

INTRODUCTION

Pedagogical Approach

Research has shown that students learn best in an active, experiential environment—that is, learning through experience (Kolb 1984). Experiential learning is active, reflective, and inquiry-based. Archaeological education is no different (Bender and Smith 2000). Ideally, experiential learning within archaeology consists of real-world problem-solving such as field and laboratory work, community service learning, and undergraduate research (Carter 2014), but, of course, in introductory classes, this is often impossible. Moreover, at many universities and colleges today, general education archaeology courses are large, lecture-format classes. This educational setting often proves challenging for instructors who seek to provide students with an opportunity to learn experientially but who are constrained by class size, lecture halls, and large nonmajor enrollments. Compounding the problem, only a handful of laboratory-manual style texts offer hands-on, inquiry-based exercises. The few laboratory manuals on the market contain excellent laboratory exercises (e.g., Burke and Smith 2000; Patterson 2005; Rice 1998; Rice and McCurdy 2000), which we ourselves have made extensive use of over the years, but they are best suited to small courses (i.e., fewer than 16 students) and those that have a laboratory component or meet for a long enough time to complete the extensive activities (i.e., 2–3 hours). Unfortunately, most introductory courses only meet for 50 minutes, are large (i.e., 50-plus students), and generally consist of nonmajors. Research has also shown that learners—regardless of age—tend to retain more information when classroom time is “chunked.” Chunking involves partitioning lessons into shorter units in which material is introduced in one chunk, practiced in another, and discussed and processed in a final chunk. Again, some classrooms, particularly large college lectures, do not facilitate this pedagogical approach. Rather, the limited time frame and large enrollments tend to encourage just the opposite—that is, lectures focused on quantity, as opposed to quality, of content.

In response to these difficulties, we have developed a wide repertoire of short, experiential activities, demonstrations, and “minilabs” that can be completed in 10 to 30 minutes, in classes with even hundreds of students, and are suitable for both majors and nonmajors. Ranging from core archaeological concepts such as dating methods and classification to less tangible ideas such as reciprocity and gender, they are designed to break up a traditional classroom lecture, get students working actively in teams (as real archaeological work is generally done), and present the information in an tangible way that allows the material to be inquiry-based rather than receiving the information passively. Most of these activities originate from our teaching experiences with the Johns Hopkins University Center for Talented Youth, a summer program for gifted and accelerated high school students that several of us participated in from the early 1990s through the mid-2000s. As we transitioned to teaching at the university level, we began to adapt many of these exercises

to work with college students. As a result, these “minilabs” have evolved in such a way as to be appropriate for a wide range of ages, from middle and secondary school students covering archaeology as a social science unit to undergraduate students in both archaeology and other majors.

Who Is This Volume Intended For?

We see this volume as contributing to an overlooked niche in the archaeology textbook market, one focused on experiential learning and hands-on activities in settings not traditionally considered to be conducive to inquiry-based learning. Two frequently used manuals of this genre are currently on the market. One is Patricia Rice’s (1998) *Doing Archaeology: A Hands-On Laboratory Manual*, published by Mayfield. The other is Heather Burke and Claire Smith’s (2007) *Archaeology to Delight and Instruct*, published by Left Coast Press. Both are excellent volumes that we ourselves have used along with our own minilabs for many years. However, our proposed manual differs from these volumes in three significant ways. First, most of the activities in the available texts are lengthy exercises that do not fit neatly into a 50-minute class, and they are not necessarily appropriate for nonmajors. Our exercises are short, easily embedded in planned lessons, and tactile (i.e., hands-on). Moreover, they are designed to generate discussion (which helps solidify concepts in long-term memory) and convey knowledge in less technical terms by relating material to everyday concepts and materials students are already familiar with. Second, in contrast to Burke and Smith’s volume, our text is designed for *students* rather than instructors. While the online instructor’s edition contains unique material and helpful hints, the student edition is a true laboratory manual, with perforated, tear-out pages that students can turn in upon completion. This makes the exercises convenient for instructors by eliminating tedious and time-consuming photocopying. Finally, our activities are grouped thematically by archaeological concept (versus pedagogical orientation), making it easy for an instructor to couple it with a traditional text on prehistory or method and theory and to choose activities that best suite a particular topic.

This volume is intended for academic use in two primary areas. First, it is appropriate for higher education, specifically introductory courses in archaeology and world prehistory, both of which typically enroll nonmajors taking the course for general education / liberal arts credit. As universities grow their student bodies in the decade to come, more and more nonmajors will be taking courses such as archaeology as part of their liberal arts / general education curriculum. Second, the volume is intended to serve secondary social science education, specifically elective courses in archaeology, anthropology, and world prehistory courses. Social science teachers frequently find themselves called upon to teach basic anthropology and/or archaeology courses, but many are not trained as specialists in these fields. Some majored in anthropology, but social studies teachers are more commonly education majors coming out of history, sociology, or geography departments. Thus, most are not trained in anthropology and are often uncomfortable branching this far out or teaching concepts they themselves have never applied in the field or laboratory setting. Some age-appropriate activities can be found on-

line (and we highly recommend those available from the Society for American Archaeology), but not all of these are peer-reviewed or even written by archaeologists. The activities in this manual have been created by experts in the field with many years of teaching experience and have gone through peer review by other archaeologists, many of whom have extensive teaching backgrounds themselves.

Whether adopted by secondary or higher education teachers, we envision this laboratory manual as supplementary material, to be used in conjunction with one of numerous introductory archaeology and world prehistory textbooks currently available. For instructors who may choose not to use a traditional text, this small manual would be an ideal supplement to instructor-designed presentations and assigned readings. Our idea is to make these classes more experiential by supplementing the course with short, hands-on activities that are easily embedded into a 50-minute class. Because the student edition is a workbook, all the materials students need are available, including an introductory background, worksheets, and cutout materials (e.g., tree-ring sequences, faunal assemblages, etc.), saving instructors from photocopying materials for each class, as well as solving the problem of not being able to pass out real artifacts in large classes. The instructor's edition offers a pedagogical background, detailed instructions to conduct the activity, and several "levels of difficulty" from which to choose. For example, college instructors may opt to go more in depth with a topic by additionally assigning the optional discussion questions, supplemental readings, and/or reflective writing assignments. Secondary instructors will find the cutout materials ideal for younger students, especially if they don't have access to real artifacts. Frankly, we find college students also like the cutouts, though they sometimes won't admit it!

Volume Organization and Content

This volume is divided into six modules, each focused on a different theme, or aspect, of the archaeological discipline. Module 1 focuses on how archaeology fits into its parent discipline of anthropology and explores both humanistic and scientific approaches to reconstructing the past. The five chapters comprising module 1 explore concepts such as the scientific method, cultural relativism, and the uniquely human trait of using symbolism to convey meaning to others. Module 2 examines how archaeologists attribute meaning to artifacts and formation of the archaeological record. Using everyday objects such as buttons or kitchen gadgets, the chapters on archaeological context and classification help students learn how to interpret artifacts from an emic perspective. These chapters are also designed to make students aware of the biases and difficulties faced by archeologists when interpreting artifacts, particularly when unaware of our own etic tendencies.

Module 3 addresses how archaeologists date the past, both relatively (e.g., stratigraphy and seriation) and absolutely (e.g., tree-ring dating and radiometric dating). The science behind absolutely dating sites is often complex and frustrating to students with little or no science background; these activities are designed to illustrate concepts using everyday materials and ideas rather than inundating students with unnecessary mathematical details. For

example, Chapter 12, “Timelines,” seeks to help students ponder the vastness of deep time and appreciate the relatively ephemeral nature of humanity’s existence, and the even shorter existence of cultural phenomena such as written language and farming. Module 4 allows students to explore the most common archaeological specialties such as lithics and ceramics. It also explores the interdisciplinary nature of today’s archaeology, emphasizing the teamwork approach necessary to accurately understand the past. Several of these activities were inspired by Rice’s (1998) wonderful volume *Doing Archaeology*. If you have the time and space, we highly recommend her text. But for those seeking similar inquiry-based activities but are constrained by a large class size, short class period, or lack of access to real artifacts, we think you will find that these variations work well. We get around the artifact issue by creating cutouts for students to work with, such as measuring rim sherd diameter with cutout sherds or analyzing a faunal assemblage with cutout animal bones. For those of you with access to artifact collections, you can easily substitute the real thing for the cutouts.

Module 5 tackles explanation in archaeology through various philosophical and theoretical lenses such as ethnoarchaeology, evolutionary theory, and human agency. We’ve sought to relate these more difficult concepts to students’ daily lives to create analogies from which they can better develop interpretive frameworks for the formation of the archaeological record—not just what is formed but also *who* formed it. Finally, Module 6 explores topics that often get overlooked in introductory classes in general and laboratory manuals in particular—namely, ethical issues such as the preservation ethic, stewardship of the archaeological record, and accountability to descendent communities (Seebach 2014). Other ethical topics covered by these chapters include cultural diversity (or lack thereof) within the archaeological profession and the effect of climate change on the archaeological record. Many of these activities are designed as debates to get students thinking about all sides of these issues, as well to challenge assumptions and stereotypes arising from our own cultural paradigm, such as assuming agriculture is inherently positive. Our goal is to explicitly introduce students to the Society for American Archaeology’s “Principles of Archaeological Ethics” that govern contemporary archaeological practice, guide ethical behavior, and support public stakeholders in the protection of cultural resources (SAA 2019). The ultimate goal of this chapter, and the entire volume really, is to cultivate an appreciation for, and attitude of, stewardship for past and present cultures.

References

- Bender, Susan J., and George S. Smith, eds. 2000. *Teaching Archaeology in the Twenty-First Century*. Washington DC: Society for American Archaeology.
- Burke, Heather, and Claire Smith, eds. 2007. *Archaeology to Delight and Instruct: Active Learning in the University Classroom*. Walnut Creek, CA: Left Coast Press.
- Carter, Benjamin P. 2014. “Real World Problem Solving in Archaeology.” *SAA Archaeological Record* 14 (3): 19–22.
- Kolb, David. 1984. *Experiential Learning as the Science of Learning and Development*. Upper Saddle River, NJ: Prentice Hall.
- Rice, Patricia C. 1998. *Doing Archaeology: A Hands-On Laboratory Manual*. New York: Mayfield Publishing.

- Rice, Patricia C., and David W. McCurdy, eds. 2000. *Strategies in Teaching Anthropology*. Upper Saddle River, NJ: Prentice Hall.
- SAA (Society for American Archaeology). 2019. "Ethics in Professional Archaeology." Accessed 30 March 2019. <https://www.saa.org/career-practice/ethics-in-professional-archaeology>.
- Seebach, James. 2014. "The Last Chapter: (How) Are We Teaching Archaeological Ethics and Values to Our Undergraduates?" *SAA Archaeological Record* 14 (3): 15–18.