‘Archaeology Time with Miss Jessica’
Archaeology education in summer schools and summer camp in the Upper Peninsula of Michigan.

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Abstract

Archaeology education benefits not only archaeologists, but also teachers and students. It fosters future stewards of our cultural heritage while making any classroom lesson more exciting and engaging for the students. In an effort to realize both of these goals, the author undertook an archaeology education programme in her local area of Upper Peninsula Michigan using a dual approach. She coordinated and implemented archaeology education activities in four local elementary schools during summer school, on a weekly basis, and developed and led an archaeology summer camp for children in conjunction with a local chapter of the 4-H Club. Teaching methods and activities varied between the two approaches; however, object handling was a key component of every lesson. Activities included learning about the instructor through examining objects she had brought from home, the dustbin game and skeleton game, a wastebasket excavation to learn context and stratigraphy, a mock excavation, a pot-mending activity, the creation of a museum exhibit, a “Maya Math” activity using the Maya numbering system, and a human evolution activity using replica hominid crania. Each approach presented its own challenges and rewards, but ultimately the author was able to inculcate over one hundred future stewards of our cultural heritage.

Key words
Archaeology, Education, Object Handling, Mock Excavation

[...] a child went forth everyday and the first object he looked upon and received with wonder, or pity, or love, or dread, that object he became, and that object became part of him for the day, or for a certain part of the day, or for many years, or for stretching cycles of years [...] – Walt Whitman
Introduction

Archaeology education is a relatively young field within public archaeology, only a few decades old (Jameson 2004: 50; Davis 2005: 4). This recent, burgeoning interest in educating the public about archaeology demonstrates a greater awareness of and appreciation for the positive results of this education. While archaeology education includes the entire public in its scope, the author’s particular interest lies in teaching children about archaeology. The goals of educating the adult public in archaeology can also apply to teaching children. Archaeology education benefits not only the archaeologists, but also the teachers and students. Nurturing future stewards of our cultural heritage is perhaps the primary goal of archaeology education. Smardz Frost (2004: 80) notes that this field “is generally unabashedly agenda-driven: public archaeologists work very hard to instil the stewardship message in as many members of the public as they can reach”. Similarly, giving children an understanding of the concept of context and an appreciation for the vast quantity of documentation that an archaeologist must complete would potentially make them less likely to loot sites as adults and more likely to contact a professional archaeologist when needed. Another goal that benefits archaeologists is that educating the public about archaeology may also lead to “further increases in visits […] to museums, monuments and sites” (Ucko 1994: xix). Finally, teaching young people about authentic archaeology at a young age may make them less likely to believe alternative archaeologies as adults.

One way in which archaeology education can accomplish these goals is to convince schools that archaeology taught in a classroom setting benefits both teachers and students. Archaeology is, inherently, hands-on object-based learning, it is new and different to the students and they are incredibly curious about it. These strengths allow the learners to be more engaged with the lesson. Indeed, “many teachers are convinced that encounters with real objects enrich learning” (Pye 2007: 22). Finally, since archaeology is a multi-disciplinary field, it can fit naturally into every subject taught in a classroom, and make those lessons more exciting for the students (White 2005: 2).

Summer Schools and Summer Camp

In an effort to realize these goals, the author undertook an archaeology education programme in her local area of Upper Peninsula Michigan using a dual approach. The first aspect of the programme consisted of coordinating and leading archaeology education activities in four
local elementary schools during summer school, on a weekly basis. The second approach involved leading an archaeology summer camp for children in conjunction with a local chapter of the 4-H Club. Each approach had its own challenges and rewards, but the author believes that each was successful in its own way.

Between June and August of 2010, the author led archaeology programmes at four elementary schools: Houghton, Dollar Bay, L’Anse, and Baraga. She visited Houghton and Dollar Bay Elementary Schools once per week during that time, and worked with two groups of children per visit, for an hour per group. Houghton Elementary had four groups of children total, divided by grade-levels: 1st grade, 2nd grade, 3-4th grade, and 5-6th grade. Dollar Bay Elementary had two groups of children divided into an older group (grades 5-8) and a younger group (grades 1-4). The author was only able to visit L’Anse Elementary twice during the summer and Baraga Elementary once.

The archaeology education programme at the elementary schools placed greater emphasis on teaching the students about archaeology as a discipline, rather than focusing on specific time periods or cultures. The secondary goal was for the author to gain experience teaching, to test out her ideas and activities, and to demonstrate the usefulness of archaeology education to the teachers.

Teaching young people in a summer school setting rather than in a typical school-year setting had both challenges and rewards. One of the challenges was that there were never a consistent number of students in each class; numbers fluctuated daily. This made it difficult to build on the knowledge and skills gained in previous lessons and required the instructor to start each lesson with a ‘recap’ activity for the new students. The author also worked with a large range of ages of students in a single class (e.g. a gap of three years between the oldest and youngest students) and needed to design her activities accordingly. Alternatively, summer school offered a less academically rigorous setting in which archaeology did not need to fit into an aspect of the state curriculum in order to be included in the classroom (although it undoubtedly can). In this way, the author was allowed great freedom in deciding the content of the lessons, restrained only by time and the materials available to her.

On 28-30 July 2010, the author’s archaeology education programme expanded to its second approach – an archaeology camp for nine children aged eight to thirteen, through the local branch of the 4-H Club. The 4-H Club is a programme that teaches young people about
science, engineering, technology, healthy living, and citizenship through hands-on activities (4-H Club 2009). As the instructor, the author was granted the freedom to set the maximum number of children allowed to attend (which she set at ten) and the ages she would prefer to work with (eight to thirteen). These guidelines were listed in the brochure for the camp, as was the cost for attending (although her services were voluntary). The Carnegie Museum in Houghton, Michigan, hosted the camp for two hours per day for three consecutive days.

The 4-H Club archaeology camp had the additional goals of showing the students the importance of documentation during an excavation and teaching the students about local history (historic to prehistoric). Finally, the author thought it was vital demonstrate to the students that archaeology is more than ‘just digging’ and that it is not finished after an excavation is completed.

There were a few challenges that the author encountered while being the camp instructor that she had not encountered during the summer school portion of the programme, including the lack of a second teacher or teacher’s aid to enforce discipline and to help keep the children on task. The camp also required a great deal more preparation on the part of the instructor, with no outside assistance and no monetary compensation for her time and effort.

Archaeology Education Methods

The archaeology education programme employed a variety of methods to accomplish its goals. Unfortunately, due to archaeology education’s young age, it “has not yet established a canon that defines accepted content and practices” (Davis 2005: 4). The author, therefore, was responsible for choosing the activities that she used, based on her own judgment. She was careful to ensure that the activities were an equal mix of fun and learning. Indeed, Zimmerman (2003: 10) notes that “[i]f we want to get our messages across to the public, we need to find ways to teach that are entertaining and intellectually enlightening”. Saturno (1997: 22) rightfully cautions that the entertainment portion should not be of the ‘shock and awe’ type: “Teaching archaeology as a series of amazing discoveries and persistent mysteries utilizes the subject’s mass appeal but ignores its best qualities”. The author’s programme endeavoured to provide a balance between excitement and education.

Additionally, rather than directly addressing alternative archaeologies or misconceptions about archaeology, the author
attempted instead to be a good example of authentic archaeology. As Holtorf (2005: 548) states, “the only true remedy for professional archaeologists is to try harder at practicing a socially and culturally meaningful archaeology themselves” (as cited in Lovata 2007: 21). The author would add ‘and presenting that to the public’ to the end of Holtorf’s statement. She did ensure that the children knew that archaeologists study people rather than dinosaurs, but had the children not brought dinosaurs into the discussion, she would have kept them out. She believes that the mention of aliens or dinosaurs in connection with archaeology would simply conflate the ideas with archaeology in the children’s minds.

The methods utilized in the programme were mainly based around object handling activities, with a foundation in constructivist theory. McAlpine (2002) notes that the Reading Museum’s evaluation of their handling programme in local schools indicated that seeing and handling real objects is indeed an effective aid both to learning and to retaining the ideas and information associated with the objects (as cited in Pye 2007: 22). Constructivism focuses on the learner and asserts that the learner constructs his/her own meaning, and in turn, museums are now focusing more on empowering the public to interpret the past for themselves and providing them with the tools to do so (Bishop 2008). Fortunately, object handling easily conforms to constructivist ideals. The author therefore attempted to be more of a facilitator rather than a teacher in her lessons. She gave the children the tools they would need to reach their own conclusions rather than giving them a lecture in archaeology. The author additionally endeavoured to allow the students to learn about archaeological principles through associations with their own lives (Cochrane 1999: vii).

The first, and most common, method the programme employed to teach children about archaeology was bringing in artefacts for the children to hold and touch. Initially, the author used unique objects that she had around her house. Later in the programme, she developed a connection to Michigan Technological University’s archaeology department, and was given permission to borrow artefacts from their teaching collection. For the first lesson, she brought in three different artefacts from different time-periods and cultures, and one ‘mystery’ object kept hidden in a box. She discussed with the children what archaeology is, including who we study and how we study them. The author then told the children that she needed their help in figuring out what was in the mystery box, but that they needed to learn to think like an archaeologist before they could help.
The instructor then asked the students to describe the first ‘practice’ artefact rather than simply telling her what it was, since in describing an artefact, archaeologists often learn about it in greater detail and are more likely to be able to draw conclusions about it. The instructor employed the Socratic Method to teach the children – beginning with eliciting simple observations about the artefact from the young people and moving into eliciting inferences about the culture ‘behind’ the artefact as the activity went on. After the children had satisfactorily answered the questions, she would tell them any information that they were unable to ascertain themselves.

![Artifact Form](image)

**Figure 1. Artefact form completed by student**
The students then moved on to the ‘mystery box’ object, which was an object they had never seen before. The author believed it was important to demonstrate to the students how a logical process of description and visual/tactile inquiry could lead them to identify the unfamiliar object. She found that the use of the ‘mystery box’ gave the children a goal to work towards and motivation to learn the skills necessary to identify the object. This activity was included in both the summer school approach and the summer camp approach, and was used with all ages of children. To make the activity more challenging and more authentic for the older children, the instructor asked them to complete ‘artefact forms’ that she created herself (Figure 1). These students gained a greater appreciation for how archaeologists record their finds. The instructor used this artefact handling activity at the beginning of each session in the schools (using different artefacts) in order to teach the new children the concepts of archaeological inquiry quickly.

After the young people learned to describe an artefact and think about the people ‘behind’ it, the instructor began the next activity. She brought in several of her own ‘artefacts’ that described herself. She then asked the children to tell her about herself from her things. The author believes that using these modern ‘artefacts’ made the archaeological concept of objects imbued with information about their owners more accessible to the students. Once the children were finished telling her about herself, the instructor asked them to imagine that the artefacts were buried for one hundred years. The author then asked the children to determine what would survive if archaeologists discovered these artefacts in the future, and what information would be lost if certain artefacts were not recovered. Thus, the students learned that the archaeological record is never complete.

This activity naturally led into the ‘Skeleton Game’, which was an interactive, rather than object-based, activity (Figure 2). Zimmerman (2003: 11) is a proponent of interactivity in archaeology education, specifically advocating making the activity personal to the people involved, using examples from their daily lives. Taking his suggestion, the author asked for volunteers from among the children to play dead. She usually asked for two volunteers, one child with a great deal of metal (glasses, jewellery, belt buckles) and one without much adornment. The students learned that much more would be recovered from the child with adornment and therefore archaeologists would have the opportunity to learn more about that student than the student whose
skeleton only remained. The young people also learned the types of information that archaeologists can learn about a person from his/her skeleton. The interactivity inherent in this game made it enjoyable for the children as well as educational. Indeed, the author had many children volunteering to ‘be dead’. Another advantage to this game, that the author noted, was that she was able to pick the disruptive children to play dead, telling them that they were not allowed to move or talk while ‘dead’. A more peaceful lesson ensued.

**Figure 2. The Skeleton Game (photo by Elise Nelson)**

Activities designed to teach the archaeological concepts of context, stratigraphy, and relative dating followed these first three. Teaching context involved the author using an object that the students had handled previously (in this case, a spear point), and discussing with the children how an object by itself does not teach archaeologists as much about the culture that made it than if it was found with other objects. She then laid out three different ‘contexts’ (a child playing dead, a stuffed animal, and a pile of stone tools) and sequentially placed the artefact in each context. She would ask the children to tell her how the meaning of the object changed in each context and what different types of information they would be able to infer about the artefact in each context.
Learning about context naturally segued into a mock excavation. Wastebasket excavation has “been used and written about several times [...] always in the context of elementary education as a way of teaching archaeological principles to children” (Zimmerman 2007: 211-212). White’s (2005: 30) method involves gathering wastebaskets from different areas of the children’s school that would show clearly distinct patterns of discard. The children would then ‘excavate’ the garbage cans in a stratigraphic manner, sort the contents by level, and interpret the results to determine in which room each trashcan had originated (White 2003: 30-31). The instructor would ask the children questions regarding which objects were placed into the trash before others. In some schools, the author would use the trashcan located in the classroom in which she was teaching rather than gathering garbage from other locations. This allowed the younger children to make connections to activities that had occurred in the classroom and to date them successfully. In this way, the students learned the principles of excavation and relative dating in an accessible manner that was relevant to their classroom and to their lives.

The author’s archaeology education programme employed all of the methods mentioned above in both the summer school and summer camp settings. However, due to the various challenges associated with each approach, certain activities were only used in one setting or the other. The activities used only in the summer school setting will be discussed next.

Pot mending was an activity designed to give the students an appreciation for the amount of time and patience needed to reconstruct the pieces of a ceramic, to allow the children to gain skills in spatial awareness, and to instil in them the knowledge that still takes place after the excavation is complete. For this activity, the author asked each school to purchase small terracotta pots for each child (one school was only able to find large pots, and so bought a single pot for each class). The instructor discussed how archaeologists rarely find intact ceramics and often reconstruct them in the lab. The young people decorated their pots, then put them into paper bags, and proceeded to smash them on the playground. The younger children did not have the level of patience necessary to wait for water-soluble glue to dry (the correct type of glue to use while pot mending), so the teacher dispensed hot-glue to mend their pots.

The author would suggest that if an archaeology educator desired to teach children aspects of archaeology other than the basic
principles, he/she should start with what he/she is interested in and knowledgeable about. Therefore, the author desired to instruct the summer school students in ‘Maya math’ due to her interest in Maya archaeology. She began the lesson by bringing in images of Maya art to discuss some basics of Maya culture before beginning the math lesson. Saturno (1997: 9) justifies his use of ‘Maya math’ as an entry point into the study of that culture because ‘mathematics and counting are universal’. The author’s motives were similar, but with the addition of her desire to demonstrate to the teachers that archaeology can be applied to the subject of math, and will transform it into a more enjoyable experience for students who perhaps would otherwise be uninterested. Indeed, she heard one student exclaim “this is fun!” while doing a multiplication problem – an exclamation seldom heard in the context of math education. The author followed Saturno’s (1997) model of teaching the children the Maya numbering system, but with the addition of hands-on materials to represent the numbers. She gave the children four beads (each representing ‘one’) and three pencils (each representing ‘five’). The children then proceeded to count as high as they could with the objects they were given (since there were only four beads and three pencils, the highest number they were able to produce was nineteen). The author was then able to discuss the fact that the Maya used a vigesimal numbering system, or base-twenty. The young people then solved math problems using Maya numbers. For the older children, multiplication and division problems were used, while the younger children were challenged sufficiently with addition and subtraction.

The final activity used only in the summer schools was a lesson in evolution, using replica hominid skulls borrowed from Michigan Technological University’s archaeology department’s teaching collection. The author desired to make use of the replica skulls in the university’s collection to introduce the students to the concept of evolution at a young age (Michigan’s state curriculum does not require the children to learn about evolution until they are in high school), and to engage the children with an exciting and scientific activity. The author modified a worksheet she located online which required the children to note the different features of the crania that changed over time and why these features changed (Nickels 1999). The teachers told the author that the students all enjoyed the lesson and also retained a great deal of information about the subject.

The archaeology education programme utilized two methods during its summer camp approach that the author was unable to apply
to a classroom setting. These consisted of a mock excavation and the
creation of a museum exhibit. The instructor wanted the students to
have the opportunity to engage in an excavation in order to more fully
understand and appreciate the process and to be able to apply the skills
and knowledge they had gained in the previous activities. She decided to
have the children engage in a mock excavation rather than an authentic
excavation for three reasons. She does not believe that young people
aged eight to thirteen were capable of competently excavating a real
site, she does not believe that a site should be excavated merely for
the goal of teaching students excavation techniques, and she wanted
to be able to control the content of the excavation (including the levels
and the artefacts in each level).

Figure 3. Gridding the ‘Site’.
The author thought that it was important for the students to learn local history as well as archaeology, since she had the opportunity to tell a story about the past using the excavation. Since the summer camp took place at the Carnegie Museum, she decided to construct the excavation to represent the history of the site where the museum is now located (from historic to prehistoric times). She endeavoured to retain as much authenticity as possible during the excavation; she borrowed real artefacts from the university, consistent with the time periods she desired to represent (e.g. an historic shell casing to represent the time when an armoury was located at the site). The instructor introduced the students to the tools that an archaeologist uses during the first day of the camp and discussed each tool’s function and proper use. She also gave the students some background information about the site of their ‘excavation’ and made sure that they understood that archaeologists undertake research to develop a hypothesis before deciding to excavate a site. The young people then formulated their own hypotheses regarding what they wanted to learn from the ‘site’.

The instructor decided to divide the students into pairs, with one child excavating while their partner screened the soil, for a total of four groups. Therefore, she required the children to grid the site into four equal units; since she was using a container as the ‘excavation’, she was unable to make the units a standard size (Figure 3). The students cleared the surface and performed a surface collection. They learned how to take a proper photograph of an artefact, including the need for a scale and a north arrow. They then bagged and labelled the artefacts.

When the students began excavating, the instructor had to stop them occasionally to remind them not to remove an artefact as soon as they had discovered it. Eventually, all she had to do was ask ‘What do you do when you find an artefact?’ and the students would remember that they should leave it in situ for the time being. She also needed to remind them to excavate by scraping across the unit rather than digging down into it with their trowels, but again, they soon caught on to the concept after she reinforced the method (Figure 4). The instructor also provided the children with excavation journals, level forms, and artefact forms reproduced from White’s (2005) sample forms. She designated the oldest student to be in charge of the Munsell Soil Color Chart and to determine the soil colour of each level. When she created the excavation, she attempted to fill each level with a soil that would be distinguishable from the levels above and below it (including a stratum of ash representing a burn event), so the students
would be certain to encounter a soil change and therefore the start of a new level. The author would also like to note that it was important to plant small objects in the mock excavation to give the screeners something to find so that they will not become bored.
During the third and final day of the summer camp, the instructor asked the students to interpret their finds and to create a museum exhibit about their interpretations for display at the Carnegie Museum (Figure 5). These activities were an important aspect of the camp because it taught the children that archaeology is not finished after an excavation is complete. The author and the children discussed what happens to artefacts discovered during an excavation, and the miniscule percentage of artefacts that museums display compared to how many are in storage. Before the students began work on their exhibit, the instructor asked them to explore the museum in order to pick a favourite exhibit and to be able to explain to the rest of the students what made that exhibit their favourite. The author and the children then discussed what constitutes a ‘good’ exhibit. The students decided to arrange their exhibit chronologically (by stratigraphic level), and to not display duplicates of artefacts. The instructor had brought her laptop, on which the students typed artefact labels and case labels. These labels were then printed out and mounted. The exhibit was on display to the public at the Carnegie Museum for a month, after which the university required the return of their artefacts for the start of the new school year.

Figure 5. Part of the Museum Exhibit created by the students.
After the students completed their exhibit, their parents were invited to a small reception at the museum, during which the children were able to show their parents what they had accomplished and to tell their parents what they had learned during the camp. The author was able to gauge the results of her teaching by listening to the young people interact with their parents. The parents asked questions to the child, and through the child’s responses, the author observed that learning occurred. The author was humbled to observe that even students whom she thought had not benefited as much from the camp had a great deal of accurate information to impart to their parents. One should never assume that the disruptive children are not learning.

Conclusion

If the author were able to run the archaeology education programme for a second time, she would expand on certain aspects of the programme and add others. She realizes that she should have included some type of evaluation in order to determine how much the children learned from the programme. Certainly, students do not always learn everything that instructors teach. However, it would have been difficult to evaluate the effectiveness of the summer school approach since the children attended sporadically. The author would also expand the programme to older students, young adults, and home-schooled children.

The archaeology education programme reached over one hundred young people during its three-month run. Utilizing the elementary school approach, the author was able to teach more students, but perhaps not as deeply as she was able to reach the students at the summer camp. Due to the differences inherent in each approach, her teaching methods needed to differ as well. Using primarily hands-on, object-based learning, the author endeavoured to instil in the children an appreciation of and respect for the past. Employing activities that allowed the students to connect archaeological principles to their daily lives inculcated in them a deeper understanding of archaeology as a discipline. Leading these activities in a classroom setting allowed the author to demonstrate to the teachers the effectiveness of archaeology as a teaching tool for all subjects (indeed, Houghton Elementary asked her to return during the school year for more archaeology education). By being a good example of authentic archaeology, and by teaching students about it at a young age, the author believes that the children will be less likely to believe alternative archaeologies as adults, and will be less likely to loot sites. As the poet, Walt Whitman, noted in the
quotation at the beginning of this article, objects can create powerful emotional connections to children and to people of all ages. By using the inherent power of objects, archaeology educators are fostering the next generation of stewards of our cultural heritage.

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