**Teaching Outside the Classroom
Originally written in 2010 b*y Lily Claiborne, John Morrell, Joe Bandy, and Derek Bruff***

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Teaching and learning experiences that take place outside of the confines of the classroom walls have a range of benefits for both students and instructors. When students are asked to put into practice “in the real world” what they have theorized about from behind a desk, the result is a student-centric learning experience that enhances learning and fosters personal and social development (Larsen, Walsh, Almond, & Myers, 2017). Further, students that engage in learning experiences outside of the classroom report having higher levels of motivation, recall the course material more vividly, and have improved academic performance in the class (Takeuchi et al., 2016; Ryan and Deci, 2017). Moreover, field experiences early in a student’s career can be formative and can inspire students to continue in a field (e.g., Hutson, Cooper, & Talbert, 2011).

Learning experiences outside the classroom are forms of **experiential learning** (Dewey, 1897). These experiences are rooted in the simple principle that “experience is the best teacher.” Under this framework, learning outside of the classroom is an active process, wherein students encounter authentic problems, construct novel hypotheses, test for real solutions, and interact with others to make sense of the world around them. When we do this, we encounter the world as a whole and are forced to engage multiple modalities, no matter which pair of disciplinary “lenses” we intended to wear. Because experiential learning is inherently interdisciplinary, scientists and humanists alike would do well to consider the ways in which other disciplines might enrich their own disciplinary approach to their field.

There are many ways to make learning extend outside the classroom:

* Field Trips and Field-Based Learning
* Study Abroad
* General Strategies for Successful Field Trip and Field-based Learning Experiences
* Technology Outside (and Inside) the Classroom
* Assessment of Field Experiences
* Resources for research on Experiential Learning

**Field Trips and Field-Based Learning**

Field trips may be defined as “any journey taken under the auspices of the school for educational purposes” (Sorrentino & Bell, 1970, p. 223). Along with the engagement of concepts that is required by these experiences, the student bonding that occurs on field trips enhances the learning experience and creates a learning community as students continue onward in a discipline. Teaching in the field also gives instructors the opportunity to get to know their students in greater depth in terms of how the students see the world differently than the instructor. This insight into student world-views can help the instructor to better communicate the concepts of the course.

Field trips can take a variety of forms that meet a diverse set of needs and can enhance deep, active learning. The intended educational outcomes of field trips focus on the following five areas (Behrendt & Franklin, 2014; Larsen et al., 2017; Tal & Morag, 2009):

1. Developing social and personal skills
2. Developing observation and perception skills
3. Adding relevance and meaning to learning
4. Providing first-hand real-world experiences
5. Enhancing intrinsic motivation and interest in the subject

Field trips are a common component of many K-12 classrooms, with a wealth of reviews in the primary literature summarizing their benefits and best practices (e.g., Behrendt & Franklin, 2014; DeWitt & Storksdieck, 2008; Wilson, 2011). In the college classroom, field trips (or **field-based learning**) can be an effective tool that satisfies many of the above goals. For some disciplines (e.g., geology, ecology) it is relatively easy to imagine what a field-based learning experience can look like, whereas for other disciplines (e.g., philosophy, English), it may not be immediately obvious. To help instructors begin to imagine the possibilities that could exist in their courses, Fedesco, Cavin and Henares (in press) recently used a database of 721 field trips from 2015-2018 at a small, private, liberal arts college in the Southwest to create a typology of field study experiences in higher education. The authors identified the following types of field-based learning experiences:

* ***Collecting primary data/visiting primary sources*** *–* Students and instructors gather data in a novel setting, with open-ended and unpredictable learning outcomes for students depending on the results of that data. Being immersed within the subject material allows for deep learning for students, as they experience the authenticity of data collection and the process of interpreting that data. Instructors should be flexible and prepared to navigate difficult and/or unproductive outcomes – such as if the data don’t reveal anything significant (or present a result that is counter to the instructor’s initial predictions). However, these experiences have the highest potential for learning for students, as they are in a sense creating new knowledge.
* ***Guided discovery of a site*** – The class visits a site that is familiar to the instructor but new to the students and the instructor plans an activity that leads the students to uncover an intended outcome. Students should use the skills and concepts they learned in an earlier portion of the course and apply them in a novel setting to help guide learning. Instructors should consider how their materials and questions will help students develop higher-order skills, such as investigating, questioning, and developing critical thinking skills. Because they are time-consuming and require a significant investment from the instructor, they are best used to teach conceptually difficult or especially important course material. For more information on preparing and facilitating guided discovery problems in your classroom, see the [guide on the National Association of Geoscience Teachers website](https://serc.carleton.edu/NAGTWorkshops/teaching_methods/guided_discovery/how.html).
* ***Backstage access*** – The class is granted access to a site or a place that the general public does not have access to, thus giving a unique experience to the students that allows for insights and experiences that are difficult to come by normally. For an on-campus example, a class might visit a University research lab or center that is available only to students registered in a course (such as the [Breazeale Nuclear Reactor at Penn State](https://www.rsec.psu.edu/Penn_State_Breazeale_Reactor.aspx)). For off-campus examples, students might visit a net-zero residence, tour behind the scenes of a government building, or meet with employees of a local company. These experiences may require an initial contact with a community partner or a prior-established relationship; however, the learning outcomes for students are enormous, and some companies may be willing to work with classes as the experience offers a networking opportunity for both students and potential employers.
* ***Show and tell*** – The class is given access to a third-party expert or a site where they might hear from the expert, such as in the collections of a museum with a curator. Like backstage access, this represents an opportunity for students to have an experience that is not available to the general public and can thus result in deep learning and foster meaningful connections for students. This also helps the instructor cover subject material with which they may not be intimately knowledgeable. However, instructors should have a role in planning with the third-party expert to ensure active engagement from their students; otherwise, you run the risk of students sitting or standing for long periods of time for an uninspiring lecture.
* ***Place-based immersion*** – 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. Places have both natural and cultural histories, which therefore lend themselves to examination by all disciplines. Field experiences and research are at the core of many of the natural and social sciences. In the humanities, field experiences might be working in archives, collecting oral histories, performing one’s art for a public audience, but it could also include visiting important historical sites and place-based experiences including using places for inspiration.
* ***Community engagement*** – Professors and students engage in a partnership with a local organization or institution over the span of the course or travel to a site to do time-bound projects, often with a significant investment from the students. These projects, typically designed by both faculty and community partners, allow for students to learn in highly effective ways while helping a community address its needs. In all of these experiences, student growth can be extensive, whether it is through improved critical thinking and problem-solving skills, greater personal efficacy and leadership development, or enhanced social responsibility and career opportunities. For more information on the benefits and methods of these pedagogies, as well as step-by-step guides to successful service learning courses, please visit the CFT's [Service Learning and Community Engagement teaching guide](http://wp0.vanderbilt.edu/cft/teaching-guides/teaching-through-community-engagement/) and the [Community Engaged Teaching Step by Step teaching guide](https://cft.vanderbilt.edu/cft/guides-sub-pages/community-engaged-teaching-step-by-step/).
* ***Retreats*** – 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. The retreat can be combined with the benefits of place-based immersion, although there need not be a reason for the class visiting a specific site. The main objective of a retreat is to garner the benefits of students spending focused time in close proximity together and away from the hustle and bustle of normal college life. Some outdoor learning experiences, due to their length, are by definition retreats: for example, geologic field trips; wilderness literature backpacking trips; and study abroad experiences.
* ***Special Events*** – The class travels to a conference or a special event (e.g., a speaker on campus, a film, a performance, etc.) that is pertinent to the course content or objectives. The instructor has little control over what is said during the event and thus should feel comfortable giving up the reins for this experience. A degree of flexibility for the instructor and maturity on the students’ parts will help these events fit within the framework of the class schedule. Instructors should be prepared to give a pre-event lesson and a post-event lesson to help ensure students meet the intended learning outcomes.

**Benefits for Students Who Participate in These Experiences Include:**

* knowledge transfer and knowledge recall (Nadelson & Jordan, 2012)
* increased relevance, improved perspective-taking, and increased autonomy (Lai, 1999)
* increased interest in the subject and influence on one’s college major and future career (Hutson et al., 2011)
* improvement in concept knowledge (Elkins & Elkins, 2007)
* improvements in understanding course content, performance on course assignments, and interest in the subject (Goh & Ritchie, 2011).
* increased relatedness with instructors and peers, competence, autonomy, and intrinsic motivation in the course (Fedesco et al., in press)

**Key Factors That Promote Successful Experiences Include:**

* See the section below titled “General Strategies for Successful Field Trip and Field-based Learning Experiences”

**Additional Resources:**

* National Association for Geoscience Teachers (NAGT) guides for [Teaching in the Field](https://nagt.org/nagt/teaching_resources/field/index.html) and [Safety in the Field](https://nagt.org/nagt/teaching_resources/field/safety/index.html)
* Special Issue of Journal of Geoscience Education on [Teaching in the Field](http://nagt.org/nagt/jge/abstracts/mar06.html)
* [Searchable collection of references and resources on field-based learning](http://nagt.org/research_on_learning/synthesis/field_resources.html) *from the Synthesis of Research on Learning in the Geosciences by the* [Science Education Resource Center](http://serc.carleton.edu/index.html)
* “[Field Notes](http://serc.carleton.edu/files/NAGTWorkshops/mineralogy/activities/Mogk_Field_Revised_JBF.pdf)” by David W. Mogk, Dept. of Earth Sciences, Montana State University: Research based methods for successful field trips, including specific examples for a geoscience course
* [The Out-of-Classroom Experience](http://www.4faculty.org/includes/digdeeper/Outside/outside.htm) by Dave Douglass:  A comprehensive article on things to consider when “dreaming-up, organizing, planning and leading field trips and other learning activities that will take place outside of the traditional classroom setting”
* [Vanderbilt Release form for student field trips](http://wp0.vanderbilt.edu/cft/wp-content/uploads/sites/59/Vandberilt-student-travel-form.pdf)

**Study Abroad**

*These notes were adapted from: Gardinier, Lori, and Dawn Colquitt-Anderson. “Learning Abroad.” in New Directions for Teaching and Learning.  no. 124, Winter 2010.*

There are several models for study-abroad programs. In some, participants enroll in foreign universities as visiting, non-matriculated students. In other programs, the sending institution retains more control over the curriculum, duration, faculty selection, and experience. Increasingly, schools are internationalizing their curriculum by offering short-term, faculty-led, study abroad programs. Vanderbilt's [Global Education Office](https://wp0.vanderbilt.edu/geo/) administers many programs available for students to study abroad.

**Benefits for Students Who Participate in These Programs Include:**

* increase in student willingness to take courses outside of their major
* increased confidence to travel abroad in longer-term programs
* increased interest in interdisciplinary studies
* increased skills of inter-cultural communication
* greater international or comparative understandings of social issues
* a more sophisticated understanding of global social change
* greater understanding of inequalities and differences in the world system

**Key Factors That Promote Successful Programs Include:**

* academic rigor
* use of mixed teaching methods
* facilitated reflection synthesizing experiences with academic content

According to Lori Gardinier and Dawn Colquitt-Anderson, “There is no formula for the percentage of time that should be spent in formal class time, seeing cultural/historical sites and events, doing field work, or engaging in peer-to-peer cultural exchange. Regardless of the mix, students should arrive at the destination with a grounding in both the academic and cultural context through a combination of pre-departure lectures, guided research, online discussions, readings, and cultural events relevant to the trip.” (26)

In study abroad situations, faculty leaders assume a number of roles that extend beyond the classroom, and setting appropriate boundaries becomes critical. It can be helpful to set specific parameters for how, when, and where you will relate to students during the program.

It is important to identify risks and liability. Directors must be prepared for expected emergencies involving lost or stolen property, illnesses, and so on, as well as unexpected emergencies involving natural and manmade disasters.

**Additional Resources:**

* [The Institute of International Education](http://www.iie.org)
Founded in 1919, the Institute of International Education (IIE) is a private nonprofit leader in the international exchange of people and ideas. In collaboration with governments, foundations and other sponsors, IIE creates programs of study and training for students, educators and professionals from all sectors. These programs include the flagship Fulbright Program and Gilman Scholarships administered for the U.S. Department of State. IIE also conducts policy research, provides resources on international exchange opportunities and offers support to scholars in danger.
* [The National Association of International Educators](http://www.nafsa.org/) (NAFSA)
NAFSA and its members believe that international education and exchange—connecting students, scholars, educators, and citizens across borders—is fundamental to establishing mutual understanding among nations, preparing the next generation with vital cross-cultural and global skills, and creating the conditions for a more peaceful world.
* [Journal of Studies in International Education](http://journals.sagepub.com/home/jsia)
The *Journal of Studies in International Education* (JSI) is a forum for higher education administrators, educators, researchers and policy makers interested in research, reviews, and case studies on all facets of the internationalization of higher education. Each issue brings together the concepts, strategies, and approaches of internationalization, the internationalization of the curriculum, and issues surrounding international students and cross-border delivery of education.

**General Strategies for Successful Field Trip and Field-based Learning Experiences**

**Tips and Techniques:**

*These tips were provided by VU faculty experienced in taking students on field trips.*

* Set up the field trip as a research project that includes data collection.
* Conduct a theoretical examination of the issue in class long before going into the field. Students should have a sense of what the field trip is going to be about before they go.
* At least two weeks before heading into the field, develop the rudiments of basic hypotheses. At this point the instructor should give details about the field site so that students know what to expect.
* In the field, focus on the things that you’ve agreed to focus on and let the other stuff be icing on the cake.
* Take a backpack full of extra warm/dry clothes and snacks to pass out to students as the need arises.
* If for a large class, prepare TAs well to manage smaller groups of the class.
* Prepare students for practicalities including appropriate attire, expectations for physical exertion, anticipated rest stops, supplies and materials they should bring.

Additionally, Fedesco et al. (in press) has identified five specific tips to help educators have a successful field-based learning experience:

1. **Begin the trip with a full value contract (FVC).** The FVC is a document written for the group, by the group, and establishes agreed upon expectations on what is appropriate or inappropriate behavior on the trip. This document, which can be updated as needed, can be referred to throughout the trip, and provides a sense of safety and community for the class.
2. **Logistics play an important role in the success of a field trip.** If students are lacking in basic human needs (e.g., uncomfortable temperatures, hungry/thirsty, standing in direct sunlight, exhaustion), they will be less likely to learn. Check the weather forecast and have students plan accordingly. Make sure you have plenty of food to eat throughout the day, and be mindful of food allergies and preferences to ensure a smooth experience.
3. **Carefully consider the sequence of events during a field trip.** Outdoor education expert Jay Roberts (2016) recommends that mornings are better for intellectual topics, afternoons are better for hands-on activities, and evenings are best for reflection and interpersonal discussions.
4. **Balanced programming should be taken into consideration when planning field trips.** Instructors should avoid over- or under-programming trips, which could lead to either information saturation or boredom. Instructors should continuously take the pulse of the experience so if necessary, they can implement their contingency plan by either cutting back on some activities or incorporating more experiences or assignments into the trip.
5. **Instructors about to embark on a field trip should be prepared to engage in risk management behavior.** Before leaving for a trip, instructors should be familiar with and have contact information for emergency resources in the field location, campus security, administration, transportation, and mental health and sexual assault counselors.

**Technology Outside (and Inside) the Classroom**

Advances in technology make it relatively easy for students to bring digital technology with them when they leave the classroom, or for instructors to bring the outdoor learning environment into the classroom. In the field, students can use mobile devices—including ones they already own—to engage in learning activities. In the classroom, instructors can use drone footage, mobile apps, and programs like Google Earth to bring outdoor environments inside, thus bringing far-away or inaccessible outdoor phenomena to all students. Below are some examples to help you start thinking about how you might use technology outside (and inside!) your classroom.

**Location-Specific Content**

With the right apps, students can access content that is tied to a particular location and only available when students visit that location.

* Spanish instructors at the University of New Mexico use an iPhone app from the [Augmented Reality and Interactive Storytelling (ARIS)](http://arisgames.org/) project to send students on [a fictional murder mystery through the Los Griegos neighborhood](http://www.mentira.org/overview) in Albuquerque that develops and tests their language skills. Students receive location-specific clues to the mystery by typing their location into the app.
* The [Iowa City UNESCO City of Literature iPhone app](https://www.writinguniversity.org/blog-entry/new-iphone-app-iowa-city-unesco-city-of-literature) provides text, audio, and video content about Iowa City authors based on the user’s GPS-determined location. Instructors at the University of Iowa plan to have students use this app to learn more about Iowa City authors and their connections to particular local environments.
* CFT director Derek Bruff incorporated QR codes in an [end-of-semester “crypto hunt”](http://derekbruff.org/?p=610) in his first-year seminar on cryptography. Students cracked codes and ciphers that led them to particular locations on campus featuring QR codes, two-dimensional bar codes that students scanned with their smart phones to receive additional clues in the hunt.
* Instructors can also have students *create* location-specific content. For example, students at the University of Northern Colorado created a scavenger hunt designed to teach other students about local water rights using the ARIS platform.

**Data Collection and Sharing**

Mobile devices have a variety of mechanisms for collecting and sharing data. Students can use these devices to generate location-specific content whether on a field trip or on their own.

* Shaul Kelner, associate professor of sociology and Jewish studies at Vanderbilt, taught a course titled “Tourism, Culture, and Place” in the spring 2011 semester. Students in the course visited different tourist sites around Nashville, captured photos of these locations using their cell phones while on-site, and then blogged about their visits and their photos later.
* Margaret Rubega, associate professor of ecology and evolutionary biology at the University of Connecticut, requires students in her ornithology course to use the social media service Twitter [to “tweet” about the birds they see](http://www.today.uconn.edu/?p=23337) as they go about their lives–what birds they see, where they see them, and any connections to course content that occur to the students. They tag their tweets with the hashtag [#BirdClass](http://twitter.com/#%21/search/%23birdclass) to make it easy for all involved to find and read each other’s tweets.
* Lawrence University students in an introduction to environmental science course [collect geotagged water quality data during field trips](https://er.educause.edu/articles/2011/3/the-educational-potential-of-mobile-computing-in-the-field) using GPS devices and tablet PCs. Students pool their data, then analyze it using geospatial visualization software while still in the field. Many such specialized data collection and analysis tools are developing mobile apps that run on iPhones and other smart phones.

If you’re interested in using technology in the field in your courses, please contact the CFT’s educational technologist [Rhett McDaniel](http://www.vanderbilt.edu/cft/contact.php?who=mcdaniel) for help getting started.

**Assessment of Field Experiences**

* [Rubrics](http://www.aacu.org/value/rubrics/index.cfm) developed by the Associate of American Colleges & Universities (AAC&U) including some on civic knowledge and engagement, teamwork, problem solving, integrative and applied learning.
* Reflection papers
* Lab reports
* Suggestions for [assessment of field courses by the National Association of Geoscience Teachers](http://serc.carleton.edu/NAGTWorkshops/assess/types.html)

**Additional Resources for Research on Experiential Learning**

* [Experiential Learning & Experiential Education](https://www.islandhoppinginthephilippines.com/team-building-travel-asia/Experiential%20Learning%20%26%20Experiential%20Education%20%20Philosophy%2C%20theory%2C%20practice%20%26%20resources.htm): Philosophy, theory, practice & resources (by James Neil, University of Canberra)
* [National Society for Experiential Education](http://www.nsee.org/) (NSEE)

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