

The relevance of archaeology curricula in higher education today

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Abstract: The current competitive job market, in which technology is replacing many existing jobs and continuously creating new ones, poses new challenges and demands. Despite the limited opportunities for individuals to attain a career in the field, a traditional discipline such as archaeology can effectively equip its graduates to compete in this new environment with abilities and transferable skills ranking among the topmost desired by employers. Moreover, archaeology may no longer be regarded as a discipline removed from contemporary concerns and issues but one which can meaningfully contribute to such discourses.

Keywords: Archaeology today; Technology; Transferable skills.

Introduction

In a fast-changing world profoundly impacted by technological innovations and marked by rising new job market demands, how does a discipline such as archaeology remain relevant and current in higher education? Can archaeology graduates succeed in the highly competitive reality of the 21st century? Is the inclusion of archaeology courses in many university curricula advantageous to students irrespective of whether they will pursue a career in this field? How does a career in archaeology benefit the countries it serves today and how removed or close is it in its scope to the vital issues of contemporary society?

Archaeology can be taught through Classics and Art History departments as a humanities discipline or through Anthropology as a Social Science discipline. The crisis in the humanities has been a topic of discussion for some time and the issue may become more acute as

students assess what career prospects are viable in an age marked by continuously rising changes and rapid developments. Recent studies find that employers will give several skills the highest priority in the next few years or decades.

The World Economic Forum, acknowledging the enormous effect that emerging technologies will have on labor, lists the following as the 10 most important skills in 2025:

1. Analytical thinking and innovation
2. Active learning and learning strategies
3. Complex problem-solving
4. Critical thinking and analysis
5. Creativity, originality and initiative
6. Leadership and social influence
7. Technology use, monitoring and control
8. Technology design and programming
9. Resilience, stress tolerance and flexibility
10. Reasoning, problem solving and ideation

These are complemented by several additional skills needed for jobs in the 21st century including: active learning/curiosity/growth, emotional intelligence, communication and coordination, collaboration, judgement and decision-making, and adaptability (Talin 2021).

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The UNESCO report “Thinking Higher and Beyond: Perspectives on the Futures of Higher Education to 2050,” published on May 25, 2021, finds that a good education can cultivate the following values to contribute to a world with a better future: “Values such as respect, empathy, equality, and solidarity should be at the core of future higher education institutions and their missions” (United Nations Educational, SCIENTIFIC and Cultural Organization 2021).

Exposure to archaeology education may have very positive and relevant outcomes regarding many of the values and skills listed above. Learning revolving around what is taught and assigned in the classroom (supplemented by work in the field) may be rigorous and rich to impart knowledge that transcends the strict scope of studying the past. Following is a review of how students may develop some of these skills by studying Archaeology.

Reasoning, communication, problem solving, and analytical and critical thinking

Archaeologists are called to extract, gather, save, and organize information; critically review and evaluate data, and reach reasonable and logical conclusions and interpretations. They often face complex problem-solving during excavation, as they need to make decisions regarding stratigraphy, and assess the best ways of uncovering and correctly interpreting or reconstructing remains and artifacts. Inexperienced students require appropriate supervision to make decisions about the excavation process. However, the field school is an important learning environment since it develops problem-solving abilities. It also involves students in everyday communication with their peers and supervisors and includes many of them in the daily practice of diary keeping, succinctly, clearly, and accurately describing the day’s activities, strategies, and finds. The excavation process leads to several daily decisions and proves to be a good training ground for students to develop such abilities.

Archaeology students exercise analytical and critical thinking both in their fieldwork

and academic research. The ability to find and evaluate information, produce and present a valid, well-documented, coherent, rational outcome is a constant undertaking for them. Reason and communication abilities are inherently tied to this process. Relying on solid evidence and documentation is an essential responsibility for those creating new knowledge of the past. In this age of overabundant information, the ability to evaluate the appropriateness and validity of information is a major outcome of a good education. It is a transferable skill that equips persons with a most valuable competency and places them at an advantage in any career or task they may follow in the future. The reliability this skill creates qualifies those with it to work on their own or as part of a team.

The value of introducing young learners to archaeological thinking, the manner by which this could be achieved, and the challenges involved in this process is also a thought-provoking topic of investigation (Wearing 2011).

Active learning curiosity/growth mindset

A proper archaeology education involves a process of active learning. The learning experience of the students cannot be subjected to just passive listening, in which they should take information at face value. Education must avoid conditioning students to think that their training should consist of unquestionable facts. Controversies on interpretation, authenticity, use, meaning, creation process, reconstruction etc. stimulate debates, reflection, and interaction and develop critical thinking, questioning students’ own perceptions and other preconceived notions and offering essential new perspectives. This can be pursued in the classroom through many methods, e.g., professors may assign students specific controversial topics and relevant readings for student groups to debate in the classroom. It can even involve roleplaying, of which artefact repatriation is an example. Other methods could include conducting interactive classes; lecturing at archaeological sites; and asking

students to think about the solution to a particular problem and present a short paragraph in class.

Successful education aims at instilling the ability to continuously learn and to “learn to learn.” This not only merely involves self-motivation and personal interests, but also the competence of keeping up with the rapid changes in one’s field or work and the willingness to be a productive member of society and an informed citizen, requiring a solid basis upon which one can effectively build additional knowledge. This basis enables one to turn to and critically evaluate the right sources, discard what is unreliable, and understand what is important and what is not. Archaeology training teaches pertinent competencies via research, writing skills, the evaluation of sources and problems and studies of topics relating to different cultures, the human condition, and the accomplishments of the human spirit, instilling a curiosity removed from the interest in sensationalism.

Creativity and initiative

Creativity is consistently mentioned as a skill that employers will be looking for in the 21st century. It often refers to a soft skill but, at times, also a hard skill. The literature has considerably debated how to define creativity and whether it can be taught and measured (discussed, among others, by Egan, Maguire, Christophers *et al* 2017; and Riley 2020).

Open-mindedness and inventiveness in proposing solutions after considering fresh and different ideas can be a valuable process to interpret data or establish connections as revealed by material remains. However, training must appropriately harness creativity so students can navigate problem-solving processes in archaeology. It presupposes a solid education enabling one to consider realistic and reasonable possibilities with a firm compliance to ethical principles and reliance on proper documentation. How students receive training in the classroom can also cultivate creativity. Imaginative and inventive pedagogical approaches in the classroom not only can

facilitate the process of learning but also instill the willingness to venture out of common approaches.

Learning to take initiative is embedded in the fieldwork experience as it involves a continuous process of making decisions which, however, must use reason, sound judgement, and adherence to the major principles of excavation.

Use of technology

Research has recently placed a robot in the shape of a dog at the site of Pompeii to identify issues with its structure, safety, and looting. Studies have reported this technology as groundbreaking for archaeological sites, proving that robotics and artificial intelligence can be relevant to the field, most efficiently facilitating site management, development, monitoring, and preservation.

Archaeologists have long collaborated with scientists to date, preserve, record, and analyze remains. As technological advancements proceed at a rapid pace, ever more tools become available to identify, excavate, interpret, and reconstruct data, including electronic databases, 3-D modelling, virtual reality, radars, laser scanning (LiDAR, “Light Detection and Ranging,” a tool that through scanning can show otherwise invisible sites via scanning), Geographic Information Systems, X-rays, CT scans, satellite imagery, various scientific dating and chemical analysis techniques, those to recreate sounds or explore the interior of tombs, aerial photography – including the use of drones for high-resolution aerial photography, and underwater exploration technology such as sonar. Rather than meaning that archaeologists will become experts in the available technology for their work, they can learn about their possibilities and employ them as needed.

Resilience, adaptability, stress tolerance, and flexibility

Archaeological fieldwork demands perseverance and a great deal of physical effort. Challenges can range from sites that are difficult

to reach and excavate, terrain that makes the excavation process arduous, climatic conditions that are strenuous (e.g., extreme heat) to very long hours of actual digging with small tools which require concentration and systematic and meticulous steps. Common constraints, such as limited funding and teams' ability to be at a particular place in the world during a specific period within the year require that members constantly and compactly work for a specified span of time to meet many work needs. Fieldwork cultivates discipline, concentration, and resilience. Researchers must take special care to avoid destroying evidence or damaging artifacts as any damage can be irreparable and irreversible. Salvage archaeology has added constraints pertaining to even stricter time limits and legal and community issues.

Fieldwork processes and aims require adaptability as it often deal with unexpected turns and unpredictable developments. Archaeology not only studies human adaptation but (as an academic discipline) also finds itself in a constant state of flux, requiring compliance with and acceptance of change.

Archaeological fieldwork trains people to efficiently function under strenuous conditions, respond to teamwork requirements, continuously make the right decisions and connections, and draw logical conclusions. The responsibility one bears in uncovering the remains of the past by handling artifacts and collecting samples is considerable. Archaeologists must be able to maintain steadfastness in adversity and carry on with the tasks at hand, rising to the challenge of dealing with any obstacles whether they relate to people or the excavation process. Taking interest in archaeology presupposes curiosity. Pursuing knowledge about other cultures, peoples, and periods requires flexibility and open-mindedness to understand differences and consider various perspectives. Preconceived ideas, biases, and rigid ways of thinking contradict the aims of the discipline. The discovery, collaboration, and problem-solving processes in archaeology relate to mental flexibility and a willingness to accept new ideas and unfamiliar approaches.

Collaboration

Archaeological projects involve teamwork and collaboration at many levels. Fieldwork entails involving many people within a well-planned structure regulated by cooperation and harmony. Members of such a team range from the most experienced and knowledgeable researchers to novices and those employed in some of the most demanding manual labor. Collaboration with local communities can be very enriching in understanding site particularities and the traditions surrounding it. Archaeology is associated with numerous fields, e.g., history, geology, chemistry, engineering, zoology, botany, biology, medicine, economics, geography, mathematics, and linguistics, among others. Such a need to involve various fields of expertise to identify, analyze, and interpret materials is one of its most stimulating facets.

Respect and ethics

Respect and ethics lie at the core of archaeology. Upholding ethical principles and resolving ethical dilemmas in recovering and reconstructing the past can instill a respectful mindset: respecting the laws of the country regarding cultural heritage, excavation rules (by itself a destructive process) to avoid irreparable loss of information, all remains (including the humble ones which can inform us about life in the past), and human dignity in how to excavate burials, in addition to promoting detachment and objectivity to interpret data (considering issues of repatriation of antiquities) and conservation and preservation are just some of the relevant examples. How research views and treats remains of the past also relates to cultivating equality. Even though archaeological discoveries have so often been manipulated to promote specific agendas or biases, the discipline should especially promote the importance of learning about our shared heritage and the past of all cultures, periods, and social strata.

Empathy

Empathy and the study of emotion in archaeology is a possibly controversial, difficult, and complex topic which still lacks extensive exploration. Should archeology involve empathy and draw conclusions on past peoples' emotional experience? Sarah Tarlow (2000), in *Emotion in Archaeology*, has comprehensively reviewed the relevant theories and pointed out challenges in various approaches. She draws attention to the inappropriateness of relying on personal emotional responses to comprehend what people in the past might have felt, bidding caution to the fact that such subjective emotional responses may be inapplicable to past cultural contexts. Tarlow (2000: 714) discusses the difference between defining emotion as universal versus culturally specific. No fixed preconceived notions should apply to the consideration of remains from past cultures. Rather, conclusions should stem from the unearthed evidence. "It is therefore important for us to theorize the materiality of emotional practices. What are the relationships between spaces, architectures, artifacts, and emotions? How do things become emotionally meaningful?" (Tarlow 2000: 729). Tarlow (2000: 730) deems the study of emotions as a valid goal in archeology: "If one cannot write a past which consists entirely of changing emotional states, neither should one write a past in which deeply meaningful aspects of human experience are either assumed or ignored".

Despite the caution needed when investigating material remains to avoid projecting contemporary perceptions and notions into the past, archaeology, in its endeavor to learn about past human life, may cultivate empathy in its encounter with how people struggled to deal with the major universal issues of human existence.

Leadership and coordination

The literature on leadership provides numerous lists and accounts of effective

leadership qualities, often including the aforementioned skills in its lists of good leadership traits:

- Ethical conduct and integrity
- Effective communication skills
- Critical thinking
- Problem-solving
- Good judgement
- Collaboration, teamwork
- Creativity
- Adaptability
- Flexibility
- Resilience
- Openness to change

Other qualities it discusses may also relate to an education in archaeology: the ability of persuasion and to foresee opportunities and act accordingly; to set meaningful goals; to be willing to take risks; to possess confidence, motivation, and interest in delegating responsibility.

Field archeologists investigate possibilities for sites which will advance knowledge. This is a complex process which not only requires expertise but also abilities pertaining to fund-raising, submission of sound and persuasive proposals, negotiations with central and local authorities, consideration of legal issues, and (very importantly) organizational skills. Persuasion and communication skills and the ability to make sound arguments are essential to plan an excavation project since such projects constitute massive tasks requiring efficient management. Archaeologists who wish to pursue fieldwork see far ahead and have the confidence and willingness to take risks. Fieldwork is a demanding and complex operation requiring teamwork and collaboration. Archaeologists must be able to wisely organize teams so projects can proceed productively and smoothly with reliable collaborators to whom they delegate responsibilities. Choosing qualified team members is a skill good excavation directors must possess. Several such members, depending on their responsibilities, can develop leadership qualities as they will be responsible for supervising smaller teams and coordinating daily activities. However, emotional intelligence

is essential for the role of a good leader who will motivate and inspire others.

Naturally, not everyone will assume a leadership role in their career paths, but students should receive the appropriate education to enable them to make sound judgements as followers. Both good leaders and informed followers can contribute to improving the world. Archaeology cultivates intellectual curiosity and critical thinking, providing students with valuable tools to make the right choices not only in whatever career they will pursue in the future but also as good citizens.

The contributions of the profession and its relevance to contemporary issues

Archaeological investigations of the past not only satisfy a basic curiosity and are of interest to the people of a specific country, but also contribute to our knowledge of the human condition, the momentous changes and shifts in the history of humankind, past attitudes and acts, their consequences from which we can learn, and of human creativity – from which we can derive joy and intellectual satisfaction. Archaeological investigations in a part of the world concern the entire global community. By contributing to the understanding of what is common and what is different, it can unite and connect humanity rather than play a divisive role.

The archeology profession is necessary for the continuous accumulation of knowledge regarding the past especially in cases of salvage excavations as construction may eradicate any remains forever. Degrading the importance of the profession would be the same as saying that a country lacks interest in culture. Archaeological discoveries can lead to a variety of professions and cultural industries with educational and economic advantages e.g., academic or government positions; museum or cultural heritage management; curatorship; and media, journalism, conservation, guiding, archival or tourism jobs. The economic benefits to a country are immense (especially regarding tourism).

Archaeological discoveries can positively impact local economies and promote entrepreneurship. Developing a vision for new possibilities – especially with the support of new technologies –, defining opportunities, planning for sustainable solutions, and understanding all the advantages involved in exploring and promoting cultural heritage make this a very exciting field. Despite the massive technological developments which will render certain professions obsolete, such means are unable to replace archaeology but can complement it. Moreover, the transferable skills it teaches, e.g., critical thinking and problem-solving, will be absolutely necessary to evaluate and supplement what technology will offer or to rise to the yet unknown challenges of new professions.

Archaeology, as it recovers, studies, and preserves the past, is unable to remove itself from present-world challenges, as several authors point out. Its reconstruction of the past can contribute to making us look at human existence with a sharper understanding and willingness to accept human differences and acknowledge all that unites us. We can also find it informs us on current pressing issues, e.g., on how past societies dealt with certain issues pertaining to gender, homosexuality, political influence, expansion, war, and class, status, citizenship, race, religion, and age differences, topics of analysis which could directly inform discussions on relevant contemporary concerns. The analysis and (very often) criticism of past practices and ideologies can offer constructive insights and cultivate critical thinking. The ideology behind how archaeology has been practiced across time is another topic that relates to contemporary issues such as gender, status, or race.

The new multidisciplinary archaeology of climate change may provide interesting insights on climate change and cultural diversity. “The archaeology of climate change offers opportunities to identify the factors that promoted human resilience in the past and apply the knowledge gained to the present, contributing a much-needed, long-term perspective to climate research. One of the

strengths of the archaeological record is the cultural diversity it encompasses, which offers alternatives to the solutions proposed from within the Western agro-industrial complex, which might not be viable cross-culturally.” (Burke, Peros, Wren *et al* 2021).

The relevance of archeology to subjects that concern the present such as “identity... environment, warfare and oppression... economics...(and) politics has also been discussed (Henson 2017: 45-46.)

Conclusions

The higher education study of archaeology not only leads to the practice of a profession which is valuable to the country and to the enrichment of world heritage knowledge, but, by the transferable skills it imparts, can also open exciting prospects for diverse careers. Graduates will be selected for

such qualities as their critical thinking and problem-solving abilities; awareness of the importance of professional ethics and conduct, communication, and organizational skills; and their ability to evaluate sources of information, continuously learn, be able to adapt, be flexible and resilient, work under stress, and be good leaders or good followers and team players. These skills have been listed as the most in demand by employers now and will be in the next several years. Thus, Archaeology programs can play a very enriching role in higher education offers as they teach competencies which can open unforeseen career possibilities.

Archaeology is not only a discipline that only looks at the past. It focuses on essential human qualities and topics which may be very relevant to present concerns. Students who take advantage of what the discipline has to offer can successfully pursue several career paths and be well equipped to face the challenges of a fast-changing and very competitive world.

THOMAS, K. A relevância dos currículos de arqueologia no ensino superior hoje. *R. Museu Arq. Etn.* 40: 215-222, 2023.

Resumo: O mercado de trabalho competitivo de hoje apresenta novos desafios e demandas, onde a tecnologia está substituindo muitos dos empregos existentes e novos empregos são continuamente criados. Apesar das oportunidades limitadas para alguém alcançar uma carreira no campo, uma disciplina tradicional como a arqueologia pode efetivamente equipar seus graduados para competir neste novo ambiente com habilidades e habilidades transferíveis que são classificadas entre as mais solicitadas pelos empregadores. Além disso, a arqueologia não pode mais ser considerada uma disciplina afastada das preocupações e questões contemporâneas, mas pode contribuir para tais discursos de maneira significativa.

Palavras-chave: Arqueologia hoje; Tecnologia; Habilidades transferíveis

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