhibits, virtual tours, electronic research projects, and videoconferencing lessons.

Chapter 2: Review of Literature

The literature reviewed in this study focused on two areas. The areas were whether: (a) field trips produced FPI between students and material; and (b) the learning that took place via FPI was quantifiable. Of secondary importance was whether a study of FPI student learning could include large and diverse student pools, supplemental technologies, and long-term effects.

This review of literature encompassed studies from many disciplines, including the social sciences, natural sciences, education, and public history. The variety of source material demonstrated broad scholarly interest in the topic of using FPI as a supplement to traditional classroom methods—even in classrooms that regularly utilized hands-on, experiential techniques. No available studies quantified differences in academic achievement between students taught history in classrooms and students taught history on field trips. Scholarship did exist that quantified non-historical museum education, provided qualitative data on historical field trip education, and studied the use of supplemental technologies in the classroom. This review contained a broad swath of applicable material; however, notable gaps in existing scholarship remained.

Visitor Research and FPI

To quote San Francisco Exploratorium founder Frank Oppenheimer, “No one flunks museum.” Oppenheimer believed museums represented low-stress environments,

where people wandered through time and topic without fear of reprisal from professionals or academics (Cole, 2009). Museums allowed self-paced and self-selected learning. They encouraged the personalization of information. The word museum connoted “an occasional, casual, entertaining, enjoyable outing . . . ‘school,’ in contrast, connotes a serious, regular, formal, deliberately decontextualized institution” (Gardner, 1991, p. 201).

Informal views of museums precluded their association with formal schooling. Most early efforts were purely theoretical or descriptive. The first half of the 20th century was a time of developing interest in the relationships between museums and schools (Alford, 1949; Boas, 1949; Christison, 1948; Leggett, 1940; Munro, 1949; Rugg, 1946; Slatkin, 1947; Williams, 1945). The most progressive research efforts came from Melton, Feldman, and Mason (1996).

Originally published in 1936, researchers at the Buffalo Museum of Science discussed how museum efforts could maximize the effects of student visits (Melton, Feldman, & Mason, 1996). The objective was to determine “the best methods of direct instruction in the museums and the best methods for integrating the museum visit with the regular school” (p. 1). The authors believed museums could not exist as separate institutions, into which students could wander without preparation, and from which they could retreat without closure. They began their study of elementary school visits to the museum because “the uniqueness of the museum visit is the justification for serious and persistent attempts to make it par the maximal educational dividends” (p. 71). Observational data demonstrated student learning in the museum, but remained separate from classroom learning. Despite the stated intent, no data related student visits to

classroom learning. The researchers suggested “museums should not be content to accept any aspect of the visit as effects, until it has been shown that no more effective condition or method of instruction exists” (p. 71). It was three decades before another meaningful study followed the theoretical flurry of the 1940s.

According to Hein (1998), “The rise of visitor studies is closely associated with the rise of program evaluation in formal education” (p. 52). The open schools movement of the 1960s—followed closely by development of specialized public history programs—helped reinvigorate interest in free-choice and museum-based learning. Federally mandated school evaluations began in 1965. Visitor studies increased correspondingly.

Museum researchers began to focus on the practical application of theories regarding exhibit evaluation. Existing theories suggested that quantifiable data were desirable but were only obtainable through unobtrusive measurements. Anderson (1966) identified, observed, and recorded various indicators of visitor engagement. One of the most creative unobtrusive measures he used was the number and positioning of nose prints on exhibit case glass. Counting the number of nose prints allowed museum staff to estimate the number of viewers each exhibit received. The positioning of nose prints allowed conclusions about the age of interested viewers. A planned but uncompleted study of floor wear would have demonstrated patterns of visitor movement. These attempts did not measure learning, but did represent important steps in recording visitor behavior in museums. Anderson’s nose prints study also stimulated academic and professional discussion.

Larabee (1968) questioned the use of unobtrusive measures in museum settings. He doubted that physical remnants such as nose prints related in any way with learning,

or could establish even basic visitor patterns. Larabee believed those indicators demonstrated little more than a visitor's inability to see an artifact or read a label. He also worried that the main uses of such studies were marketing and advertising. Larabee argued that the variety of uncontrolled variables in museums prevented statistically significant experimental studies.

Anderson agreed, and openly discussed the "sad truth that randomized experimental design is possible for only a portion of the settings in which social scientists make measurements and seek interpretable comparisons" (p. 120). Museums were not among those settings. Like Melton, Feldman, and Mason, Anderson hoped that his attempt was not the final product in museum studies. He thought it "reasonable to consider development of a school-like test to cover these cognitive objectives" (p. 120).

Anderson wanted to provide quantitative data on museum learning, but could not bypass the concerns Larabee raised. Intervening studies generally avoided the search for quantitative data. Researchers instead focused their efforts on qualitative observations of FPI and visitor engagement. Two of the most frequently used research designs were historical observations and historical oral statements studies.

Qualitative Reports of Field Trip Learning

Observational studies.

Historical observation studies represented the easiest of museum studies research designs. These studies were similar to the design used by Anderson, but generally yielded greater quantities of reliable information. The chief benefit of these studies was that researchers were able to track and record visitor behaviors in real time. Researchers

frequently combined observational studies with other research methods, such as surveys or questionnaires. All of these studies demonstrated that field trips could produce FPI.

Gottfried (1981) developed one of the earliest modern studies of learning outside the classroom. Using a mixed methods treatment, he analyzed elementary student learning following a visit to a biology center. Pre-visit questionnaires established a baseline of student understanding. Participants completed the same questionnaires after the visit; results were combined with data from five methods of observation during the visit. Students drew concept maps to explain the experience and teach peer groups. The maps also served as assessments; Gottfried observed that on-task peer teaching focused on presented museum material. The peer teach sessions showed that the material was useful and accessible to students. Questionnaire responses evidenced that students made academic discoveries and engaged in recognizable learning. The key threat to validity was the lack of any control groups. Gottfried concluded that the fun, hands-on nature of the biology museum created an opportunity for meaningful learning of itemized and contextual information, but could not demonstrate that student learning was any more efficient compared with classroom instruction. Even without controls, there was reported evidence of student learning; the field trip was not just a day out of school.

Overton (2002) used triangulation in a historical observations study with pre- and post-testing to examine the effects of FPI on elementary student performance before, during, and after an industrial museum field trip. Students were tested on thematic concepts before the trip. At the site, students were exposed to guided tours, hands-on learning opportunities, and free exploration time. Students returned to school, and before the post-test, participated in a thematic review. The author did not include statistical data

but did note many impressions from the observation time, through which “one could assess improvement” (p. 11). Students appeared excited and engaged throughout the activities, asked pertinent and leading questions, and worked together at solving the hands-on problems. Observations supported the post-test results: students showed improved thematic comprehension. The author attributed gains to the application of FPI, a claim supported by the observational data. Overton concluded that FPI enabled a demonstrable improvement in overall student performance. Differences in subject attitudes created by the field trip are a potential threat to internal validity. The lack of subject characteristics and other sample information threatens the validity of generalizations based on this study. Threats to ecological generalizability exist because the researcher only studied one field trip.

The observational studies did result in reports of student engagement and general learning. The reliance on researcher observations and descriptions limited their applicability. In an attempt to better understand what students were learning on field trip visits, many researchers began to ask direct questions.

Oral statements studies.

Researchers interested in studying what students learned during field trips began implementing oral statements studies. The oral statement studies generally involved observational elements, but also included transcribed participant responses to specific questions. Responses were used as confirmation of the researcher observations and provided further evidence of learning through field trip FPI.

In a 1996 study of children's memories using historical oral statements, researchers "examined how event structure, event variability, and recall task might interface with source of event information to influence recall, and how these relations might change as a function of event exposure" (Murachver, Pipe, Gordon, Owens, & Fivush, p. 3032). Researchers exposed a group of EC-4 children to information in each of three ways: (a) participation activities; (b) watching videos; and (c) hearing stories. Researchers then interviewed the children to test the accuracy and accessibility of event memories. The authors hypothesized FPI (e.g., participation) was the best method for creating lasting memories. Their hypothesis was based on Piagetian theories of performed actions, and was supported by the conclusion that, "when an event is directly experienced, visual, kinesthetic, and semantic information may all be encoded and be available to aid memory retrieval" (p. 3030). Reliable generalization of the findings was not possible because of the small sample size and lack of control groups.

Supporting other calls for some direct instruction from classroom teachers, researchers did find a difference in recall between "activities that were logically related [and] those that were arbitrarily related," (Murachver et al., 1996, p. 3041) with logically related activities eliciting stronger memory events. One concern was that the FPI activities took longer than direct teach methods. The suggestion was that FPI was worth the added time commitment because the activities yielded improvements in specific and thematic student comprehension. Lending reliability to their conclusions were similar studies (e.g., Jerome & Barbetta, 2005; McDonnell & Jackson, 1999; Weinstein, 2001) that also reported correlations between FPI and increases in overall student performance.

To examine the relationship between FPI and student comprehension and performance, Wright (2000) used a qualitative oral statements study. Wright interviewed undergraduate sociology teachers and students on observed effects of FPI. Randomization and privacy promoted honesty in responses and may have mitigated some threats to validity. The author surveyed teachers from three different courses involving FPI field trips. Respondents commented that although “experiential learning does not have guaranteed results,” (p. 118) students seemed more engaged with material and each other during FPI instruction. The reported engagement corresponded with anecdotal increases in student performance following the trips. Of note were common responses that FPI experiences allowed students to connect advanced concepts and themes. The researcher also examined open-ended survey answers from students of other sociology courses. These surveys contrasted learning experiences on field trips with those encountered during class time. Eighty-two percent of students reported that field trip experiences positively affected their comprehension and data retention. For this sample, field trip FPI promoted improvements in comprehension and retention. The author extrapolated that even brief exposures to FPI may have improved student comprehension and retention. She also noted “short-term experiential assignments are especially beneficial for the instructor who is using experiential learning for the first time” (p. 117). The lacks of subject characteristics or location were potential threats to internal validity and external generalization. The use of two distinctly different samples seemed to threaten internal validity. Wright mitigated this threat because she was not attempting to correlate the answers of the two samples; however, findings would have greater significance if samples of teachers and students experienced the same events.

Jackson and Leahy (2005) used interviews to assess the experiences of eight elementary school classes that visited museums. On the trips, students experienced different types of FPI. Four classes viewed a theater production, while the other four classes engaged in hands-on learning activities, guided tours, and role-play. Researchers observed students on the trips and interviewed students to establish their feelings about the experiences. One author coded answers into seven units. The researchers found that visits created active participation and meaningful learning experiences. The findings supported the hypothesis that field trips created FPI and promoted student learning. Museum presentations drew student attention as they observed living history presentations or engaged the material physically. Researchers concluded that the freedom of the museum—relative to the structure of a traditional classroom—further contributed to the personalization of material. Threats to the internal validity of this study did exist. The described sample was diverse but small, and there were no controls for differences in subject characteristics. Data collector bias was a potential threat because of researcher involvement in categorizing student answers. Further research needed to control for these threats and use pre- and post-tests to return quantifiable results.

Farmer, Knapp, and Benton (2007) undertook a phenomenological analysis of the long-term memories of 30 fourth-grade students who visited a Tennessee environmental science museum. The study demonstrated the reliable use of historical oral statements as an instrument suitable for measuring free-choice experiences. Researchers assessed student comprehension through focused interviews. The authors chose this methodology because “literature supports the notion that in-depth interviews can be more effective than experimental methods for giving a detailed picture of what the participants experience”

(p. 35). Interviews conducted one year after the visit revealed consistent use of action verbs. The authors took this language to “suggest that several student participants retained long-term environmental and ecological content ” (p. 40). Without pre-test information to show specific informational gains, researchers depended on student self-assessments to establish factual gains. The authors were content that their design established evidence of student learning, but questions lingered regarding the reliability of their findings.

It was an unfortunate fact of all historical oral statements studies that effective controls were not possible. The nature of the research design did not allow the application of findings to larger populations. Even with those limitations, researchers were consistently confident in the accuracy their findings, and were able to demonstrate at least small-scale instances of learning through FPI experiences. Most researchers presented their studies as incomplete but necessary steps towards complete assessments of field trip learning.

Long-term Benefits of Field Trips

Some researchers applied observation and oral statement methods over extended periods. They focused on the retention of field trip memories. Selected qualitative studies uncovered long-term benefits of visits to museums.

Fivush, Hudson, and Nelson (1984) conducted a historical oral statements study of a kindergarten visit to an archaeology museum. Using one pre-visit and staggered post-visit interviews—administered immediately after, six weeks after, and one year after—researchers reported “children are able to recall specific information about a particular

episode based on a single novel experience” (p. 314). Researchers were impressed with memory accuracy. Assessments showed little deviation between immediate and six-week recall. Students continued to access specific information at the one-year mark.

Researchers found “the ease with which young children are able to recall real-world events suggests that this may be a more meaningful memory activity for them” (p. 314).

The results suggest field trips might represent a best practice for solidifying conceptual understanding and retention, as with a capstone experience. Given the length of time between interviews and the repetitious nature of the questions researchers reported using, maturation was the greatest threat to validity. Of particular concern was the reported use of pictures from the field trip to help initiate student discussions.

Baker-Ward, Hess, and Flanagan (1990) further supported the conclusion that students acquire specific long-term knowledge in free-choice environments. In a study of children’s memory formation, the authors found significantly greater recall “about activities performed by self” (p. 62) as compared with observed activities. The involvement children experienced in the study prompted greater understanding and long-term retention. Incompletely recorded information about sample size and population characteristics made generalizability impossible, but researchers did report that within the participant pool results were independent of development or age. The findings supported arguments that free-choice learning—frequently hands-on—could create longer-lasting comprehension as compared with direct teach methods.

In a precursor to their phenomenological analysis, Farmer, Knapp, and Benton (2006) reported a qualitative oral statements and survey study that examined the prevalence of FPI on school field trips. The authors accompanied a rural fourth-grade

class from Missouri on a visit to the George Washington Carver National Monument. Twelve months after the field trip and initial observations, the researchers interviewed 10 randomly selected students about their experiences. Students enthusiastically reported hands-on learning experiences. Responses were coded into units, which were then “transformed into clusters of meanings and . . . tied together to make a general description of the experience” (p. 28). The researchers concluded that long-term memories resulted from student FPI experiences. The authors found that students internalized and retained concepts encountered during field trip experiences longer than concepts learned through traditional classroom instruction. Researchers supported the conclusions with observations and 100% of the interviews. The primary threat to the internal validity of this study was instrumentation. Interview questions were not consistent throughout the study. The time between experiences and interviews created threats of history and maturation. The main threat to external validity was sample size. The small interview sample of only 10 students prevented the wide generalization the authors sought (p. 31). The authors noted these threats, but did not control for them. Similar findings from other studies gave strong support to researcher claims that FPI directly increased overall student performance.

All researchers who examined the potential of field trips for creating lasting memories reported positive findings. Their efforts suggested that even brief single-event exposures to FPI experiences could have lasting effects on participants. With the addition of quantitative assessment data, these studies would represent excellent evidence of the benefits of FPI learning to student comprehension and retention. As they were, the

studies served to encourage other researchers in their attempts to uncover verifiable instances of student learning on field trips.

Additional Benefits of Field Trips

As referenced studies suggested that field trip experiences created lasting memories of specific information, many researchers hypothesized that those experiences would affect students in other ways. Of recurrent interest to many researchers was if field trips promoted an increased interest in history specifically or learning generally. Other studies addressed even less tangible impacts field trips might have on participants.

Referring to Beveridge's five great evils—war, idleness, ignorance, squalor, and disease—Anderson (1999) claimed:

Today we might add a sixth, cultural exclusion, which existed fifty years ago, and which continues to deprive many people of the opportunity to participate actively and creatively in their communities. Our society, while generally more affluent, has also become more atomized and more sharply divided. The last two decades have seen the emergence of a 'second nation', a substantial minority which includes a disproportionate number of young people and adults whose lives are blighted by recurrent unemployment, poor housing, poor health and drug-related crime. One in three children now lives in poverty and in consequence suffers a significant educational disadvantage from birth. These divisions are reflected in museum audiences. (p. 13)

Anderson argued that museums needed to focus their efforts on inclusive education. He believed field trip experiences were necessarily inclusive. In American

public education, integrated field trips could have exposed all students to museum offerings. School field trips frequently represented the only opportunity for at-risk youth to visit cultural centers. Such a benefit was not quantifiable on assessments. Some researchers designed studies to find evidence for Anderson's claims, and used their findings to suggest additional hidden benefits, including the promotion of community-conscious citizens and life-long learners.

In a study of influences on early childhood development of place identification, Wilson (1997) found that "places shape human history," and that opportunities for community involvement were crucial to forming a "sense of place" (p. 191). More important than the aesthetic qualities of a school was the extent to which that school environment fostered a sense of community connection. The school environment was crucial because:

For most young children, the first public place they use and come to know intimately is their preschool or primary school. After this time, the school experience becomes a dominant force in their lives, in that by the end of their high school years, typical students will have spent approximately 12,000 hours in a classroom. (p. 192)

Students learned in school how to relate to their communities. Schools that encouraged varied community involvements "prove helpful in fostering a lifelong commitment [to community]" (p. 194). The anecdotal and observational data used to support her findings faced the typical threats to validity and generalizability, but also provided a basis on which other researchers could begin their studies.

One of the first studies to build on Wilson's efforts focused on the power of conceptual connections made in FPI environments. In a qualitative historical oral statements and observational study, McDonnell and Jackson (1999) observed the effects of field-based instruction on approximately 1,000 middle school students from around the country. Students traveled to Washington, DC for five days of hands-on learning activities focused on common historic themes. Students worked in random groups of four before joining larger random groups. Group work focused on reinforcing common themes while applying them to physical and cultural areas visited in the city. The authors observed the students during daily activities and conducted informal interviews throughout the program. The authors found that students exposed to field-based styles of learning more readily connected with the material, formed lasting mental connections, and were able to relate material to advanced abstract concepts. Researchers believed the connections were impossible without the FPI provided by the program. There were significant threats to internal validity. Differences in subject characteristics—including student attitudes—existed because students brought different feelings towards history in general and the field trip specifically. Many students reported initial discomfort with their groups at the hotel and during activities. Researchers addressed the threats in several ways. The differences in subject characteristics were key components of the design. Field trips are particularly effective in their ability to alter the attitudes of participants, yet without a formal test (e.g., survey) there was no control for these attitudes. There was no statistical breakdown, but the large number and geographical diversity of the sample lends greater population generalizability to the conclusions.

In a longitudinal survey study Pace and Tesi (2004) conducted 35-minute interviews with four men and four women from the New York City region regarding their childhood field trip experiences. The respondents were schooled in New York, remained in the region, and had taken at least one social studies field trip. The goal of the study was to determine if field trips influenced choices of professions or future courses of study. This study was important because such findings reflected how FPI influenced academics over time. The authors coded interview responses and presented them as a table of percentages. Field trip FPI played an important role in the education of the respondents: 87.5% considered hands-on FPI activities most formative. Respondents noted that field trips seemed to influence their eventual interests. The results pointed to long-term influences of FPI experiences. Of importance to classroom teachers is the immediate engagement this retention implied. Findings supported the hypothesized link between student involvement, retention, and learning motivation. FPI experiences positively influenced all three. One potential threat to internal validity was participant selection based on location and early education history. Although respondents lived in the same region, there were no controls for differences in subsequent maturation or history. The use of in-person and telephone interviews created potential threats to the validity of instrumentation and data collection. A wider study of either randomized or controlled subjects that used a consistent testing instrument would mitigate the threats. The researchers noted the need for further research before generalizing findings to a larger population.

Pace and Tesi interviewed participants in an urban area, but did not specify whether the respondents were ever classifiable as at-risk. In an increasingly urbanized

country, program effects on inner-city youths were a growing concern. To address that concern, Swaminathan (2004) used a phenomenological study of the effects of alternative school programs on urban youths. Swaminathan “investigated how graduates . . . understood, interpreted, and compared their experiences in previous schools that they considered ineffective with their experiences in an effective alternative school” (p. 33). In a curriculum focused on “community service learning” (p. 51) students received most of their course credit from projects outside the school. The format resulted in anecdotal evidence of improved testing scores, but more important were the greater reports of student satisfaction during interviews. Students developed positive attitudes towards their time in school. Through the continued interaction with the community, “students became invested in the life of the school” (p. 56). They developed a desire to see their school succeed and to see themselves succeed after they left the program. A serious threat to validity was respondent bias, as participants compared a positive educational climate with one they had previously found incompatible. Maturation also presented threats to the reliability of student responses, as participants hypothesized on the effects earlier experiences had on their current mental conditions.

In a study of rural youths, Morris (2005) made efforts to control for maturation. Using historical observational and oral statements, he examined the effects of the Clio Club extra-curricular social studies program on approximately 70 fourth- and fifth-graders in Indiana. The program exposed students to living history sites, artifacts, and reenactments. At school, students were encouraged to investigate their own questions and problems from the historic sites. Investigation activities included family members who also participated in student-led historical presentations at the schools. The author

concluded that because FPI engaged student interests, the program personalized community history, internalized lesson material, and gave students ownership of their understandings. The interaction created lasting links between past and present that students applied to other activities. The author suggested the added benefits could positively influence testable comprehension and performance. The lack of statistical breakdown of the sample creates a threat to external validity. The lack of pre- or post-testing prevented an unambiguous correlation between FPI and performance gains. Demonstrating this correlation through empirical evidence was a suggestion for further research. Providing transcripts from student interactions and interviews with the author could have mitigated these threats.

Other researchers reported improved school cultures following the integration of FPI and community-based programs into existing curricula. Duffin and Program Evaluation and Educational Research Associates (2006) reported educators became “more excited and collaborative in their professional practice, and more likely to use local resources for teaching and learning” (p. 6). The report further developed an earlier study conducted by Duffin, Powers, Tremblay, and Program Evaluation and Educational Research Associates (2004), which found that similar programs increased student engagement with their community and helped connect communities to their schools. Schools that implemented community programs reported shifts in academic cultures, including improved student motivation and reduced discipline problems (Duffin & Program Evaluation and Educational Research Associates, 2007). Existing curricula easily incorporated experiential community activities without major restructuring. The

reliance on self-reporting survey instruments created threats from sample size and composition, and prevented broad generalizability.

Despite the continued presence of basic threats to internal and external validity, researchers presented persuasive evidence that field trip experiences created benefits beyond improved comprehension or retention. Research reports included evidence of basic correlation between FPI experiences and increased motivation, conceptual connections, community awareness, and improved classroom discipline. Combined with potential evidence of quantitative performance gains, these studies could represent powerful motivation for the inclusion of field trips into the typical social studies curricula.

Supplemental Technologies as Alternatives to Field Trips

Even with persuasive qualitative evidence supporting the implementation of FPI instruction resource restrictions and/or physical location continued to prevent some schools from providing field trips. In social studies classrooms, technology often enabled an alternative to physical field trips. Many museums offered so-called “supplemental technologies” that brought museum resources to the students.

Some of the most popular and widely recognized technological offerings included virtual exhibits, virtual tours, electronic research projects, and videoconferencing lessons. The options provided access to museum resources, but were not the focus of research designs. No reports included data of how the above offerings influenced learning experiences. Researchers typically focused on theories of how teachers incorporated various technologies into their classrooms. Selected studies addressed the potential of

other supplemental technologies to create FPI and influence student performance. Researchers generally found positive outcomes, but some questioned the results.

Concerns.

Leading those concerned over the use of technology in classrooms was Wallace (1996). He reviewed the options available to museums facing a future dependent on technological connections, and argued that the only choice was adaptation, but cautioned that technology could significantly—and negatively—alter how students engaged, internalized, and conceptualized material. Pressed by needs to draw visitors, “most institutions will (to the extent of their resources) want to use the new hardware and software to elucidate objects, explain contexts, and involve visitors, especially youthful ones” (p. 109). The new hardware and software raised questions of representational fidelity. Wallace hoped that as museums increased their technological offerings, professionals and theorists would work to maintain academic rigor and integrity.

In their study on children’s memories, Murachver et al. (1996) cautioned:

The advantage of [physical] participation might be enhanced in comparison to more vicarious forms of experience, such as television, conversations, verbal instructions, or even stories about events without illustrations. That is, forms of other vicarious experience might produce even more impoverished representations than those observed in the present study, especially for young children. (p. 3043)

The researchers found that in attempts to present material through engaging or familiar media, teachers could inadvertently discourage interaction. Student familiarity

with television and movies sometimes prompted a passive response. Not all moving pictures demanded active viewing. The key suggestion was for teacher awareness. A close understanding of the material, and monitoring of student behavior, readily prevented the undesirable impoverished representations.

Kupfer (2007) worried over what influence the increased use of technology had on school-age children. He argued that the “electronically fabricated environment comprised of information, voices, and documents” (p. 38) threatened to remove any correlation between people and place. In classrooms that relied heavily on technology—particularly as a replacement for real experience—teachers risked alienating their students from the community around them. If Kupfer was correct, and “electronically produced experience is isolating,” (p. 45) then the abilities of a wired classroom to bring educational elements from around the world may have had negative impacts on student development. Teachers needed to be cognizant of these concerns while further research determined their validity.

The reported concerns over technology use did not result from formalized research designs; however, they did raise valid considerations of how technology could influence developing minds. Researchers interested in the prospects of how technology related to classroom instruction were mindful of the above concerns. The use of technology as a replacement for more traditional forms of experience warranted particularly thoughtful scrutiny. Without careful attention to the potential pitfalls of supplemental technologies, researchers could not claim to advance the study of FPI education.

Positive results.

Many of the researchers who conducted formal studies of supplemental technology use in social studies classrooms found firm evidence that technologies created FPI experiences. Studies included reports of a wide variety of subject characteristics and technologies used, which lent credibility to the overall argument that supplemental technologies resulted in positive student learning experiences. While researchers did not utilize traditional quantitative assessments, the general findings were consistent with those of researchers who studied traditional FPI experiences.

To study the hypothesized connection between technology and teaching methods, Russell, Bebell, O'Dwyer, and O'Connor (2003) conducted a 3-year survey-based analysis of variance study. This was the only study of supplemental technology that reported direct statistical evidence. The research team ultimately collected data from 2,894 elementary and secondary teachers in Massachusetts, and then coded answers into six categories of technology use, cross-referenced based on teaching experience and methods. After analysis, the researchers found a statistically significant ($p=.01$) difference between the use of technology by teachers with less than five years of experience, those with between 6 and 15 years of experience, and those with more than 15 years of experience. While new teachers were more confident with technology, they were statistically least likely to use technology in the classroom. Greater teaching experience correlated to greater use of technology. Researchers attributed differences to a shift in teaching methods over time. Experienced teachers were more interested in achieving FPI, and implemented supplemental technologies to help create student-centered instruction. Unlike other studies, this design used a large, randomized sample;

however, threats to internal validity still existed. Testing presented a potential threat to the internal validity of this study because data related the self-assessment of teaching styles. Random observations of teaching methods could have mitigated this threat. In comparison with similar studies, most variables were controlled. This design was a good example of how to research the problem of creating FPI through supplemental technologies.

Studies of teacher feelings towards technology were rare but important. Building on the efforts of Russell et al., Lipscomb and Doppen (2005) examined theories of technology use. In a qualitative case study involving pre- and post-test surveys, researchers selected 15 pre-service social studies teachers. Participants learned theories and practices of using technology in the classroom and completed a 10-week teaching internship. Researchers interviewed subjects on their views of classroom technology. The researchers were interested in whether teachers believed technology use created FPI in their classrooms and whether that FPI positively influenced student performance. The authors followed the methods of other interview-based studies and coded answers into predetermined categories. 100% of the respondents felt technology promoted positive FPI in classroom settings. Respondents were equally confident that supplemental technology benefited student performance in the social studies in particular. The findings demonstrated the potential for using supplemental technologies in the social studies. Despite the consistency of these findings, there were threats to internal and external validity. Of primary concern were the characteristics of the sample. Participants were graduate students enrolled in a class to train them on the use of technology, and the findings suggested training and awareness to the issues raised by Murachver et al. (1996).

In addition to this atmosphere, 10 students ranked themselves as beginners during the pre-test. These characteristics threatened population and ecological generalizability. This research design would serve as a strong pilot study for a larger study that examined theories of technology use by social studies teachers. Further research needed to exclude specific education in classroom technology.

Of note, neither this study nor that conducted by Russell et al., included a definition of “technology.” The subjective quality of the studies underscored the often-ephemeral nature of classroom technology use. The studies remained significant for the included reports of teacher attitudes, and researchers who examined specific technologies made similar conclusions. In certain cases, researchers examined technologies that seemed basic (e.g., movies, computer-response programs) but that resulted in dramatic improvements to student motivation, interaction, and performance.

In a qualitative historical documents and oral statements study incorporating post-tests, Weinstein (2001) examined the use of film as a supplemental technology. The author studied the History and Film Project run through Wayne College in Ohio. History students used randomly assigned films to analyze corresponding class themes. Over the semester, students conducted research and presented a paper linking the film and the theme. Through informal interviews and observations, as well as the final product, the author determined that the use of supplemental films increased student performance. Student interaction with material created connections with past events and forced them to consider historiographical questions about truth and representation not elicited from text sources. Even basic film technology created the well-rounded learning opportunities lacking from traditional efforts. The study did not include data about the subject pool or

mortality, which presented a threat to internal validity. The lack of sample information prevented external generalizations. The lack of a pre-test or control group meant the link between film and increased student performance through FPI was ambiguous.

Randomized sample selection, greater controls, and pre-tests would have mitigated the threats and allowed for greater generalization outside the sample population.

Supplemental technology was not necessarily limited to television or movies. Jerome and Barbetta (2005) studied the performance of students exposed to different types of computer-assisted instruction. The goal of the study was to examine differences between active and passive responses. While the researchers believed the use of computer-assisted instruction would increase FPI, they examined the potential of certain methods to increase this interaction. Researchers selected five students diagnosed with learning disabilities for the study. Randomized social studies vocabulary testing and observation time provided triangulation data for the eight-week study. After charting the test results, researchers concluded that active response computer-assisted instruction was more effective at creating FPI than passive responses, whether technological or traditional. The findings supported the concept that supplemental technologies achieve FPI but also provided a qualification: some forms of instruction promoted FPI more readily than others. Unfortunately, the small sample size and use of learning disabled subjects threatened the internal and external validity of this study. The lack of information on subject characteristics was a threat to internal validity. Researchers should also have considered the threat of regression. They did note that this design was a pilot study for controlled, large-scale studies.

Given the frequent researcher assertions that their efforts were incomplete and best used as pilot studies, the studies of supplemental technologies returned consistently positive and persuasive results. Particularly for those aware of the potential pitfalls, supplemental technologies offered excellent educational opportunities. Students engaged material in formats that were more familiar. Despite the concerns of Wallace and others, the use of technologies did not create impoverished representations. The nature of the technology allowed varied engagement, rather than typical one-way interactions. Researchers consistently suggested that supplemental technologies presented a suitable alternative to field trips for classrooms interested in creating FPI experiences.

Influences of Classroom Practices on Field Trip Learning

Additional research literature supported the belief that FPI and field trips positively influenced student educational experiences and performance. Evidence suggested that the different methods of museums and classrooms were mutually beneficial. Maximizing these benefits was a task for classroom educators. Researchers of the effects of classroom practices on FPI hoped to provide teachers with relevant research so they could implement curricula that yielded desirable results.

One of the earliest efforts to study how classroom practices influenced FPI experiences was also the most influential. Linn (1980) hypothesized that students received the best education when they encountered a combination of direct-teach and free-choice methods. Using a correlational study of 60 sixth-grade science students, she compared “interactive free choice learning environments” with direct instruction (p. 237). Linn wanted to maximize the benefits of pairing the two styles. After reviewing scores on

the administered pre-test and three post-tests, she found that “learning in [free-choice] situations is far more likely to take place if the learner has been given a general structure or alerted to the salient features of the learning situation” (p. 246). Testing presented a threat to internal validity because the instrument was not reported and because free-choice testing came after repeated instruction. Direct-teach testing measured only one instance of instruction. A more transparent testing treatment that included a true control group would have mitigated the threats.

Linn’s findings supported Hein’s (1998) assertion that museums required familiarity and Falk and Dierking’s (2000) assertion that museums presented substantially different educational experiences from classrooms. Linn did not agree that museums and classrooms presented irreconcilable learning experiences. She gave evidence that museums and classrooms were mutually beneficial, with their combined offerings outstripping the benefits of either used alone. What Linn found lacking—and her observation for science museums was applicable to history museums—was a systematic assessment of how to pair classroom and museum instruction.

Donald (1991) attempted to fill the gap using observations and questionnaires to study how classroom preparation related to museum field trip experiences. She demonstrated that classroom teachers were responsible for preparing students before museum visits. Without appropriate preparation, students risked being unable to find recognizable cues. As with the Zone of Proximal Development, which suggested “the gap between what a learner has already mastered . . . and what he or she can achieve when provided with educational support” (Coffey, 2009, ¶ 1), the cues were pre-requisites for effective student learning. The key element was that teachers ensured museum material

directly applied to the classroom curricula. Donald omitted any accumulated data, which limited the generalizability of her conclusions.

Anderson, Thomas, and Samson (2008) analyzed the effect of group work activities following a school visit to a science center. Twelve students were investigated with in-depth case studies that assessed existing science knowledge. Students created concept maps to aid pre-visit interviews, created a new map for a post-visit interview, and either created a new map or used their second map in interviews following classroom review activities. Researchers found that classroom group review activities “would most likely result in meaningful learning” (p. 7) if related with individual student experiences. Students made specific and complex connections with presented material. The findings suggested that classroom teachers had a significant impact on student learning following museum visits.

Researchers published more scholarship on the influences of classroom methods on free-choice learning than on the influences of free-choice methods on classroom learning. The findings generally revealed researchers’ underlying belief that museums were supplements for classroom education. Studies had common threats to validity and generalizability, which resulted from a lack of specified subject characteristics, testing instruments, and testing results; however, as with other areas of reviewed literature, researchers presented consistent conclusions. The general deduction was that students reaped greater educational benefits from FPI experiences when they were specifically prepared during classroom instruction.

Most qualitative research suggested FPI and field trips positively influenced student learning. Some of the researchers who attempted quantitative measurements disagreed. They debated over how to measure museum learning, and whether the specific learning of students in museums was measurable. The academic freedom of museums created problems for potential researchers. The typical museum environment could invalidate attempts at quantified measurement. Some researchers believed that free-choice learning environments were highly effective but immeasurable learning environments. The nature of museum environments prevented consensus on the influences of free-choice learning.

Evidence Against Quantitative Assessments

Museums lack experimental controls.

A chief threat to the validity of quantitative studies was control. As evidenced in the studies above, it was difficult to control participant characteristics and behavior in free-choice environments. As open, flexible, brief, and transparent environments, museums did not suit "design experiments [that were] extended (iterative), interventionist (innovative and design-based), and theory-oriented enterprises whose 'theories' do real work in practical educational contexts" (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003, p. 13). Acceptable quantitative design experiments could not occur in these conditions.

Hein (1998) believed the nature of free-choice environments precluded the application of standardized or quantified assessments. Although he desired a return to the close relationship between schools and museums, Hein was concerned that museums

were obsolescent in the new standardized educational climate. He effectively outlined some of the troubles in creating control and treatment groups. Expanding on the lack of blind studies, Hein said:

Whatever the educational ‘treatment’ might be, truly matched parties of experimental and control groups are very difficult to establish; it is almost impossible to limit the activities of subjects to those experiences being studied; outcomes are usually less clearly definable than physical health outcomes; and evaluators are seldom in ignorance of which groups are receiving ‘treatment’. (p. 65)

With total transparency in measurement techniques, researchers could not establish statistically significant findings that lacked major threats to validity.

Donald (1991) reported on worries that the fun associated with museum field trips resulted in meaningless learning. She acknowledged the inherent uncertainty of using familiar assessment methods, as the “measures used by educators are of time on task, knowledge gained, thinking and problem-skills, motivation or attitudes and creativity” (p. 371). Those elements were difficult to assess in free-choice environments. The novelty of a field trip could negatively impact student attitudes and attention. Donald also reported teacher “concern that a school day at the museum not become a holiday from learning” (p. 376). Questionnaires administered by Lenoir and LaForest (1986) suggested a mitigation, as “teachers . . . point out that museums serve students well when they illustrate topics in the school curriculum” (Donald, 1991, p. 379). Classroom teachers preferred free-choice experiences that contained material familiar to themselves and their students. The familiar material might have offset the unfamiliar environment and allowed

for student learning. Donald suggested that her findings demonstrated an inherent inability to quantify museum learning. If the information had to be familiar to students, researchers could not control for a student's prior knowledge when testing for FPI effects.

Museums and issues of comfort.

Another of Hein's (1998) concerns for studying free-choice educational settings was "the matter of intellectual comfort, the ability to associate the content of the museum exhibit with prior knowledge, with what is already known" (p. 161). He thought a museum visit was a sufficiently foreign experience that visitors might inefficiently utilize presented information. For Hein, the means of presentation was of prime importance. He related the personal, contextualized nature of museum learning with visitor familiarity. Museum visits—particularly those undertaken through school—tended towards brief one-off events; they were not fertile ground for long-term comprehension and retention studies. Given the brevity and infrequent nature of many school field trips, Hein believed "children need time, usually more than one visit, to become oriented to a museum" (p. 142). With inadequate preparation or familiarity, student discomfort in a novel setting might have prevented meaningful learning. As he concluded, "even if I feel relaxed, comfortable, and in control in a physical setting, I cannot access an exhibition that provides me with no clues to what is known to me already" (p. 161).

In the second stage of their observational study on children's memory formation, Baker-Ward, Hess, and Flanagan (1990) tested children's memories following activities with well-known and unknown peer groups. Improved retention of activities performed with well-known peer groups supported the hypothesis that familiarity and comfort were

crucial to effectively analyzing, storing, and retrieving information. Though not novel, this adaptation of Maslow's Hierarchy of Needs (Maslow, 1999) agreed with other researchers: students needed familiar settings to enable meaningful learning. Maslow argued that physical and mental comfort were prerequisites for learning. Baker-Ward, Hess, and Flanagan argued that potentially unfamiliar informal learning environments could ignore the basic needs of students. To ensure all students had opportunities for learning, the authors suggested that teachers who used informal settings be attentive to the mental and physical comfort of their students.

Some history educators used student discomfort and uncertainty as teaching tools. Weinberg (2009) reviewed the interpretive "Follow the North Star" program at Conner Prairie Interactive History Park in Indiana. In the program, visitors assumed roles as escaped slaves from Kentucky making their way to free Canada. The program was designed to be "'real' enough to be discomfoting, but not so real that it drives potential guests away" (p. 62). The method was effective. Participants internalized the experience so completely that staff occasionally recorded instances of minor violence. Of course, that level of discomfort was undesirable. For meaningful learning to occur, educators needed to "balance the need for intensity with the need for students to feel safe" (p. 64). Intentionally uncomfortable situations sometimes resulted in emotional states that prevented visitor engagement and blocked learning.

Traditional direct-teach methods faced similar concerns. Classroom teachers performed their duties more effectively when they assessed student knowledge and comfort before a lesson. Falk, Dierking, and Foutz (2007) asserted that museums taught what visitors almost already knew. They did not discuss the possibility that museums

could have aimed for that very result. The Zone of Proximal Development suggested that most educational experiences follow a pattern where teachers help students learn what they can almost grasp on their own (Vygotsky, 1986). Perhaps the greatest benefit of close classroom-museum partnerships was a clear understanding of just what knowledge visitors brought with them. Working closely with a classroom teacher, and understanding student progress through the curriculum, museum educators could have refined presentations and explanations to maximize the experience.

Comfort was an issue facing educators in all environments. In most cases, concerns of student comfort were no more crucial in museums than in classrooms. The common recommendation was simply that teachers be aware of students' prior understandings and mental states. Situations where participant discomfort would result in highly negative reactions remained rare.

Museums and contextualized learning.

Some scholars found museums—and free-choice learning environments in general—incompatible with classroom-style education and assessment. Falk and Dierking (2000) summarized the complex problem “that people learn in museums in easy to state, harder to prove” (p. 149). Specific concerns were that the type of learning in such settings was necessarily unquantifiable.

In their review of the topic, Falk and Dierking (2000) established free-choice learning as an experience lacking formal academic structure and involving the acquisition of broad, personal, conceptual understandings. The information museum visitors might gain was so contextualized within the individual that attempts to relate free-choice

learning with the direct-teach fact-based information transfer prized in the public educational system ignored essential differences. Falk and Dierking believed that museums represented crucial repositories of knowledge. Museum methods made knowledge more accessible and more meaningful than classrooms, books, or television programs, but they were not suited to standardized measures.

Falk and Dierking's book, *Learning from Museums: Visitor Experiences and the Making of Meaning* (2000), was a seminal work in which they outlined theories of studying museum learning. The authors argued that, although museum methods and environments offered an ideal means of educating a public thirsty for information, museums were not suited for the measurement of that information transfer. Authentic learning experiences, like those in museums, required authentic assessments. Standardized multiple-choice tests used across American public education were not authentic assessments of experiential learning.

Falk and Dierking (2000):

Believe that educators and psychologists, as well as policymakers and the public, have historically found [measuring museum learning] a challenging task because they have approached the problem incorrectly, quite literally asking a flawed question. In museums and schools alike, we have framed the question as, What does an individual learn as a consequence of visiting this museum, or seeing this exhibition, or attending this lecture? (pp. 11-12)

It is interesting that Falk and Dierking presented examples of demonstrated learning while asking the question above. Describing a study of the "Points in Time" exhibit at the Senator John Heinz Pittsburgh Regional History Center, the authors

acknowledged that when asked what they learned, “Visitors not only enjoyed *Points in Time*, but many also indicated that they had learned something new” (p. 161). Falk and Dierking related specific facts visitors “picked up” during their visits, but dismissed those findings because “most of these [acquired facts] were historical details about a topic the visitor had a prior interest in . . . there were no real patterns in what visitors said they had learning, or even what type of information was shared; learning was very idiosyncratic” (pp. 161-162).

The original study was typical of efforts to measure visitor learning in history museums (Abrams, Jones, & Falk, 1997). The research team, working from Falk’s position of museum learning as too personal to quantify, relied on in-person qualitative interviews with no pre-tests. Researchers chose a summative evaluation method to measure visitor enjoyment and determine if visitors felt they took anything away from their visit. These self-assessments yielded vague explanations of “an enriched understanding of the human experience in Pittsburgh’s past” (Falk & Dierking, 2000, p. 163). The research design could not yield data that disproved the hypothesis of non-quantifiable learning.

Using a similar method, Nespor (2000) concluded that students remembered field trips for extended periods and remembered them positively; unfortunately, this did not prove information retention information. Nespor attributed positive memories to student excitement at leaving school and purchasing gift shop items rather than information acquisition or FPI. Nespor conducted a qualitative ethnographic study on the results of two field trips in inner city Roanoke, Virginia. The goal of the study was to observe how these field trips allowed students to interact with spaces and history. Students from

ethnically diverse fourth- and fifth-grade classrooms took trips to Art Quest and Monticello, where the researcher observed and subsequently interviewed students regarding their experiences. The researcher concluded that rather than engaging the students on a personal level, the trips established or reinforced barriers between students and the public spaces. The author suggested that because modern schools were self-contained areas rather than integral parts of the community, students considered non-school spaces alien. This was especially true on field trips, when students remained in a pseudo-classroom setting. The conclusion was that field trips did not present testable information and involved situations that prevented FPI and student learning. Subject characteristics were a potential threat to internal validity. Ethnically diverse students visited locations described as elite, where the author noted their discomfort was the key memorable event. The conclusions reached in this study were not generalized to include other areas of the country. Continued, widespread studies of this sort would have provided results that were more reliable.

In their review of how the physical environment impacts learning, Maxwell and Evans (2002) stated, “Unlike more traditional learning environments where learning is typically treated as a solitary endeavor with one information source, museums offer valuable and unfortunately rare opportunities for collective learning experiences” (p. 3). The authors found that the two methods—free-choice and direct-teach—served different functions, achieved different results, and were quantifiably incomparable. In agreement with Falk and Dierking (2000), Maxwell and Evans believed that although “opportunities to extend the individual’s knowledge base are enhanced by the social context of learning . . . the learning experience will vary from person to person” (p. 3). The authors explained

that free-choice environments did not promote the one-way transfer of factual material generally found in classroom situations. Assessments of visitor learning that relied on methods from direct teach classrooms—namely multiple choice testing—used an improper instrument. The researchers did not include their testing instrument, an omission that raised threats to the validity of their study.

Researchers like Abrams, Jones, and Falk (1997) relied on observations, oral statements, and brief written surveys. These researchers were unwilling to restrict participants based on measurable criteria. They also believed that formal pre- and post-visit assessments could not yield applicable data on specific visitor learning. Maxwell and Evans (2002) explained how observations did not yield empirical data on visitor learning, while oral statements and surveys depended on participant assessment of prior knowledge and interest, and the effectiveness of exhibits for transmitting information. The general practices could not produce data that quantifiably demonstrated free-choice learning. These examples illuminated a key problem facing museum researchers: a theoretical belief that quantifiable instruments were unusable in the free-choice environment. Working from that hypothesis, many researchers were unwilling to attempt quantified assessments of FPI and free-choice learning.

Evidence Supporting Quantified Assessments

Other researchers believed that museum learning was appropriate for quantified assessment. They continued the use of anecdotal and observational data, but supported observations with test results. These researchers utilized pre- and post-visit assessments

that specifically addressed material covered in museums. Selected studies demonstrated that a quantified assessment of student learning in free-choice environments was possible.

Museums and critical thinking.

Some researchers who attempted to quantify student learning reached conclusions similar to those who argued for the added benefits of FPI experiences. In the quantified studies, the most common report was of increased critical thinking skills. The findings were the result of research designs and testing instruments formatted to assess critical thinking skills. The development of critical thinking skills was an important aim established in the national social studies standards. If field trips and FPI effectively developed those skills, it was an important consideration for classroom educators and administrators.

In a pre-post nonequivalent control group design, Wright (1980) studied the influence of a museum-based review session. A control group of sixth-grade students received five weeks of classroom instruction and one week of classroom review. The experimental group received five weeks of classroom instruction and one week of review in the Kansas Health Museum. Researchers tested both groups on “comprehension and application of human biology knowledge and concepts” (p. 100). Assessments revealed “superior comprehension and application of knowledge and concepts” (p. 102) from the experimental group. As Wright explained, “The use of audiovisual displays and exhibits correlated with trained instructors provides for a greater assimilation of human biology information when compared to reading the textbook, completing assignments, and participating in classroom discussions” (p. 99). The researcher credited the experiential

and sensorial nature of the museum review with promoting improved understanding of assessed concepts. The use of multiple participant groups made the findings more credible, but threats to population generalizability remained. Expanding the study beyond two classrooms would have mitigated the concerns.

A study that considerably expanded the participant pool came in 2004. Published in 2006, the mixed methods study of student motivation and performance returned improved results on a variety of standardized measures (Athman & Monroe). Participants were students enrolled in alternative community-based programs. The programs made limited use of museums, but did rely on free-choice methodology for the majority of student instruction. Four hundred 9th- and 12th-grade students from 11 Florida schools sat three norm-referenced tests: The Achievement Motivation Inventory; Cornell Critical Thinking Test; and California Measure of Mental Motivation. Researchers reported significant student improvement on all three tests as compared with peers in traditional programs. The study also demonstrated the feasibility of using traditional assessments to measure learning that occurred in FPI environments. The main threat to validity was a lack of information on the non-participant control group. Without knowing specifics regarding the instructional methods experienced by all tested students, conclusions had limited generalizability.

Though not exhaustive, the two studies provided solid evidence that FPI instruction promoted improved critical thinking skills. Particularly given Athman and Monroe's use of accepted traditional assessments, it was understandable that researchers felt their findings were applicable to larger populations. There was clear support for studies that analyzed FPI instruction through quantifiable assessment instruments.

Quantifying contextual learning.

One study deserved recognition for the implications it included for the assessment of contextualized learning. Given the strength of some arguments that FPI learning was too personalized for traditional assessment, the evidence to the contrary was impressive. Although the research design involved elements of qualitative studies, the actual application was effectively quantitative.

Leinhardt and Knutson (2004) conducted an oral statements study to measure the prevalence of learning language in museum visitor conversations. Researchers studied visitors of seven exhibitions in five museums. Participants wore wireless recording microphones throughout their visit. At the conclusion of the visit, participants completed an oral interview and returned the microphones for transcription. The researchers used Bloom's Taxonomy of Learning (Bloom, 1974) to classify the type of language recorded. After coding, up to 97% of visitor conversations contained "learning talk" (p. 264). Most of the conversations were thematic, fell into one of five categories, and were relevant to the exhibit. The conclusion was that museum visitors were not prone to an infinite variety of experiences or understandings, and that even specific individual learning was testable. Evidence suggested that even the personal creations of meaning, which many researchers predicted, occurred in the context of group discovery. Researchers observed visitors "sharing their available cultural and intellectual resources and building new ones together" (p. 159).

Though their study faced similar threats to internal and external validity of other historical oral statements studies, there were several mitigating factors. Most important

was the use of recording devices. The microphones allowed researchers to check interview responses against comments made in the exhibits. This provided additional evidence that participants faithfully were faithfully recorded their FPI experiences. The use of an established and accepted taxonomy for the answer coding mitigated concerns over the testing instrument. The key threat that remained was population generalizability. Because researchers did not exclusively study student groups, the application of their findings to classroom instruction is limited. The application of their methods to student museum visits likely would have yielded crucial missing data on the influences FPI experiences had on student learning.

Place-based education.

Most of the recent research into the influences of FPI and free-choice learning on student attitudes and performance came from place-based education (PBE). Championed by programs like that run through Promise of Place, PBE focused on community-minded, experiential learning opportunities integrated with traditional curricula (Promise of Place, 2009). The typical PBE program was heavily environmental, and most promoted student senses of “environmental stewardship” (Place-Based Education Evaluation Collaborative, 2009). While these programs were not generally associated with history or museums, research into PBE yielded proof of the effectiveness of experiential, free-choice learning. Many studies reported statistically significant improvements in: student attitudes towards the environment, their communities, their schools, and themselves; internal motivation for pursuing similar efforts out of school; and performance on a variety of assessments, including critical thinking, reasoning, and standardized tests. Because national social

studies standards repeatedly referred to student understandings of global communities, PBE programs that demonstrably promoted community connectedness were quite relevant to history classrooms.

Lieberman and Hoody (1998) conducted a survey of 40 schools in 12 states that demonstrated the efficacy of integrating community education into existing school curricula. Teacher interviews reported reduced discipline and classroom management problems, and reported increased engagement and enthusiasm. Researchers also analyzed scores from assessments of overall comprehension, language arts, math, science, and social studies. After analysis, “all nine, 100 percent [*sic*], of these comparisons indicate that students who are in [PBE] programs perform better on these measures than their peers in traditional programs” (p. 3). With regard to the 96% of educators that reported increased student knowledge of social studies, the authors reported teachers found students “particularly amenable to alternative instructional strategies, authentic assessment, team teaching, and cross-disciplinary instruction” (p. 10). The study had similar threats to validity as other free-response survey and historical oral statement designs.

A report commissioned by the National Environmental Education & Training Foundation (2000) compared various standardized test scores between students involved in PBE programs and those who received traditional educations (Glenn, 2000). Students at 11 schools in Wisconsin, North Carolina, Minnesota, Texas, Kentucky, and Florida demonstrated increased performance over their non-PBE peers on a variety of standardized assessments. These measures included: the Wisconsin Reading Comprehension Test, ACT, the Iowa Test of Basic Skills, and Florida Writes programs.

The breadth and scope of this study demonstrated the effectiveness of PBE and experiential programs on standardized performance for diverse student groups.

Qualitative interview data demonstrated increased student confidence and connectedness with material. The use of mixed methods treatments mitigated concerns over testing instruments, while the large and diverse sample pool allowed generalizations that were more reliable.

The American Institutes for Research (2005) “conducted an evaluation to measure the impacts of week-long residential outdoor programs for at-risk sixth graders in California” (p. iii). Researchers collected pre- and post-experience quantitative assessments and on-site observations from 225 students who attended PBE programs aligned with state science standards. In comparing student scores on curriculum-specific assessments, “children who attended outdoor school significantly raised their science scores by 27 percent . . . [and] maintained six to ten weeks following program participation” (p. vi). Researchers also reported student improvement in social and interpersonal skills and community connectedness. Suggestions were that PBE and experiential learning programs yield measurable improvements on traditional assessments:

It appears that students better understand the complex interrelationships and connections among individuals, communities, and society when they have the chance to apply their social studies knowledge in real-world settings. At the same time, they develop a deeper, contextual understanding of history, geography, and political systems. (p. 7)

Those improvements in social studies understanding came through programs designed around experiential learning in environmental science.

Possibly the most important feature of PBE was that it:

Does not need to cost more than traditional learning. Administrators have reported that the cost of copies and transporting students can be made up through lower textbook purchases. The additional adults required for field studies can be found through mutually-beneficial community partnerships. Funds for special supplies or travel can often be obtained through grants from private foundations or agencies, or donations from local businesses. Funders are often attracted to the range of goals addressed by PBE. (Promise of Place, 2009)

Fully integrated PBE programs were an excellent option for schools wishing to improve academic performance while watching their budgets. In the interconnected history classroom, experiential community offerings could have created similar dual benefits.

The key contribution of the PBE research designs was their reliance on established traditional assessments to measure student learning. As with other studies that used similar assessments, the PBE studies gave evidence that FPI experiences are conducive to measurement via existing instruments. Researchers suggested the application of the techniques detailed above to measures of the influences of FPI on social studies education.

Recent School-Museum Partnerships.

Appearing in the 1990s, museum charter schools sought to re-establish a close and permanent education link between history museums and public education. In most cases, museum charter schools and similar efforts resulted in reports of dramatic improvements of student motivation towards history curriculum, and increases performance on traditional assessments. The first recognized museum charter school opened in 1991. Within the first decade, “over nine hundred charter schools [opened] in twenty-four states, including the District of Columbia” (Pitman, 1999, p. 18).

The quick spread of the museum charter school concept demonstrated an interest in combining the instructional offerings of traditional schools and free-choice history museums. The movement represented the most complete attempt at resurrecting Dewey’s almost century-old goal of interrelated classrooms and museums. Two exemplary museum charter schools were those opened at Historic Brattonsville in York Country, South Carolina, and the Henry Ford Academy in Dearborn, Michigan (Partlow, Meyer, Hamp, & Enriquez 1999).

At Historic Brattonsville, students experienced “Brattonsville Academy 1840,” an immersive, experiential program detailing the third-grade experience as it was in 1840 South Carolina. The program relied on authentic buildings and specially trained instructors to recreate the experiences of 19th century schoolchildren. Students who attended the “Brattonsville Academy” received regular instruction at the historic site that aligned with the traditional school curriculum. Museum staff and classroom teachers reported observations of increased student engagement and motivation, as well as improved student performance on history assessments.

The Henry Ford Academy was a high school on the grounds of the Henry Ford Museum & Greenfield Village. Accepted on a lottery basis, students attending the Henry Ford Academy had full access to the considerable museum resources (Graybill, 2005). Each year brought a different focus to student courses. Close integration with museums allowed seamlessly interdisciplinary instruction. Teachers of disciplines outside the social studies generally utilized historical information and resources to help students connect with material (Graybill, 2005). Museum charter schools such as the Henry Ford Academy offered students the interdisciplinary education experiences expected in the national social studies standards. According to Henry Ford Academy teacher Graybill “[teachers] explain brain theory to [students], and they start to understand why integration of information and skill is helpful to learning” (Graybill, 2005, p 54).

The most pertinent study of specific social studies learning outside the classroom was the provocatively titled *Challenging the Classroom Standard Through Museum-Based Education: School in the Park* (Pumpian, Fisher, & Wachowiak, 2006). The School in the Park program was partly an outgrowth of the museum charter school movement. In their book, researchers detailed a long-term study of repeated field trips in and around San Diego, California. The authors immediately acknowledged that “few schools and districts may have access to the resources necessary to operate a program on [this] scale” (p. 1), but believed their results also gave credence to other experiential and field trip programs. Their design centered on the study of student performance on standardized assessments, including state-mandated exams. Over the school year, several hundred participating students made repeated visits to 10 local free-choice learning environments. The environments covered material in language arts, social studies, math,

science, and visual arts. The San Diego Museum of History was the main environment for social studies presentations.

The social studies component of the School in the Park program focused on using artifacts to spur student imaginations. Researcher observations and interviews revealed the “explorations transported [students] to a long time ago and to places far away” (Schell, 2006, p. 123). Transitions between museum and classroom activities were seamless; the participating school was across the street from the museum. The highly integrated curriculum followed the suggestions of many professional social studies organizations, including the National Council for the Social Studies, the American Historical Society, and the Organization of American Historians. The interdisciplinary focus was typical of museum charter school efforts like the Henry Ford Academy.

The program made claims of improved student performance on standardized assessments, but the published work included no data. Reported evidence of student social studies learning came through descriptions of student involvement and motivation, such as:

Many students stated that learning in the park was fun. Roberto [one of the students participating in the study] was no different. He said that it was fun to study bones when you think you are an archaeologist and learn how to handle artifacts and tools properly. Roberto went on to explain that in the park, he gets to learn things that he was not going to learn at school. He knows that subjects, such as Egyptian mummies, are not normally part of the fourth-grade social studies curriculum in California. He said, ‘We get to learn things before the grade we’re

supposed to. When I get to sixth grade, I know I won't struggle as much when we learn about Egypt'. (Schell, 2006, p. 129)

There were clear benefits for the students involved in the program; the lack of assessment data did not reduce the impact of statements like Roberto's. The researchers presented the program as a crucial element that concluded when "students succeed in achieving curricular goals and standards" (p. 144). The anecdotal evidence from this and other studies correlated to improved performance on assessments, which suggested those goals were easily attainable.

There was a large body of scholarship on the creation of museum charter schools.³ Available literature demonstrated the prevalence of museum charter schools. Despite the popularity of these efforts to pair traditional schools with history museums, there was no available data on specific student learning. As with other reports of student learning in free-choice environments, studies of museum charter school experiences included purely qualitative descriptions of student involvement and motivations, as well as tangential descriptions of improved performance. A focused study of standardized testing data—a resource that should be reported by publicly-funded museum charter schools—could have uncovered student performance. Even assuming that museum charter schools reported that information, the lack of self-assessment data remained problematic. Classroom teachers interested in the proven benefits of school-museum partnerships should expect readily available evidence.

³ Even a cursory search returned explicit instructions on the minutiae of forming a museum charter school, including architectural concerns, but no data on how those schools influence learning. For an example, see American Association of Museums. (1998). *The charter school movement and museums*. Retrieved July 11, 2009, from http://www.aam-us.org/pubs/mn/MN_SO98_MuseumCharter.cfm.

Conclusions

The following conclusions were identified as a result of reviewing, analyzing, and synthesizing the scholarly literature on the benefits of using FPI in social studies classrooms. Conclusions were supported by a majority of the literature. Considerations from both positive and negative research studies were incorporated.

While a view of students as “vessels to be filled”(Hein, 1998, p. 21) continued to dominate—as it clearly did in the era of standardized testing—the free-choice environment of museums had difficulty in proving their relevance. Gardner (1991) believed, “Much if not most of what happens in schools happens because that is the way it was done in earlier generations, not because we have convincing rationale for maintaining it today” (p. 202).

In 1991, Donald reported that no quantitative research of student learning in history museums existed; intervening work did not fill the gap. Potential researchers may have been wary, because “in less researched areas, the team typically needs to conduct pilot work to document these understandings and, thus, the consequences of students' prior instructional histories” (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003, p. 11). Most researchers presented their studies as pilot examples.

Many researchers demonstrated the potential of field trips to enable FPI instruction. Researchers reported FPI instruction in various content areas, including the specific social studies disciplines. Field trip FPI experiences did not seem dependent on length of exposure. Reports of FPI came following succinct or extended experiences. They required both minimal and extensive preparation from teachers and students. At

minimum, anecdotal evidence suggested a correlation between exposure time, preparation, and performance gains.

Supplemental technology use was a component of FPI instruction. Supplemental technology used multi-sensory input to engage students. An added benefit of technology use was that many students had a natural affinity towards technology. Findings were consistent across age groups and developmental levels, and were independent of the type of technology used. All studies included reports of increased student participation. The broad conclusion was that supplemental technology use represented an effective alternative to field trips for teachers interested in promoting FPI.

Policymakers resisted efforts to integrate PBE curriculum into state standards (Jennings, Swindler, & Koliba, 2005). The prevailing attitude was that the “two initiatives either work at cross-purposes or are completely incompatible” (p. 44). The central objections were over “who determines standards, to what ultimate end they point children, and how they are measured” (p. 49). Many policymakers doubted the ability of state or nationally mandated tests to assess the learning of students in programs that stressed local experiences. Lacking demonstrable evidence of student improvement on broad standardized tests, field-based education offerings continually met resistance.

American educational realities required specific information from studies of student learning. Researchers needed to provide empirical, quantitative data on the differences in student comprehension, retention, and performance between FPI and the more traditional methods of teaching social studies. With such studies, quantitative researchers and administrators would have recognized the correlation between FPI and improvements in overall student performance.

Various studies demonstrated that FPI experiences yielded quantifiable results. FPI was shown to improve student comprehension, retention, and performance when compared to textbook, lecture-based, or other passive teaching methods. FPI from field trips and supplemental technologies allowed students to internalize and connect abstract concepts. FPI allowed students to comprehend advanced concepts. Evidence pointed to museum field trips as ideal opportunities for students to engage material in ways not available in traditional classrooms. Most evidence came from natural science research; however, some studies suggested that similar efforts could uncover related performance increases in the social studies and history. Most important were findings that traditional assessment instruments, such as standardized aptitude tests, could effectively measure student performance gains following FPI experiences in otherwise uncontrolled free-choice learning environments.

Most of the studies were unable to control a variety of factors. A general problem was the lack of information regarding prior field trip experiences of students. Threats to internal and external validity prevented the generalizability of specific studies, but the consistency of researcher conclusions across studies suggested the essential findings were reliable. A few research designs were able to provide certain controls. The successes demonstrated the feasibility of highly controlled studies of FPI and free-choice learning. Educators needed larger, more diverse studies that focused on student interaction with field trip material.

Implications for Classroom Instruction

The following implications for classroom instruction were made as a result of reviewing, analyzing, and synthesizing the scholarly literature on the benefits of using FPI in interdisciplinary social studies classrooms. Field trip experiences represented an excellent supplement to traditional methods, and many studies suggested that experiential learning practices could effectively replace classroom instruction. While many of the studies reported increased student performance regardless of teacher input, all studies reported more effective student experiences when the classroom teachers were directly involved in the field trip experience. Classroom teachers who clearly understood guidelines of the benefits and methods of FPI instruction were able to maximize student experiences and learning.

Classroom teachers effectively found experiential history offerings in their areas. Effective field trip experiences were available at small and large institutions. The larger museums had consistently excellent programs, but also presented an intimidating amount of information. Smaller-scale sites focused students on more specific themes and information. The staff at small sites was also willing to work with teachers to create customized activities and lesson plans. Teachers who sought grant money before initiating their field trip inquiries also reported more consistently positive experiences; they had the funding ready first.

Administrators must provide FPI alternatives for students whose schools lack access to field trip opportunities. An effective alternative existed in the form of supplemental technologies. The use of these technologies promoted similar multi-sensory approaches to concept acquisition. Supplemental technologies had an added benefit: many of the proven technologies were already present in social studies classrooms.

Instructors that had access to reliable supplemental technologies and the supportive theories on their use easily integrated FPI instruction into typical lessons. The consistent use of FPI through supplemental technologies allowed students to develop comfort with less traditional forms of instruction while reaping many of the instructional benefits of more intensive field trip experiences.

For students offered field trip experiences the focus was relevancy. Teachers needed to implement educational practices that allowed students to relate advanced concepts to their own lives. Field trips generally enabled these types of learning opportunities, but overall educational gains were greater when teachers focused student attention on common themes. Providing students with first-hand, experiential instruction at authentic sites enabled classroom teachers to promote advanced thematic and conceptual development. As an added benefit, themes and concepts easily translated to students experiences from their lives and their communities. Instructors readily promoted community involvement and increased senses of connection following FPI instruction outside the classroom.

FPI experiences encouraged students to use varied senses and modes of thought when they engaged the material. Teachers who prepared their students for the expected instructional and learning changes helped students maximize the experience. This guided engagement improved overall student comprehension, retention, and performance. Educators encouraged FPI to promote deeper understanding and improved student performance in the social studies classroom. Doing so maximized the educational experience.

In all cases, the prime responsibility for the classroom teacher was in preparing student expectations. Classroom teachers that focused on how field trip material connected with prior classroom instruction were able to help students create the connections necessary for long-term learning. Field trips in themselves were effective and memorable teaching tools. Researchers reported that pairing field trip experiences with classroom instruction resulted in more effective instruction than traditional approaches alone. Classroom instruction that prepared students for field trips and reinforced what students encountered on the field trip promoted the greatest increases in student comprehension, performance, and retention. Lesson plans that reflected this understanding prompted administrators to secure the resources necessary for successful social studies field trips.

Recommendations for Further Research

Most recorded concerns over the use of FPI and field trip instruction methods focused on gaps in existing research. Educational theories supported experiential learning strategies, but did not include accompanying data, and administrators and policymakers were justified in their skepticism. Research designs that effectively demonstrated the varied benefits of FPI instruction to student performance, particularly on standardized tests, would have given support to field trip advocates.

It is clear that additional studies are needed to continue the search for correlations between museum and classroom learning. More research is needed to examine the connection between the application of technology and FPI. Little information reflected teacher experience with technology and no information reported district or administration

policies of technology use. Practitioners needed broader studies of the wide variety of supplemental technologies available to classrooms, particularly as new technologies became available.

Needed is a long-term (e.g., three year minimum) mixed methods study that incorporates data from middle-of-year and end-of-year standardized tests. Dealing specifically with history, such a study would most effectively occur at a living history site, where hands-on learning is an accepted practice. The focus of researchers should be in selecting a research design that allows the study of student performance following traditional and FPI-based history instruction. The most applicable research design is causal-comparative. The hypothesis is that FPI methods will yield quantifiable improvements in student comprehension and retention of conceptual and factual historical information.

Researchers should begin the proposed causal-comparative study with pre-visit assessments. Assessments should follow methods already established in the classroom(s) under study, but also include interviews and surveys. The most important element of the pre-visit assessments is that they assess conceptual and factual knowledge.

An ideal research design will involve multiple field trip experiences and the use of one or more supplemental technologies. The need to test multiple treatments (e.g., physical and technological field trips) requires the use of at least three groups of students. The number of treatment groups introduces other difficulties for the researcher, but resulting conclusions will be stronger. Concurrent study of the effects of comparable instruction in traditional classroom, field trip, and technology methods will provide the beginnings of a Likert scale of benefits.

On visits, researchers should observe student interaction with material, peers, instructors, and other visitors. If possible, audio or visual recordings should provide additional information and allow later review; an excellent example is available from Leinhardt and Knutson (2004). While one or more groups of students receive museum instruction, a comparative control group must receive traditional classroom instruction. The control group(s) may expect a later field trip experience. The offer will allow further study or prevent feelings of exclusion.

Following the field trip experiences, researchers should administer post-visit assessments to treatment and control groups. The assessments should be somewhat classroom-specific to promote familiarity, but must be consistent across participating classrooms. Researchers should analyze assessment results and interview/survey responses using an appropriate method of statistical analysis. If used, researchers should transcribe, code, and analyze recordings for comparison purposes.

As with prior studies, the main difficulty will be establishing controls. Threats to validity will likely come from the prior experiences and age of participants. Researchers can mitigate participant threats with large or randomized sample populations. More problematic is the threat of maturation. For example, consider a long-term study of two groups of fourth-grade students. During the first phase of the study—whether semester or year—the control group receives traditional instruction while the treatment group receives field trip instruction. To determine the potential for generalizability, the groups would switch. Any findings could be valid between groups during either phase, but not between periods. Intervening experiences and learning will have created uncontrolled threats. This condition seems irreconcilable.

Even with maturation threats, the proposed study represents an improvement over existing research. The potential shortcomings are also consistent with accepted difficulties facing researches of traditional educational practices. Overall, the potential threats do not preclude the necessity of the study.

History students in American public schools deserve exposure to the most beneficial, effective, and authentic instructional methods. The current system does not seem to provide such methods. Existing scholarship supports the study proposed above. The new research will help uncover the best practices of history education.

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