

Field-based Learning in Higher Education: Exploring the Benefits and Possibilities

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Abstract: Field-based learning in higher education is lacking both in practice at colleges and in research within the academic literature. This study aims to address these deficits by exploring the benefits and possibilities of executing field study in higher education across a variety of courses. We report the results of a qualitative research design that included the observation of five courses and an analysis of a field study database within the natural sciences, social sciences, and humanities. Approximately eight students per observed course were interviewed three times during their course to assess perceptions of the class, their peers and instructor, the field experiences, and their motivation throughout the course. In total, 130 individual interviews were conducted with 45 students and 721 field trips from 2015-2018 in the database were analyzed. Results revealed that field-based learning enhances the degree of relatedness students feel with their classmates and instructors, they have a greater degree of intrinsic motivation in the course, and these experiences facilitate learning in ways that may not be replicated in the traditional classroom. In addition, we created a typology of field-based learning, which includes eight different trips that could be employed in higher education courses. We also identified general strategies to improve the execution of these trips.

Keywords: field-based learning; experiential education; relatedness; motivation; self-determination theory

Introduction

Field trips are used as a common pedagogical tool in K-12 education; however, the use of this tool seems to dissipate by the time students reach college as many higher educational institutions fail to employ this type of experiential learning in their curricula (Behrendt & Franklin, 2014; DeGiacomo, 2002; DiConti, 2004; Kolb & Kolb, 2005). This trend is also mirrored in the field trip literature, where there is an abundance of research on field trips in elementary and secondary schools, but much less research in colleges and universities. The present study aims to address these deficits in the research and practice of field trips in higher education by exploring its benefits across multiple disciplines, identifying possibilities for a range of field experiences, and suggesting strategies for its successful execution.

Experiential Learning and Field-based Study

Experiential learning developed from the writings and philosophy of educational theorist, John Dewey. Dewey (1887) believed that “education must be conceived as a continuing reconstruction of experience; that the process and goal of education are one and the same thing” (p. 13). Guided by Dewey’s philosophy, Kolb and Kolb (2005) describe experiential learning as a continuous holistic

process that occurs as a result of experiencing the world first-hand and exploring it directly through the five senses. It can take several forms including internships, service-learning, cooperative education, undergraduate research experiences, study abroad, and of interest to the current paper, field trips (Moore, 2010).

Field trips can be defined as “any journey taken under the auspices of the school for educational purposes” (Sorrentino & Bell, 1970, p. 223). Much of the research on field trips agree that the intended educational outcomes of field trips focus on the following five areas: developing social and personal skills; developing observation and perception skills; adding relevance and meaning to learning; providing first-hand real-world experiences; and enhancing intrinsic motivation and interest in the subject (Behrendt & Franklin, 2014; Larsen, Walsh, Almond, & Myers, 2017; Tal & Morag, 2009).

When experiential learning is enhanced successfully through field trips, there are many beneficial outcomes, which are most often highlighted in the K-12 pedagogical literature. For example, in a study of sixth-grade students’ perceptions and recall of an environmental education field trip, Nadelson and Jordan (2012) found that students were able to transfer their knowledge during this event, and a month after the field trip they were able to recall the lessons associated with novel and hands-on activities that occurred during the trip. A study by Lai (1999) found that high school students who went on geography field trips were able to relate the theories they were learning in class to reality, consider different perspectives, see the relevance of geography in their lives, and gain social experiences and an increased sense of autonomy. Hutson, Cooper, and Talbert (2011) also found that field trips can have an impact on at-risk youths’ interests, pursuit of a certain academic subject, vocational choice, and future career.

Field-based Learning in Higher Education

The most recent reviews summarizing the benefits and best practices of conducting field trips focus on experiences in primary and second schools (Behrendt & Franklin, 2014; DeWitt & Storksdieck, 2008; Wilson, 2011). These reviews offer suggestions that can be applied to many field trips but their K-12 context and focus on issues that may be irrelevant for older students (e.g. behavior management and the use of chaperones) may send a subtle message that field trips are best suited to support primary and secondary education.

Yet educators who have incorporated field trips into their higher education courses have discovered that these experiences are just as beneficial to their students as they are for K-12 learners. For example, in a study of a nine-week intensive Introduction to Geology course where students went on field excursions almost every day (e.g., measuring water quality, identifying rocks), students gained a statistically significant improvement in geoscience concept knowledge (Elkins & Elkins, 2007). In a marketing class for tourism and hospitality students that included a hotel tour, results revealed that students had positive attitudes in regards to field trips citing that these experiences helped them understand the course material, helped them perform better on course assignments, and stimulated their interest in the subject matter among other benefits (Goh & Ritchie, 2011). In another example from a Construction Management course, students reported that their field trip to a construction site complemented the learning objectives and that the trip made the course material more relevant (Gunhan, 2015). Moreover, on end-of-semester course evaluations, students highlighted the site visit as a memorable and beneficial learning experience (Gunhan, 2015).

While this research is promising, the small amount of articles focusing on field study in higher education is still limited in several ways. Typically, this research consists of case studies focusing on one academic discipline (e.g., Elkins & Elkins, 2007; Healey & Jenkins, 2000; Marvell, 2008; Wright, 2000). Furthermore, the academic disciplines that are encompassed by this research have predominantly been within narrow specialties of the natural and social sciences, such as geology, geography, and sociology, with history being perhaps the sole discipline in the

humanities and arts where field study research has been conducted (Sundermann, 2000). Due to the subject specificity of the current field trip research, the existing literature tends to focus on how field trips can enhance the learning of the subject matter of that specific discipline with little discussion on how other disciplines or higher education as a whole can benefit from field trips.

Limiting higher education field-based learning research to specific disciplines may mislead instructors from other fields to think that field-based experiences are reserved only for these particular courses. It may also make it harder for educators teaching in disciplines that do not typically include field study to predict the potential benefits of field trips for their students. However, across the current field trip literature in both K-12 and higher education institutions, it appears that one common positive outcome is the social development that field trips can provide students (e.g., Behrendt & Franklin, 2014; Rennie, 2007; Tal & Morag, 2006). In fact, Larsen, Walsh, Almond, and Myers (2017) found that personal and social development was the outcome that students valued the most in field trips, above the more academically-oriented outcomes such as providing first-hand experience and developing observation and perception skills. However, the implications of social development and how this may positively impact other outcomes for students are only briefly discussed in the study; the authors state that student motivation may be dependent on instructor and peer relationships but do not go into detail about how this may play out.

Focusing on the relational benefits that students might glean from field-based learning, and emphasizing how those benefits can enhance student motivation and related outcomes, may be a viable way for instructors to see past disciplinary boundaries in order to encourage those who do not typically include field trips in their courses to consider the possibilities. Exploring some of the more global benefits that students can experience across a variety of field trips in a variety of disciplines might further encourage instructors to take advantage of these rich learning activities.

Field-based Learning, Relatedness, Motivation, and Self-Determination Theory

One theory that elaborates on the relationship between instructor/peer relationships and motivation is self-determination theory (SDT). SDT posits that human motivation is best fostered when the basic psychological needs for autonomy, competence, and relatedness are satisfied (Ryan & Deci, 2017). Autonomy refers to having a choice in one's own individual behaviors and feeling that those behaviors stem from individual volition rather than from external pressure or control. Competence refers to perceiving one's own behaviors or actions as effective and efficient. Relatedness refers to feeling a sense of belonging, closeness, and support from others.

When students feel that their basic psychological needs of autonomy, competence and relatedness are met, then they are more intrinsically motivated and are more likely to perform behaviors in the course out of genuine interest (Deci & Ryan, 2000). Research consistently shows that across all levels of education, students who are more intrinsically motivated experience higher quality learning outcomes such as greater perceived transfer of knowledge, higher degrees of creativity, and greater performance in the class (Black & Deci, 2000; Grolnick, Ryan, & Deci, 1991; Jang, Reeve, Ryan, & Kim, 2009; Niemiec & Ryan, 2009; Richards, Levesque-Bristol, Zissimopoulos, Wang, & Yu, 2018; Williams & Deci, 1996).

Field trips can offer the space and setting for autonomy, competence, and certainly, relatedness to be fostered. Therefore, it may be that any field trip across the disciplines can foster perceived relatedness, and perhaps other basic psychological needs, which can positively impact student motivation, leading to a host of beneficial academic outcomes (e.g., academic performance; Ryan & Deci, 2017).

Visualizing Field-based Learning Possibilities

As encouraging as it may be to know that field trips might improve perceived relatedness and student motivation, instructors who are intimidated by the thought of incorporating field-based learning into their course may still struggle to identify what exactly they could do in their class, as well as how to do it, in order to reap these benefits. For those who turn to the literature, they may read about excursions to science museums, outcrops, and zoos, but for a professor teaching philosophy, this may not be useful. In addition, instructors teaching more theoretical versus applied courses may struggle to identify how they might incorporate field experiences into their courses. Orion's (1993) research supports this notion suggesting that teachers may avoid field trips because they simply are unfamiliar with conducting them. Thus, there is a need to continue exploring the possibilities that higher education instructors can consider in terms of the types of experiences they might build into their course, as well as some suggestions for ensuring these experiences are executed effectively.

The Present Study

The current study seeks to answer the call for more work in field study in higher education by taking a wider-ranging approach rather than focusing on discipline-specific courses. Doing so may continue to allow college and university instructors to realize that field study is not just a K-12 pedagogical tool. Using SDT as a theoretical lens, we aim to explore the general outcomes of field trips in higher education from a broader standpoint. By exploring these outcomes, we hope to provide educators who teach in disciplines that do not typically incorporate field study into their courses an idea of the range of positive experiences they could offer for their students through field study. Furthermore, we seek to create a typology of field study experiences for instructors who struggle to imagine the possibilities that could exist in their course. We also provide a list of best practices for anyone wishing to reap the benefits of a successfully led field trip experience in a higher educational setting. Thus, we aim to answer the following research questions:

RQ1: What are the trans-disciplinary benefits of field study for higher education students?

RQ2: What types of field trips can be incorporated into higher education courses across multiple disciplines?

RQ3: What are the best practices and pitfalls when incorporating field trips in higher education courses?

Methodology

Overview

Multiple methods were employed at a small, private liberal arts college in the Southwest to address the three research questions. Given the unique structure of this particular institution, where students take one course at a time for at least three hours a day for eighteen days, instructors across all disciplines have more opportunities to incorporate field study into their courses, making it an ideal setting to conduct our research.

To answer RQ1, upon IRB approval, courses from multiple disciplines that included a variety of field study components were observed and students from each observed course were interviewed in order to identify the benefits of field study in higher education. To answer RQ2, a database maintained by the second author that tracks all the field trips that occur at the institution was

analyzed to create a typology of field trips. Finally, to answer RQ3, data from classroom observations, student interviews, the field study database, and a review of the field study literature were used to generate a list of evidence-based practices for conducting field trips.

Classroom Observations

Procedures. The first author (HF) selected five courses taught during the 2016-2017 academic year that featured a field study component for inclusion in the study. These courses spanned multiple disciplines across the natural sciences, social sciences, and humanities. All instructors who were approached granted permission to have their course observed and their students interviewed. Instructors were paid \$200 as an honorarium for their participation in the study. Instructors also received a summary of all aggregate data.

Approximately half the number of classes were observed, resulting in about nine classroom observations per course. Class observations occurred during field study and in-class experiences in order to get a better sense of the entire class experience. For more information on the courses that were observed, please see Table 1.

Course	Description		
Geology	<ul style="list-style-type: none"> ➤ Introductory course that fulfilled a lab requirement and thus was enrolled by students in various disciplines. ➤ Spent 8 days outside the classroom to practice geological field work, which included: <ul style="list-style-type: none"> ▪ A two-day, one-night trip in the mountains. The class spent the night in a cabin on college-owned property ▪ Two day trips exploring the local area ▪ A three-day, two-night camping trip in the mountains ▪ A day trip to a nature and science museum 		
Class size = 22		Number of observations = 10	Hours spent observing = 78.5
Political Science	<ul style="list-style-type: none"> ➤ Introductory course that occurred right before the 2016 Presidential Election and thus was enrolled by students in various disciplines. ➤ Students volunteered by themselves or with classmates to help with each of the following political campaigns: <ul style="list-style-type: none"> ▪ Presidential election ▪ State election ▪ Local election 		
Class size = 26		Number of observations = 9	Hours spent observing = 23
Environmental Studies	<ul style="list-style-type: none"> ➤ Introductory course that was required for environmental program majors and minors and thus was mostly enrolled by students interested in this discipline. ➤ Spent 2 days outside the classroom to talk with community members about sustainable development practices, which included: <ul style="list-style-type: none"> ▪ A visit to a net-zero energy house in town ▪ An on-campus food panel consisting of local young alumni who work to prevent food waste in town 		
Class size = 27		Number of observations = 7	Hours spent observing = 17

Philosophy	<ul style="list-style-type: none"> ➤ Introductory course that was cross-listed with feminist and gender studies and fulfilled the social inequality and writing requirements. The course was enrolled mostly by humanities or political science students. ➤ The class spent 5 days outside the classroom to immerse themselves in the material in the following location: <ul style="list-style-type: none"> ▪ An offsite campus in the mountains with limited access to internet or cell phone services 		
Class size = 25		Number of observations = 7	
		Hours spent observing = 40	
Comparative Literature	<ul style="list-style-type: none"> ➤ Introductory course that took place entirely off campus at the Newberry Library in Chicago. Thus, it was mostly enrolled by students from various disciplines who were interested in the opportunity to take a course in a different city. ➤ In addition to taking place entirely off-campus, the class spent 4 days exploring the city they were studying in, which included: <ul style="list-style-type: none"> ▪ A class dinner at the library director's apartment overlooking Lake Michigan ▪ A visit to the Art Institute of Chicago ▪ A visit to the Chicago History Museum ▪ A class dinner at a restaurant eating local fare 		
Class size = 12		Number of observations = 9	
		Hours spent observing = 24	
Total Observation Hours = 182.5			

HF's role was that of "focused participant observer" such that she refrained from interacting in the learning space as much as possible (Tracy, 2013). Students were informed of the study at the beginning of the course and knew they were being observed. HF sat in the back of the class and took notes on a laptop or clipboard depending on the location of class. She did not engage in class discussions, answer questions posed by the instructor, or complete course assignments. In some instances, during field study experiences, HF acted as a "play participant" wherein she shadowed students, ate with them, and engaged in recreational activities and small talk during down time (Tracy, 2013).

Measures. An observation protocol was created by drawing from previously established protocols. This includes Reeve et al.'s (2004) observation sheet, which has been used in projects focusing on SDT, Richmond, Gorham, and McCroskey's (1987) list of teacher immediacy behaviors, and part of the Classroom Culture subset of the Reformed Teaching Observation Protocol (RTOP; Sawada et al., 2002). This observation protocol was pilot tested in four class periods across two different courses that took place during the summer 2016 term. Based on this testing, slight modifications were made to the final protocol (see Appendix 1 for the observation protocol). Observation sheets were uploaded to Dedoose (SocioCultural Research Consultants, 2017), a web-based application that allows researchers to organize and analyze qualitative data.

Student Interviews

Procedures. Semi-structured interviews were conducted with approximately eight students per observed class. Each student was interviewed three times throughout their course. The first interview lasted approximately 30-45 minutes and students were paid \$25 for their participation. The second and third interview lasted approximately 25-30 minutes and students were paid \$15 per interview for their participation. In total, 130 individual interviews were conducted with 45 students. All students completed all three interviews with the exception of three students from the geology class. Two of those students completed only one interview and one student completed two

interviews.

Measures. The interview guide was developed by the first author, which was informed by existing literature and included questions that tracked student perceptions of the course, their peers and instructor, perceptions of the field experiences, and their motivation throughout the course (see Appendix 2 for interview guide). Questions were added each week based on what was observed during the class. HF was unable to access a sample of students to pilot test these questions before the start of the semester. However, four additional students from the geology class, which was the first class that was observed, were interviewed to test out the interview protocol. Some questions were dropped or refined following these initial interviews.

Interviews were audio-recorded, transcribed by a professional service that signed a non-disclosure agreement, and de-identified. Transcribed files were then uploaded to Dedoose. Descriptive statistics of participants can be found in Table 2.

Table 2. Descriptive Statistics of Student Interviewees

	Geology	Political Science	Environmental Studies	Philosophy	Comparative Literature	Total
Participants	13	9	8	8	7	45
Number of Interviews	34	27	24	24	21	130
Sex						
Male	6	5	5	5	2	23
Female	7	4	3	3	5	22
Year in School						
First Year	1	0	2	3	2	8
Sophomore	8	8	5	1	5	27
Junior	1	0	1	2	0	4
Senior	3	1	0	2	0	6
Interview Hours	19.47	13.65	11.12	13.03	10.94	68.21
Single-spaced Typed Pages	532	397	319	325	317	1890

Field Study Database

As part of his role as the Director of Field Study, the second author (DC) maintains a web-based application called Summit (Ideal-Logic, 2018), which tracks the field study experiences that instructors at the institution incorporate into their courses. Instructors who would like to include a

field trip in their course must submit details of their trip into the Summit database. Records from 2015-2018 were included in the study, which contained 721 field trips from 30 different academic departments.

Data Analysis

Given the extensive data collection procedures that occurred during the fall 2016 semester, it was not possible to code transcripts as they came in, thus they were coded after the fall semester. A research assistant (GM), who was a recent graduate of the college, helped with the coding process and thus acted as a local expert to further explain the local context and customs and answered questions that arose from the data (Cornish, Gillespie, & Zittoun, 2013).

For the interview data, HF and GM first conducted primary-cycle coding (Charmaz, 2006; Glaser & Strauss, 1967; Tracy, 2013) using half the data randomly selected from each observed course. They met once or twice a week to discuss the data. An Excel file was created that contained codes and definitions that emerged as important to participants and/or were related to the research questions. The constant comparative method (Charmaz, 2006) was also used to compare data that fit with each code, and/or to modify or add code definitions to fit new data. Memos were taken throughout this process to capture initial analyses of participants' words. They then refined the codes and their definitions and both coders coded all of the data in Dedoose. GM coded the data used to develop the code book while HF coded the remaining data. Codes were modified or added as needed during this second round of coding.

Next, HF conducted second-cycle coding (Tracy, 2013) in order to synthesize and group the first-level codes into second-level codes by identifying ways the codes were related (or unrelated) to one another and/or to ideas from theory or the pedagogy literature. During this phase, data were reassembled such that codes were systematically grouped under a hierarchical category that made conceptual sense (Charmaz, 2006; Tracy, 2013). For the observation data, the same processes occurred, however only HF coded that data.

For the field study database records, DC conducted a thematic analysis by reading and rereading the descriptions of each field trip entered into the system by faculty members (Corbin & Strauss, 1993; Strauss, 1987). As a check on coding validity, the typology of field trips generated by the thematic analysis was tested against a set of data gathered by HF in a separate study in which students described various field trips they attended in their courses. All trips from this dataset were successfully categorized using the typology.

Results

Analyses revealed that students experience several benefits from engaging in field study opportunities. Three themes emerged regarding the benefits students receive from these activities: 1) they feel a deeper sense of connection with their instructor and peers following field study experiences, 2) field study has a positive influence on their motivation, and 3) field study facilitated their learning. In addition, we identified a typology of field study trips that can occur across multiple higher education courses, as well as suggestions for executing field study in higher education settings.

Field Study Benefits

Field study is associated with more classroom connection. Students in all classes attributed their sense of closeness with their peers and instructor to the field study opportunities they embarked on. When asked why these experiences might lead to deeper connections, students often stated that there were

more opportunities for small talk and casual interactions, which allowed them to get to know each other better. Some examples include riding together in vans from outcrop to outcrop during the geology class, eating all meals together for a week during the philosophy class, or walking around town knocking on people's doors while campaigning during the political science class. As one sophomore from the political science class said, "That's another place where I get to know people more in the class, because, yeah, we're walking around canvassing together, and have conversations that aren't about just class. They're just about life in general." Many times, these experiences were in more intimate or casual settings. When compared to the rigidity of a classroom with desks and chairs, interacting in a place that is more comfortable encouraged students to loosen up a bit more and engage in more small talk. One senior philosophy student stated regarding his experience at the offsite campus:

Just because of the feel that [the offsite campus] has and everything here is a little more laid back and detached from other routines, and patterns, and thought processes that get cemented on campus... It does feel more low stakes and low pressure, and more conversational and colloquial.

Students also felt like they actually shared a novel experience with their classmates in these field study settings. They formed a more prominent memory together, rather than just sitting in a classroom. A sophomore in the geology class said:

It's amazing because throughout thirteen years of my life so far, we've been in this scheduled classroom setting. [Other students] and I were sitting on top of a rock today just looking at the view, like, "What!" The opportunity to do that, and go out into the field...That's just inspiring to me.

Field study positively affects motivation. Students also benefited from increased motivation because of field study experiences within their course. Some of those benefits followed directly from the increase in connection among students and instructors because of the bonding that occurred during their trips. Students had more opportunities to engage in small talk in these settings, which in a sense, warmed them up to engage in course-related conversations with their peers and instructor. As one sophomore in the political science class said:

I think you kind of understand where people are coming from, from a better angle. When people that I now know a little bit better talk, I'm a little more interested in what they have to say because I know them a little better.

Similarly, a junior in the philosophy class added, "When you're more comfortable with people, I think you feel more okay sharing your ideas."

Including experiences outside the traditional classroom can also break up the monotony of a course. Varying class activities is an important pedagogical tool that can increase student energy and engagement so inserting these various activities kept the course fresher. For example, a first-year in the philosophy course said before the class headed to the offsite campus:

Even though the material is engaging it's still kind of droning on in the same classroom for so long, for so much time. The fact that we're switching it up soon, made me really want to engage in the classroom...I mean today was our last real full class in the classroom.

In many cases these field study settings allowed students to have a deeper sense of autonomy, which improved their motivation. That is, students often had the choice to explore what they wanted to explore in these settings. For example, geology students could pick their own sample of rocks to identify and political science students could choose which campaign they wanted to volunteer for. One sophomore from the comparative literature class that took place at the Newberry Library in Chicago said:

Being in the library, you just have a lot of freedom and it's very independent, you can go in to any of the reading rooms and you can kind of really get in the zone when you're looking at your sources and researching.

For experiences that include more field work, students were able to do the work of the expert. One sophomore in the geology class said:

Just being able to use your hands and be a real geologist kind of, even if it's long. That's what it is being a geologist. That's what I think the best part is. You can actually do what people do with the knowledge you're getting.

They had a more authentic experience that allowed them to practice what they were learning and gave them a chance to discover things on their own, which enhanced their competence.

Field study facilitates learning. Students identified the ways in which field study experiences positively impacted their learning. For instance, these experiences were more memorable and thus were easier to recall later on. One student shared:

I think with the rock identification part of the quiz, you had to first look at the rock and identify the mineral and then say how the rock got there and how it was formed. I don't think if I hadn't been out in the field and I was making connections to where other rocks are in relativity to the rock I was looking at, and if [Professor] hadn't shown me the mountains that were right by me, and he said, 'This rock came from those mountains.' If I hadn't of had that visual and that understanding, then I think it would have been more difficult on that part of the test to do well. (Sophomore, geology)

Often times the novelty of the setting created a more vivid image in their minds and they were better able to draw from the lessons learned in those settings. Conversely, in standard classrooms, it can be easier for lessons to blend together.

In some cases, field study experiences permit students to see the “bigger picture,” which often allows them to make deeper connections within their course. In other words, students might have more “a-ha” moments outside the traditional classroom. As one sophomore in the geology class noted:

I guess in class you're just basically learning out of a textbook for the most part or you're just listening to your professor lecture you, but then in the field you can actually see the evidence that you can't really see in class, which I think is really cool. You can see why that rock turned into a metamorphic rock. You can see the fossils within the rock structure, which...shows that it was formed under water. That's cool. You can see more of the large-scale processes, like I said, out in the field more so than in the classroom.

These experiences allow them to get a better sense of how what they are learning is actually relevant.

For example, a sophomore in the environmental studies class that visited a resident's net-zero energy house said, "It's cool to see that what we talk about in class can be applied in the real world. Whether or not it's realistic for everyone, I don't know, but for at least that guy it was cool." It also provides another frame of reference for students, which can make it easier to refer to when back in the classroom. Because all students had the same memorable experience, it can often lead to richer discussions in class as they dissect those moments together and connect it to other things they have learned.

In other cases, these experiences allow them to grow by removing them from their college "bubble"; students enjoyed gaining a sense of place from these experiences as they gain exposure to settings and communities they may otherwise not have known. One senior in the geology class put it best by saying:

For me, a big takeaway that will be for this class, because I am never going to get down to science and the nitty-gritty of it just where I am at, but I am really interested in the sense of place that geology can cultivate and having more of an awareness of my surroundings and the state and I think that that is a big difference between looking at rocks and their little compartments and identifying them. Being in the field and doing the same thing, looking at the very small details and the minerals and the specifics of that, but it is also ... You are in this huge landscape and you are focusing on one small thing but you are also able to, just by being there, see and locate how it is part of this way bigger picture and this way bigger place. Just even getting to drive around and see more of the state, it makes me more excited to learn about this stuff than when I am in the lab and just like, "Ugh, what rock are you?!" It is more motivating and exciting to be like, "Okay, if I can understand this and comprehend this, it is going to tell me something about the place that I am in and can tell me more about the history and can give me a greater connection to this area.

Typology of Field Study in Higher Education

A typology of different field trips that have been used across multiple disciplines is presented below. It should be noted that while each field trip type varies in complexity, all of them require forethought and solid execution beyond what is described in the current paper; it is imperative that educators and instructors adapt what is outlined here to their own curriculum and students.

Collecting primary data/visiting primary sources. Being out in the field allows the students and instructors to be embedded *within* the material that they are learning about and to experience the messiness of data collection firsthand. The process of gathering data can sometimes lead to difficult and "unproductive" outcomes (e.g., if the data don't reveal anything significant). However, there is much learning to be had from these difficulties if instructors are open to the uncertainty.

Guided discovery of a site. In guided discovery, the professor brings students to a site that is familiar to the professor but new to the students and plans an activity that leads the students to uncover an intended outcome. In this environment, students must use tools or skills they learned beforehand to discover what is going on in the surrounding site. For example, geology students can visit a rock outcropping and use the skills they learned in class to identify the origin of those rocks. This technique is similar to collecting primary data/visiting primary sources described above in that it can be a more active way for students to practice research tools; however, in the case of guided discovery, the activity is conducted in a setting that has a relatively known and guaranteed outcome.

Backstage access. Backstage access is simply when the class has some sort of access to a site or place that the general public does not have, thus giving a special experience to the students (e.g.,

visiting a net-zero residence). This has the obvious benefits of gaining insights that are difficult to come by normally, but there is also a possibility for networking connections for students.

Show and tell. Show and tell involves the class and professor having access to a third-party expert or site where they might hear from the expert. For example, the class goes to a museum or a field site and they move around and hear from a curator or researcher on the subject at hand. This can be a useful technique when combined with the backstage access technique described above. However, instructors must be aware that it can also result in students sitting (or standing) for an uninspiring lecture from the third-party. Therefore, it is important for the instructor to do their research on or meet beforehand with the third-party expert and plan accordingly to ensure active engagement from their students.

Place-based immersion. Place-based immersion is when the class spends a significant amount of time in a place, investigating either a specific subject or an entire breadth of subjects tied to that place. In contrast to visiting one field site for specific analysis, place-based immersion encompasses being deeply involved with the place for an extended period of time and absorbing all the nuances of interconnectedness that exists in the area.

Community engagement. Community-engaged learning is a well-defined subgenre of field study (Driscoll, 2008). The professor and students work with a local partner over the span of the course or travel to a site to do time-bound projects or observations that students can then reflect on. Reciprocity and time commitment is important to this method to honor ethical concerns with community partners.

Retreats. Retreats are when the class gets away to a remote site for as little as a day or as much as a week to bond, to focus on the subject or a special project, and/or to write. There does not need to be a reason for the class visiting a certain site, although the retreat can be combined with the benefits of place-based immersion. The main objective is to garner the benefits of close proximity and focused time together and away.

Special events. Special events can be integrated into other methods, and involves the class traveling to a conference or special event (e.g., a speaker, a performance, etc.) that is pertinent to the course content or objectives.

General Strategies for Executing Field Trips

The following is by no means a comprehensive guide to best practices for executing field trips within higher education; however, evidence for these suggestions derives from data gathered via classroom observations, student interviews, and the field study database as well as a review of the field study literature. While design, learning outcomes, and facilitation all play an important role in the success of a trip, we would like to add five specific tips to those basic principles.

1. Beginning the trip with a full value contract (FVC) can be an incredibly powerful way to craft the learning culture in the class. This term, borrowed from outdoor education, is a contract written for the group, by the group, that ensures that each group member will be “fully valued” during the field experience (Curtis, 2008, June 22). The FVC can set expectations for appropriate and inappropriate behaviors during the trip, establish agreed-upon group norms, and provide a document that can be referred to should these group norms or behaviors be violated during the trip. Roberts (2016) suggests that “this not be a one-off event, but rather a living, breathing document that has a ‘seat at the table’ so to speak in every class” (p. 113). Having clear expectations builds safety and community, which are foundational to successful field outings (See Curtis, 2008, June 22 for a sample full value contract).

2. Logistics play an important role in the successfulness of a field trip. If a student is hot, cold, hungry, thirsty, looking into the sun, tired or lacking in any number of other basic human needs, they will not be able to absorb much of any knowledge on a field trip. Careful planning of the messy details around food is crucial for success. Being aware of and planning for students' food allergies and preferences, as well as ensuring that students have enough food to eat, all work to ensure a receptive environment. In addition, gauging weather forecasts and preparing students with proper clothing and gear is especially crucial for outdoor field trips.
3. Careful scheduling of the sequence of events can improve the outcomes of a field trip. In his primer on teaching in the outdoors, Roberts (2007, May 10) states, "Generally speaking, mornings are better for intellectual topics, afternoons are better for hands-on activities, and evenings are better for interpersonal discussions. Think AM-Brain, PM-Body, and Evening-Heart (para. 2)." This helpful framing can guide scheduling across many of the different pedagogical strategies listed previously. This also highlights the benefits of the often-overlooked evening time on reflection and group cohesion, a key part of any experiential strategy.
4. Balanced programming should also be taken into consideration when planning field trips. There is a consistent need to make good use of field trip time, and justifiably so. Field trips are resource-intensive so there is a tendency to feel the need to pack as much as possible into the trip. However, instructors run the risk of over-programming students to the point of saturation and an inability to take in any more information. The alternative risk is under-programming and boredom. Taking students into a setting where they are not busy enough has the effect of short-changing them on what could otherwise be a valuable and effective use of time. It can be challenging to balance these two opposites. Ideally, before the trip instructors who might have a tendency to over-program should identify activities that can be cut if students are saturated. Similarly, instructors who may have under-programmed their trip should have a set of additional activities, experiences, or assignments that they can implement if time allows. What is most important is that instructors continuously take the "pulse" of their class throughout the trip and make necessary adjustments to maximize the benefits of each outing.
5. Finally, instructors about to embark on a field trip should be prepared to engage in risk management. Mishandling an emergency incident, a minor illness, or mental health situation can be devastating to participants and to institutions. While a comprehensive look at risk management on field trips is beyond the scope of this paper, it is a critical piece. Field trip leaders should be familiar with resources available to them while they are away from campus. In addition to familiarity with emergency resources in the field location, leaders should be aware of and have contact information for campus security, administration, transportation, and mental health and sexual assault counselors before heading off on a field trip (Martin, Cashel, Wagstaff, & Breunig, 2006).

Discussion

This paper sought to identify global benefits of field study in higher education, the types of trips that can be included across a variety of higher education courses, and strategies for executing these trips. Data gathered from student interviews, classroom observations, and a field study database in *Journal of the Scholarship of Teaching and Learning*, Vol. 20, No. 1, April 2020.
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courses from the natural sciences, social sciences, and humanities helped answer these questions.

Results revealed that field study had an overall positive impact on students' relationships with their peers and professor, their motivation, and their learning. SDT helps explain how field study enhances these positive outcomes. Field trips undoubtedly provide ideal environments for fostering the basic psychological needs of autonomy, competence, and especially relatedness. Across all classes, students stated that their field trips contributed to the enhanced closeness they felt with their classmates and professor. Through both the purposeful planned activities and the more mundane shared interactions, like eating meals together and sitting on a bus, students cited being able to make connections with one another and develop deeper senses of relatedness, which was largely due to the increased opportunities to engage in small talk with their peers and instructor.

A study by Murphy (2001), which explored the social interactions of backpackers, supports the idea that mundane shared experiences may aid in building deeper connections. Her study found that backpackers were more likely to build connections and have social interactions with other backpackers while eating or hanging out in hostel common rooms rather than doing planned activities. This suggests that the mere act of traveling and being in a new place with other people helps deepen relationships and may be the same effect that is helping to build relatedness between students during field trips. However, this is not to discount the effect that planned activities could also have in building relatedness. A study by Reissman, Aron, and Bergen (1993) found that in married couples, only spending time together was not enough to increase marital satisfaction, but it was the act of doing "exciting" and novel activities together that built the most marital satisfaction. This suggests that doing novel activities with other people, like engaging in planned activities on field trips, could enhance relatedness and relationship satisfaction. These studies support the notion that field trips, through shared novel activities as well as mundane interactions, can provide the ideal environment for relatedness to be fostered.

In an environment of fostered relatedness, positive academic outcomes, such as intrinsic motivation and learning, can be enhanced. Once students felt a deeper sense of connection and comfort with their peers, they were more willing to engage in the course. This supports the findings by Trenshaw, Revelo, Earl, & Herman (2016), which identified relatedness as the most salient of the three basic needs in promoting intrinsic motivation to learn in computer engineering students.

Field study experiences further promote increased motivation by satisfying the other basic psychological needs of autonomy and competence (Ryan & Deci, 2017). Students feel more autonomous when they are allowed to explore aspects of their surroundings that they deem most interesting (e.g., identifying the rocks they want to look at). Students might also feel more competent when they can engage in behaviors that practitioners of the discipline engage in. Beyond the satisfaction of basic needs, field trips also helped student engagement by including more varied instructional practices to keep the course fresh, which is an advised teaching practice, particularly within K-12 education (Ripp, 2016).

The higher levels of motivation that students gain because of these field trips may certainly increase their academic performance (Ryan & Deci, 2017), but other features of the experience seem to also impact learning. For example, the more vivid and novel settings help moments in class become more memorable, to which students can draw on those experiences later to help with their recall of information, a phenomenon supported by research on everyday memory conducted by a team of neuroscientists (Takeuchi et al., 2016). These experiences also allowed students to see the bigger picture and make deeper connections among the material they were learning in class, thus promoting the relevance of the course material, which is a crucial feature in enhancing student motivation and learning (Keller, 1987). Moreover, regardless of the material that students are learning about, in field trip experiences, they also gain a deeper sense of place and learn more about the community they are studying in.

Finally, in order to help instructors visualize the possibilities for field-based experiences in their courses, we identified a typology of field study experiences that can be employed in any college course. These include: a) collecting primary data/visiting primary sources; b) guided discovery of a site; c) back-stage access; d) show and tell; e) place-based immersion; f) community engagement; g) retreats; and h) special events. This typology hopefully provides faculty, especially those who teach in fields that do not typically include field study, with ideas they can incorporate into their courses so that students can reap the relational, motivational and learning benefits associated with these trips. They can also rely on some of the suggestions we provided to ensure their field study experiences go smoothly, such as including a full value contract, paying attention to logistics (e.g., making sure basic human needs are met), carefully scheduling events, being mindful of over- or under-programming, and engaging in risk management.

Limitations and Future Directions

There were a few limitations to this study that warrant discussion. First, the courses that were included in this study had varying numbers of days that were spent on field trips. As a result, some of the trips had a greater impact on students than others, especially when the quantity or duration of trips was higher, like in the geology class. Therefore, perhaps the experiences of someone who spent 8 days in the field cannot be compared to the experiences of someone who spent 2 days in the field. Despite this, however, we were still able to identify common themes shared by all students across classes, regardless of how many trips they went on.

Another limitation is that the extensive range of field trips were made possible because the institution where this research took place has the funds and unique course format that allows for more field study opportunities. Despite having a guide for how to execute certain field trips, instructors at other universities may still struggle with the logistics of incorporating these trips into the class due to funding or scheduling issues. The biggest barrier, then, for carrying out field trips may be less about knowing which types of trips they might include or how to execute these trips and more about a lack of resources and feasibility of including these trips into a course that exists in a more traditional format. Perhaps a first step would be to convince institutions of higher education of the value of these experiences in order to encourage the allocation of funds for such events (Goh & Ritchie, 2011). Students might also be advised when signing up for classes to arrange their schedule in such a way that will allow them to register for a class that includes more field-based learning. Similarly, instructors teaching three-hour long courses, which is typical of night classes, might take advantage of the extended meeting time to incorporate trips into their course.

Due to the qualitative nature of this research, generalizations cannot be made to the larger population. Therefore, future research could quantitatively test whether courses that include field study are associated with more benefits compared to more traditional courses. Additional research could explore the benefits of each type of field trip. Moreover, strategies for overcoming the barriers to implementing these trips within more traditional course structures (e.g., semester-based formats) in higher education could also be identified. One potential research project could include a cost-benefit analysis of the incorporation of field trips into a course. Given that field trips can be resource intensive, it would be useful to gather evidence as to whether the payoff in terms of positive student outcomes is worth the cost.

Acknowledgements

This work was supported by the Andrew W. Mellon Foundation's Grant to Strengthen Innovation in Engaged Teaching and Learning [grant number 31300614]. The authors would also like to thank

Georgina Mburu for her valuable contributions to the project.

Appendix

Appendix 1. Observation Protocol

1. Date
2. Observation #
3. Class
4. Instructor
5. Class Description: Where class took place; if outside of class describe what they were doing; number of students/mentors/instructors
6. Interpersonal Interactions
 - a. *Instructors*: how they relate to students; instructors let students get to know them; expresses caring; patient; enjoys time with students; invests time/attention; knows students' names and interests; expresses affection; listens carefully; is physically close with students; is energetic/passionate; makes good eye contact
 - b. *Students*: high proportion of student talk, especially between and among students; climate of respect; helped each other during class; students were friendly towards each other; students having fun together; knew each other's names; talked with a variety of peers (not just the same few); had positive interactions with instructors; weren't afraid to talk to instructors during or after class
7. Relevance Enhancing: Instructor promotes relevance/value/importance of topic/activity; activities are related to students' personal lives, future classes, careers, etc.
8. Motivation & Engagement
 - a. *Instructors*: encourages active participation; encourages student conjectures; teacher acted as resource to support students; fosters student interaction/contributions rather than instructors lecturing; tries to get students excited about class; inspires students to try hard
 - b. *Students*: exhibits signs they are enjoying the class; are interested/having fun; have focused attention; apply effort; talk/ask questions/discuss
9. Uncategorized comments
10. Other (not related to major hypotheses/RQs)

Appendix 2. Interview Guide

1. Why are you taking this course?
2. What do you think of the class so far? What are things you like about it? What are things you don't like about it? Would you change anything about the course so far? How does it compare to other classes you've taken so far?
3. Do you like your classmates? How close do you feel with them? Do you feel closer to people in this class compared to other similar classes you've taken? Why?
4. Have any activities encouraged you to get closer with your classmates? How?
5. Do you like your instructor? Are you getting to know him/her well? Do you think you are closer to him/her than other professors you've had? Why or why not?
6. Compare the days you spent in the classroom versus the days you spent in the field...
 - a. Which experience do you like better? Why?

- b. Which environment do you feel more focused/engaged in? Why?
 - c. Which environment do you feel like you're learning more in? Why?
- 7. In general, do you like going on field trips with your class? What about in this class? Do you like traveling with your classmates? Your instructors? What are the pros and cons of field trips?
- 8. If you could plan a class period, what would you do?
- 9. How relevant do you think the course material is? Do you think you will use the information you learn in this class in your career, other classes, or your personal life?
- 10. Are there elements of this course that help/hinder your motivation to learn/work hard in the class?

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