The Role of Teachers Attending Field Experience Trips: A Nature Center Case Study

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Nature Centers across the United States provide approximately 1500 outdoor learning sites for school-aged children and serve as teaching labs for subject matter across the curriculum. This case study is based on the Spring Creek Greenway, a nature center recently opened in Montgomery County, Texas. At the request of the nature center manager, the study seeks to answer the question, "Why would teachers attending field experience trips, assume they are taking the day off?" The study explores the role of teachers attending field-trips and seeks to define the most helpful role for a teacher, from the perspective of site-educators. The study involves qualitative reflections from fifteen site-educators based on their experiences with attending teachers. Three non-participant field-trip observations served to confirm the results of a pilot survey conducted by the nature center. The study found that while attending teachers valued the experience, were comfortable in the outdoors, and felt equipped to contribute, they were uncertain about the contribution they should make in order to maximize student learning. The study provides useful recommendations to teachers uncertain about their role and opens research opportunities to nature centers interested in tapping the potential of the attending teachers.

Keywords: education, field experience, field-trip, outdoor, role, successful, teacher

The nature center utilized in this study educated over 4500 students in its first nine months of operation. The center is comprised of 12 acres of land and a 5000 square foot indoor

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facility and museum. The center offers its facilities and nature trails to the public and educational field-trips to local schools. The staff consists of full-time and volunteer site-educators, many of whom are certified educators and master naturalists. The investigator frequently utilizes the nature center to enhance Career and Technical Education (CTE) programs for students from a local career academy. In a recent conversation with the manager of the nature center, a reference was made to a phenomenon related to visiting teachers. The manager had observed that during the initial field-trips offered by the center, teachers often failed to engage in the learning process and were noted, in the manager's estimation, "to be taking the day off." Coughlin (2010) on field- trip design summarized the field-trip as a valuable teaching tool strengthened by purposeful planning and evaluation by teachers and site-educators. She added that "while field-trips should be enjoyable, they must be educational, engaging, integrative, and worthwhile" (p. 210).

The manager of the center was interested in exploring the "day off" phenomenon, believing that the role of the classroom teacher is an integral part of the educational success of field-trips. In an effort to learn more about teacher's perceptions of their role, the nature center conducted a pilot survey of 114 visiting science teachers. The survey responses to questions related to defining teacher roles, illustrated in Table 1, revealed that visiting teachers valued the experience, were comfortable in the outdoors, and felt equipped to contribute, yet they reported uncertainty when identifying the contribution they should make to the field-trip experience in order to maximize student learning (See Table 1).

Following the pilot survey, a qualitative case study was designed based on the methods and recommendations of Yin (2011).

Three non-participant field-trip observations were performed over a period of two weeks. The field-trips involved groups of elementary, middle, and high school students and teachers. The trips were led by site-educators and provided an opportunity to observe teacher behavior and roles. The observations confirmed the pilot survey findings, revealing four distinct roles of teacher participation:

- the active teacher
- the active learner
- the logistics/behavior manager
- the attendant/observer

The active teacher was knowledgeable in the subject matter, related activities to prior learning, participated in active questioning, and promoted critical thinking skills. This teacher was often positioned in the vicinity of the site-educator emphasizing topic highlights.

The active learner was ready to participate with the students and eager for new learning experiences through hands-on activities. This teacher was often learning alongside the students and conveying an excitement for outdoor learning.

The logistics/behavior manager was prepared to guide and direct the students through the learning stations. Site-educators expressed their appreciation for such direction, unless it proved a distraction to the students and diminished the freedom of exploration and participation. The professional literature reported concerns about overly-controlling teachers and their effect on student participation in the outdoors. Stan (2010) described power and control as a behavior management tool utilized by educators which might affect the educational outcome of the outdoor field-trip. His research called for additional study on behavior management and the role of teachers in outdoor education; however, this case study did not validate his findings of overly-controlling teachers. Myers and Jones (2003) emphasized the role of teachers in monitoring and

management as important, but stressed the teachers should also monitor learning through active engagement.

The attendant/observer was defined by the key informant and manager of the nature center, as the teacher content with "taking the day off." Teachers in this role were observed retreating to the back of the group, catching up on electronic messages, and offering direction or correction to students only at the request of site-educators.

The survey and field-trip observations were validated by a network selection of 15 site-educators participating in guided approach interviews. The site-educators were interviewed over a period of three weeks and responded to fourteen interview questions based on their experience with students and teachers during outdoor field-trips. Field notes were utilized to record the responses and a summary of the findings led to conclusions by the site-educators that facilitating timely and effective communication could offer enrichment opportunities for all concerned. Questions guiding the study:

- What are the characteristics of observed roles?
- To what extent does the teacher's role impact student learning?
- What strategies can be identified to improve the visiting teacher's contribution?

Literature Review

Field Experience Defined

Field experience is well regarded as an inspiring and motivating opportunity, encouraging students "to become successful learners and develop as healthy, confident, enterprising and responsible citizens" (Learning and Teaching Scotland, 2010, p. 7). This case study places an emphasis on nature centers or educational experiences in an outdoor environment which are most often associated with scientific learning; however, field experiences may take students out of the school setting and into industries, universities, governmental agencies, arboretums, zoos, museums, and natural areas emphasizing technology, research, and career awareness (Collins, 2006, p. 31).

Field Experience and Curriculum Integration

Specific to the use of the nature center or the outdoor classroom, Tatarchuk and Eick (2011) suggest an inquiry-based purpose for utilizing such a facility. They note that students can integrate reading, processing skills, the application of conceptual knowledge, and writing skills with their scientific investigation. They also suggest that integration with nature creates an exciting classroom which peaks student curiosity and interest (p. 39). The term "novelty" is frequently used in the literature to refer to factors of a field-trip that create a basis for keeping students engaged, exploring, learning, and retaining information (Feasey and Bianchi, 2011, p. 16). Orion (1993) discussed novelty as a more short-term attraction or distraction that needs to be backed by concrete objectives in order to utilize "the field-trip as an integral part of the curriculum" and emphasized that pre-planning is crucial to "facilitate meaningful learning" (p. 326). The Texas Administrative Code (TAC) established the requirement for secondary science courses, grades 9-12, to include 40% hands-on laboratory investigations and field work using appropriate scientific inquiry (Texas Education Agency, TAC, 1996). In this case study, the nature center emphasized the use of its facility as a teaching lab and therefore, the role of an

engaged classroom teacher surfaced as vital to the educational success of the field experience.

Site-Educator Recommendations

Nabors, Edwards, and Murray (2009) compiled a survey of 60 site-educators from a variety of nationally recognized field experience sites. The site-educators responded to the following questions with comments and recommendations for the well-planned field-trip.

- How should teachers prepare students for a visit?
- What are the advantages to your organization when students come prepared?
- What do you expect students to do while visiting your site?
- What are problems or conflicts when students come unprepared?
- What do you think students gain as a result of visiting your site? (pp. 663-666)

A summary of their remarks recommended that teachers should visit the site in advance, then prepare the students for the logistics of the site and the educational concepts they would experience. The site-educators suggested that learning was facilitated when the students were familiar with the topic, had questions prepared, and were receptive to an informal assessment at the close of the visit to demonstrate understanding. They commented positively on groups of well-behaved students who were advised in advance of the expectations and complimented the student's respect for the site's resources. When students were not prepared -- instruction, behavior, interest, and safety issues became problems. Students who were prepared and showed respect for the safety rules and regulations enjoyed their experience. The prepared students built lasting memories, discovered learning can be fun, were involved in more hands-on learning, and made personal connections with peers, teachers and site-educators. In closing, they emphasized "Plan, Plan, Plan" (pp. 665-666).

Methods

An instrumental single case study outlined by Yin (2011) was chosen to provide insight into the "day off" phenomenon focusing on a single facility and the associated site-educators. The protocol involved defining the issue, establishing approval, being mindful of the guiding questions, and utilizing a field note format for reporting. The methods of investigation were selected from choices of evidence collection suggested by Yin (2011), including a pilot study, a literature review, field-trip observations, and the use of focused site-educator interviews.

Participants

The participants in the study:

- A pilot survey administered by the nature center to a convenience sample of teachers attending an in-service training day at the nature center facility
- Three non-participant observations selected from field-trips previously scheduled at the nature center provided a sub-population of students, teachers, chaperons, and site-educators
- Fifteen interviews of site-educators selected from a network sample of full-time employees and volunteers associated with the nature center

Approval of the case study was provided by the key informant and manager of the Spring Creek Greenway nature center under the auspices of Montgomery County, Texas, Precinct 3

The pilot survey. A pilot survey of 114 science teachers in two separate groups of 36 middle school and 78 elementary school teachers was conducted by the nature center prior to the start of the research effort. The pilot study identified areas of concern associated with teacher participation on field experience trips. The nature center pilot survey and results were utilized as an archival document to aid in launching the need for and significance of a well-defined role for the attending teacher.

The non-participant observations. Three non-participant observations of nature center field-trips led by site-educators were performed by the investigator. The three samples were selected as sub-populations of potential students, teachers and site-educators with one each from elementary, middle, and high school. The selection was made from available field-trip reservations in the time period allotted for investigation. The observations were recorded in hand written field-notes and revealed four distinct roles of attending teachers. Table 2 illustrates the characteristics of the non-participant observation groups and the roles observed.

Non-participant observation# 1 NPO 11.04.2011. Four lumbering yellow school buses arrive at the nature center and 170 third grade students pour out, clambering up the stairs to the center doors. The temperature had only recently risen to 50 degrees, from the morning low of 32 degrees, but the students were dressed for the weather and ready to go.

The students were pre-divided into six groups and accompanied by one or two teachers and two adult volunteers per group. They were met on the open air porch by six site-educators ready to begin rotations through a series of learning stations. Six stations were planned: Snakes, Museum Scavenger Hunt, Plant Decomposition, Lichens, Birding Trail, and Bird Migration. The groups began rotations of thirty students every twenty minutes to six sessions hosted by the site-educators.

Non-participant observation # 2 NPO 11.15.11. One hundred eighth grade students arrived in advance of a winter storm. Four site-educators had two hours to get outside, teach the Levels of Organization and Pond Habitat, and then rush back in before the storm. Shortly after arrival, the first chore was to divide the students into four groups. One site-educator remarked, "We should have told them to do this before they arrived." Apparently, there was a delay at the school before the students were able to depart, and the lead teacher commented that reorganizing her students was "making [her] brain hurt." Four teachers, four chaperones, and four site-educators launched the day's events.

Non-participant observation # 3 NPO 11.16.11. Sixteen high school students from a correctional facility arrived crammed into a white van with a guard/driver and a teacher. This was a new experience for twelve of the students; four had been to the nature center about three weeks prior. The students were quiet and reserved and took their seats in the classroom outfitted with chairs and tables prepared for a water quality lesson. The teacher and guard were also quiet and reserved. Three site-educators guided the students though a series of activities including water quality, healthy pond habitat, and a decomposition study. The visiting teacher volunteered insights during the visit.

The site-educator interviews. The fifteen site-educators were identified by the nature

center manager and key informant through network sampling. The participants were selected because they were actively engaged in the educational endeavors of the nature center. The site-educators consisted of nine women and six men. Of the fifteen participants; ten were degreed professionals, seven held teaching certificates, and twelve were Master Naturalists.

The participants shared a passion for education and the outdoors, drawing on their individual interests to define their contributions as site-educators.

Instrumentation

The non-participant observations. The non-participant observations provided unstructured observations as the investigator moved between groups to chronicle and define the roles of teachers. Hand-written field notes were utilized to record the findings and resulted in identifying four roles demonstrated by the visiting teachers. The findings were incorporated into the interview analysis as the site-educators reflected upon their experience.

Summary

Two themes emerged from the data: communication and attending teacher acknowledgement/recognition. The site-educators frequently commented about improving communication before, during, and after field-trips as a strategy to improve the attending teacher's contribution to student learning. Specific to communication before the field-trip, expectations and content should be conveyed. During the field-trip, teachers should be acknowledged, addressed, and encouraged to take an active role in student learning. Post field-trip options for review, student assessment, and curriculum integration should be provided, as well as a field-trip assessment form to reflect on the teacher's experience. The fifteen site-educators freely discussed their experience at the nature center and were anxious to contribute to improved student learning. Validation of the findings involved a triangulation of the pilot study, the field-trip observations, and the site-educator interviews. Four visiting teacher roles were identified as:

- The active teacher
- The active learner
- The logistics/behavior manager
- The observer/attendant

The visiting teacher roles observed and validated by the site-educators led to insightful recommendations. Based on responses from the site-educators, the combined role of Active Learner/Logistics Manager was deemed to be the most helpful contribution to field experience success. A resident author of the nature center summarized the findings in this way, "The most helpful teacher is one who is transparent to the student, who helps a student answer questions, who draws on the student's inquisitive nature and who provides hidden directions with a gentle guiding such that the students don't even notice, the teacher is teaching."

The investigator provided the nature center with a "Welcome Letter," summarizing the data and delineating suggestions for the most helpful teacher. In addition, a simple "teacher tag" was designed to acknowledge the teacher upon arrival and to designate the teacher as a contributing factor in maximizing student learning.

Work continues on the recommendation for web-site design. Communication between the Spring Creek Greenway staff and the educational community is expanding primarily due to

the efforts of the center's staff to invite teachers to the facility for professional development opportunities.

The staff is currently addressing new curriculum standards introduced as the State of Texas Assessments of Academic Readiness (STAAR) standards. The nature center continues to promote itself as a "teaching lab" for the educational community. In addition, a web-based, post-trip evaluation document is being considered to provide visiting teachers with an opportunity to contribute and provide feedback.

The site-educators recognized that teachers valued the experience, were comfortable in the outdoors, felt equipped to contribute to the learning experience, and were eager to build on that relationship with proper guidance. The site-educators also recognized that the "day-off" phenomenon could be traced to a lack of guidance and by incorporating the teacher, before, during, and after the experience the entire field-trip process would improve to the benefit and enjoyment of students and teachers.

Recommendations

Additional study is recommended to generalize the findings to other facilities and validate the reflections of the site-educators. The sample size associated with this single case study could be examined to determine its similarity and ease of replication at other nature centers. The sample size may be increased to include multiple nature centers, a larger number of field-trip observations, a larger sample size of site-educators, and additional "pre" and "post" trip teacher surveys. Field-trips in general are common to most educators and the "day off" phenomenon could be explored through additional survey or professional development topics, independent of the location.

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Table 1

Outdoor Learning Teacher Pilot Survey- Responses to Role Related Questions

Questions of 114 Science Teachers Semantic Differential Scale	Strongly Agree	1	2	3	4	5	Strongly Disagree	Inquiry Topic
I view my role as a teacher, visiting the nature center, as primarily student management and safety.	40% agree 28% neutral	22	23	32	21	15	32% disagree	Role
I am comfortable allowing students to explore and participate in the natural setting at their own comfort level with the confines of the activity.	65% agree 16% neutral	48	25	19	11	11	19% disagree	Role
I view the nature center experience as an opportunity to observe rather than perform teaching.	29% agree 26% neutral	25	8	29	23	27	45% disagree	Role

Note. Responses from the pilot survey regarding the inquiry topic "Role" indicate a fairly even distribution of responses leading to an assumption that teachers were conflicted or confused about the definition of their role while participating in field experience.

Table 2

Non-Participant Identifiers and Observed Roles

Non-Participant Identifiers	Group Descriptions	Observed Roles
# 1 NPO 11.04.11	170 third grade students	Active Learner
	8 teachers	Observer/attendant
	12 chaperons	Logistics/behavior manager
	6 site-educators	
# 2 NPO 11.15.11	100 eighth grade students	Active Teacher
	4 teachers	Active Learner
	4 chaperons	Observer/attendant
	4 site-educators	
#3 NPO 11.16.11	16 Tenth-Twelfth grade students	Observer/attendant
#3NPOB – JJ Teacher	1 teacher	Active Learner
	1chaperon	
	3 site-educators	

Note. Coded initials are utilized as identifiers to preserve confidentiality. Three field-trip observations were utilized to identify teacher roles during field-trip participation.