Mortimer Wheeler, Lewis Binford, Ian Hodder\textsuperscript{1} ... and you: Active learning in archaeology

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\textbf{Abstract:} Harnessing students’ curiosity and channelling their ability to learn effectively is nowhere more important than in teaching theoretical topics; those that are too often caricatured as disconnected from the real world of archaeological experience. This paper outlines active learning strategies to increase the effectiveness of teaching archaeological theory and method, a competent understanding of which is essential to well conducted professional practice. Through a range of interactive instructional strategies based around the theme of ‘becoming’ a professional archaeologist, including archaeological action figures, trading cards and a character-based role play, we aim to make students aware of the limited and provisional nature of archaeological knowledge, facilitate different styles of learning, and provide some sense of the panorama that is archaeology. As students have more ‘fun’ they become more motivated, engage more effectively with the material and increase their learning.

\textbf{Keywords:} archaeology, active learning, fun, theory

\textbf{Introduction}
When we started teaching at university we were both surprised at how much intellectual effort it takes to be a good teacher. We are not referring to developing the content of topics, which we expected to be time consuming, but to the effort involved in developing techniques for being an effective teacher. Our basic philosophy is that the highest quality student learning is achieved through motivating students to seek information for themselves, develop their critical skills and take intellectual risks—and that a very safe learning environment is essential to achieving this. Harnessing students’ curiosity and channelling their ability to learn is nowhere more important than in teaching theoretical topics; those that are too often caricatured as disconnected from the real world of archaeological experience. This paper outlines some active learning strategies that we use to increase the effectiveness of teaching archaeological theory and method, a competent understanding of which is essential to well conducted professional practice.

Our approach to teaching articulates with the educational philosophy known as ‘active learning’, which has received much attention since the 1980s, especially in disciplines such as psychology (e.g. Allegretti
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and Frederick, 1995), history and political science (e.g. McCarthy and Anderson, 2000), and health care education (e.g. Griffiths and Ursick, 2004). Active learning emphasises that students learn more effectively if provided with opportunities to dynamically engage in the production of knowledge, rather than act as passive recipients of knowledge. As Griffiths and Ursick (2004) point out, however, active learning is more than simply having students involved in a hands-on exercise or practical activity. It requires students to engage with core concepts through some form of activity and reflect on their learning experiences. In essence, student learning is increased through any activity that reinforces presented information, especially when this is tied to previously acquired concepts.

Over the last couple of decades, there has been considerable research undertaken on active learning, especially in terms of students’ ability to absorb information in different teaching formats. For example, Ruhl, Hughes and Schloss (1987) have demonstrated that students are able to absorb significantly more information if they are given several short periods of two minutes to consolidate their notes during a lecture. When exposed to too much material at once, student learning is reduced (Russell et al. 1984) since, as Chilcoat (1989) notes, students tend to get lost in verbal mazes. Similarly, Kezar’s (1999) study on educational trends in the United States demonstrated that the use of active learning teaching methods could produce an improvement in students’ critical thinking, nonverbal communication, writing, and speaking, while McCarthy and Anderson’s (2000) comparative study of active versus traditional teaching styles found that students who had been taught using active learning methods scored higher on standard evaluations than students who had been taught by traditional teaching methods.

Although traditional methods of instruction are not without their advocates. (McKeachie et al. [1994], for example, cite a number of studies demonstrating that a well-presented lecture can promote effective learning), alternative forms of learning are most appropriate when the teacher wants to: engage students in a topic in which they are not already interested; examine and possibly change their attitudes; explore controversial or ambiguous material with open minds; be able to transfer knowledge to new situations; develop problem solving skills or develop higher-order, critical thinking skills (McKeachie et al. 1994).

Since 2001 we have jointly taught a course in Archaeological Theory and Method (ARCH 3301) to university students in their third year of an archaeology degree at Flinders University, Adelaide. This topic are particularly suited to being taught using active learning strategies, as our core aims are to help students meet the challenge of cultivating higher-order thinking (cf. Griffiths and Ursick, 2004), as well as gain a sense of archaeology as a profession. The content of this topic discusses both the historical development of the main schools of thought in archaeology and the manner in which theory is used to inform archaeological practice and interpretation. In response to our desire to demonstrate the excitement and contemporary relevance of theory, we set out to present the topic in interesting and engaging ways. Our premise was that, if students enjoyed the learning process, they would not only stop resisting learning, but also reach out intellectually to engage with the material.

The principal challenge was to engage students’ interest in a topic that the majority see as inherently boring. The paradox of this view, of course, is that while archaeological theory can seem boring, the lives of archaeologists are actually extremely interesting, if not flamboyant and, at times, enthralling. It is not only the issues themselves that are interesting, but also the different opinions that archaeologists bring to the material and how this affects their interpretations of past human behaviour. The challenge for us as teachers was to marry the intrinsic excitement of the discipline and the achievements of its practitioners to the teaching of critical theoretical issues that have shaped the discipline and make students want to engage with this.
Theory and method as a tertiary topic

In developing our topic we had to consider a number of parameters. In the big picture we needed to ensure that students obtained an overview of the major theoretical developments in archaeology, as well as an understanding of how these were employed in particular seminal studies. We decided to make this manageable by personalising it and linking it to the contemporary learning environments of the major practitioners. By doing so we hoped to move beyond the obvious pitfall of simply criticising all past archaeological positions with the luxury of hindsight, to make students aware of the positive theoretical and methodological contributions which have resulted from each major shift—many of which, for good reason, have become part of the accepted archaeological ‘toolkit’ today. In teaching this topic we also had to engage with the typical prejudices about the relevance of theory to contemporary practice, most often expressed through the perception that theory is an arcane body of knowledge only relevant to academics, rather than as something which informs and underlies all archaeological practice. The value of this topic lies in its potential to teach students how to think critically and to understand where their received wisdom comes from. In part our goal was to help them understand this bigger picture by thinking of the discipline of archaeology itself as a dataset, including archaeological papers, careers and thought patterns.

Teaching the topic

Aims

Active learning strategies are well suited to our teaching of this topic, the main aims of which are:

- To help students become familiar with the use of archaeological theory and its practical applications.
- To give students a basic understanding of the history of archaeological thought.
- To help students achieve a better understanding of the relationship between data, theory and method.
- To teach students how to critically evaluate theory and method in archaeological publications.
- To help students acquire the skills to decide the appropriateness of particular theories and methods to their own research projects.

The topic delivery is taught in one weekly, three hour seminar. Students are expected to actively participate in seminars through questions and discussion, as well as through formal group presentations on weekly topics. The seminar presenters are responsible for leading the discussion along sensible and informed paths, but everyone is encouraged to contribute.

Making theory fun

Active engagement in the learning process necessitates modification of the traditional lecture format. The most common active learning strategies include discussion, the use of film and other visual-based instruction, in-class writing, debates, drama, role playing and peer teaching (Bonwell and Eison, 1991). Our aim in ARCH 3301 was to develop exercises specific to the profession of archaeology that would engage students’ interests and give them a sense of growing into a profession, with specific horizons, limitations and orientations. In short, we wanted them to begin to think like archaeologists. Active learning is particularly suited to achieving this aim since it enriches the learning of concepts, and encourages development of the skills and behaviours that are required of future practicing professionals (Griffiths and Ursick, 2004).

The main problem we faced was how to make theory interesting. In line with what we already knew about the flamboyant lives of archaeologists, we decided to personalise the development of archaeological theory
by linking it to the careers of the major proponents of archaeological thought, their personal learning contexts, and the excitement inherent in the quest for knowledge. We do this in four complementary ways:

• By requiring students to adopt the persona of an archaeologist for the duration of the topic. Students are allocated a real archaeological personality whom they are expected to become an ‘expert’ on by constructing a profile of their character and then role playing the persona of this character throughout the topic as needed.

• By linking this profile to a more tactile assignment, submitted in the early weeks of class, which is to make a action figure of their chosen archaeologist, complete with accessories.

• By asking students to summarise the core information from their profile in an Archaeology Trading Card.

• By situating these individual personalities within their wider schools of thought through an exercise we call ‘Seven Degrees of Archaeology’, which requires the students to role play against each other as proponents of the major schools of thought.

The archaeological profile
At the beginning of the term each student is assigned, or chooses, a well-known archaeologist, either past or present. We assembled a primary list based on respective contributions and the availability of published material, although students are also free to choose someone not on the list. These range from William Petrie and Mortimer Wheeler (influential practitioners from the late nineteenth and early twentieth centuries) to Lewis Binford, Ian Hodder and Margaret Conkey (all current practitioners). For the profile students are expected to canvass relevant personal and professional influences, including biographical background, major publications and contributions to archaeology, an assessment of friends and foes, and an outline of their archaeologist’s involvement in any public debates. To do this successfully students need to read both published material by their chosen archaeologist, as well as material about them (i.e. biographies, critiques of their work, reviews of books) and often need to read between the lines in order to make the link between theory and practice.

The archaeologist action figure
The action figure is a less serious aspect to this assignment, which is included to make the construction of the profile more fun, and to anchor the biographical details to an actual image and persona. Students are asked to dress their action figure in appropriate clothing and to include any appropriate items of material culture that they think demonstrates the character of ‘their’ archaeologist (see Fig. 1). Students use the action figure as a prop when they present their profile and bring the action figures to class throughout the topic. While we expected to find some resistance to this, we actually found very little. Most students adopt it enthusiastically, so much so that the figures they create often exceed our expectations.

Fink’s (1999) model for active learning suggests that instructors ‘find ways for students to engage in authentic dialogue with people other than fellow classmates who know something about the subject’. We encourage our students to contact directly the archaeologist they are portraying (provided that person is still alive) and have found that this increases the student’s commitment to providing an authentic portrayal of their character, as well as providing necessary biographical information. Moreover, in an age of populism and celebrity culture (e.g. Dixon, 1999; Leff, 1997), this approach directs entrenched (and often unconscious) social and behavioural attitudes towards the analysis of a specific object, the ‘celebritised’ archaeologist. Occasionally, these professional introductions have endured beyond the duration of the topic, with the assigned archaeologist becoming part of the student’s professional network and, in some cases, the students even presenting their lecturer with their action figure (Fig. 2).
Figure 1 The Archaeologist Action Figure (Erinna Dennis as Clive Gamble, 2003)

Figure 2 Anne Pyburn with the Anne Pyburn action figure.
Archaeology trading cards

A recent development in our teaching of this topic is the Archaeology Trading Cards (see Fig. 3). We link the trading card to the profile by asking the students to complete the card along with the action figure early in the topic, and present them both to the class. As a set that is produced by the class, the trading cards then become a ‘crib’ for learning about major archaeological theorists. Our Archaeology Trading Cards were inspired by the Theory Trading Cards, developed by David Gauntlet (2004), and published by AltaMira in June 2004 (see http://www.altamirapress.com). Following this format students are given a blank trading card, and asked to find out and include the following information:

- Name
- Date of birth
- Date of death (if relevant)
- Star sign (for fun)
- Statistics (a concise summary of their major achievements)
- Selected publications
- Strengths (of their theoretical position and attitude)
- Weaknesses (of their theoretical position and attitude)
- Special Skills (what they are best known for as an archaeologist).

Figure 3 Archaeology Trading Card: Lewis R. Binford.
The Archaeology Trading Cards are part of a popular trend, keying into wider notions of ‘fun’ that have been established through other forms of Character Trading Cards, such as the Pokemon and Digimon characters or, in the US, through the long established tradition of Sports Cards. More recently, playing cards have become a focus of military and political agency, as with the Iraqi ‘55 most wanted’ cards of Saddam Hussein’s associates, handed out to US troops in Iraq by the United States Central Command of the Bush Administration (http://www.centcom.mil/Operations/Iraqi_Freedom/55mostwanted.htm), the ‘Bush Cards’ (http://www.bushcards.com), based on 52 members of the Bush administration and their cohorts developed by three young filmmakers based in New York (Rohrlich, 2003). Building on such established ways of having ‘fun’, the Archaeology Trading Cards are a succinct way of getting students to enjoy learning and think about archaeological issues.

Role playing and seven degrees of archaeology

Role playing activities have been a significant breakthrough in many fields, but particularly in language learning (e.g. Al-Saadat and Afifi, 1997). Since role playing involves students in researching and presenting the views of another person, it can provide them with a greater understanding of their own society, as well as greater cross-cultural understanding (cf. Burges, 1992). In our teaching of Archaeological Theory and Method, we ask students to engage in extended role playing that, once initiated, lasts for the rest of the topic. Students are asked to wear a name tag to class that identifies their character and to articulate their archaeologist’s views on a range of issues as they are raised. We also ask students to bring this knowledge and the knowledge they acquire through the weekly seminars and readings to bear on a group exercise, ‘Seven Degrees of Archaeology’, in which they attempt seven different theoretical approaches to the interpretation of the same collection of artefacts. For this exercise, students are not asked to behave as their chosen archaeologist, but instead, as a group, to take on a single, fictitious (and in many ways stereotypical) character representing a particular school of thought. Core characters here include Sir Mortimer Potts, the culture historian; Professor Rep (short for Representative) Sample, the processual archaeologist; Dr Susan G. Hunter, the feminist archaeologist; and Dr Sebastian Willey, the postprocessual archaeologist (Burke and Smith, in press). Each of the characters has some form of interpersonal relationship with at least one of the others (supervisor/student, co-author, etc) and comes with enough biographical information for the students to be able to create a persona to go with their character. Working in groups students are asked to generate an interpretation that is consistent with their assigned school of thought and then to select one member of their team to present it to the class. We structure these presentations as a debate, with all of the seven characters sitting as a panel of distinguished experts, and with one of us to lead/focus the ensuing debate/discussion. At the end of the class we ask the students to vote on which presentation they thought the most convincing and then give a small prize to that group.

Benefits

Our experience shows that biographical profiles (and their three-dimensional ‘fun’ components) can be used in tertiary archaeology courses to make students engage actively with core concepts, thus increasing their understanding of the material. Preparing and presenting such profiles can provide a common experience for all students, even though the specific content of each profile is diverse. The profiles allow students to connect personally to eminent archaeologists, and to appreciate not only their particular contributions to the discipline, but also the basis for any disciplinary disputes with colleagues.

One of the best ways of assessing whether our teaching has been effective is to find out what students think of these initiatives. As the ones whose assessment was partly dependent on these exercises, they are best positioned to comment on how effective the exercises are as teaching tools. All of the manifestations of this topic were formally assessed through Student Evaluations of Teaching and the response here was
very positive (Fig. 4). The evaluative evidence presented here was collected through this process over a period of three years, from classes ranging in size from 20 to 35.

As a general observation, we have found the action figures to be the biggest success (both inside and outside of class!), as they capture the students’ imaginations and provide them with an alternative assessment format to the traditional essay or tutorial paper. It also allows them to be as creative as they wish:

*The archaeological profile was a good way to ease back into studying after a long holiday. The allocation of an archaeologist to focus on and artistically represent created an identification and a real interest with that person. I was focused not only on what her archaeological profile was, but how she would wish to be represented, and whether my action figure adequately reflected her personality and ideology (such responsibility for one who is made of plastic!) (Leanne Taylor, ARCH 3301 student, 2003).*

*I really liked the whole presentation/paper/action figure/card profile assignment … For me, the action figures also work as a good visual tool for remembering who the different archaeologists are, since I have never heard of most of them (Christopher Wlach, ANTH V3820x student, 2004).*

Other opinions generated similar feedback on ‘Seven Degrees of Archaeology’:

*… a fun exercise and let us get into the mindset of a particular “type” of archaeologist. … the hardest part was choosing who was going to speak and trying to think in a completely different way. The task was a great end to the semester as it gave us all a chance to relax and have a bit of fun, much like the action figures did at the start of the semester. (Natasha Paling, ARCH 3301 student, 2003).*

**Limitations**

While these elements certainly introduced fun into the topic, they were not without their own problems. The main problem was one that any teacher would be familiar with: the enormous variation in student effort and therefore in the results achieved in any of these assignments. For instance we found that some of the archaeological profiles tended to be very literal biographies that avoided engaging with the more difficult personal questions about a character which required students to read between the lines. This meant that some students never really came to grips with what kind of archaeologist their character was and therefore what kind of opinions they were likely to have on any given topic.

The Seven Degrees of Archaeology exercise certainly generated much discussion, but also tended to put students on the spot when it came to delivering opinions. As an exercise which we have now run over several years of classes, the main lesson we’ve learned is that it requires much more time than we originally envisaged, and is consequently a component which we now run across more than one teaching session. Surprisingly, while we expected (and hoped) that the students would criticise the stereotypical nature of some of the Seven Degrees characters, this has yet to eventuate; perhaps a pointer that there is much more to learn about archaeological theory and method than a single topic can convey.

Apart from this, there are a number of specific obstacles associated with active learning, including a possible increase in preparation time, limited class time and its usefulness for a large class. Boswell and Ellison (1991), however, suggest that perhaps the single greatest barrier of all is the fact that the teacher’s efforts to employ active learning involve risk; risk that students will not participate, use higher-order thinking, or learn sufficient content, or that the lecturer will lack necessary skills or be criticized for teaching in unconventional ways. For us there has been no increase in preparation time, once the
topic had been mapped out. We deal with the limited class time through making certain that we set aside a portion of the class for our own mini-lecture to draw together key points and clarify important issues. In terms of student numbers, we have found that our format can be effective in classes of up to 35 students, although it is easier to run when student numbers are lower than this. In terms of risk, we have found that students will participate once they understand that this is expected (and allowed), although the level of participation and engagement can be uneven. For some students, however, the exercises can be confrontational (especially the action figure for some young men, although this has been ameliorated by reclassifying it from a ‘doll’ to an ‘action figure’), and those students do not get as much from the classes as they could. To a certain extent, this is taken into account in the assessment, in that the presentation involves three parts (verbal presentation, action figure and written biography). Students who may not achieve as well in one part have the opportunity to do well in the others. In terms of the risks we run by teaching in a non-traditional format, this is lowered for each of us through teaching the topic collaboratively. Furthermore, far from being criticised for unorthodox teaching methods, we have found that student participation in this class often proceeds by word of mouth and can actually increase after the first week.

Discussion

The use and abuse of theory has always been one of the most heated areas of debate in archaeology. For most students, however, ‘theory’ is a frightening and difficult concept, even though it underlies everything that archaeologists do. The main problem for teachers of archaeological theory and method is that, while this area is full of ‘hot’ debate and dynamic personalities, it is also one with which students are reluctant to engage. We maintain that active learning exercises are an excellent supplement to the formal lecture format, and can be greatly effective in terms of generating excitement for theoretical issues. Our experience is that by taking on the persona of a specific archaeologist and examining ‘their’ archaeologist in different ways, students can come to a relatively deep understanding of that person’s theoretical, methodological and professional perspectives. Furthermore, because they are not tied to disciplinary-specific methods or even particular bodies of theory, the processes outlined here could easily be transferred to other disciplines.

While teachers have serious concepts to communicate, this doesn’t mean that teaching archaeology can’t be enjoyable. In fact, we would argue that as students have more ‘fun’ they become more motivated, engage more effectively with the material and increase their learning. Having fun is also an effective way of maintaining the interest of the teacher. Using a range of interactive instructional strategies based around the theme of ‘becoming’ a real archaeologist, it is possible for students to become aware of the limited and provisional nature of disciplinary knowledge, facilitate different styles of learning, provide some sense of the panorama of the discipline—and, most importantly, have fun.

References

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Notes
1 Mortimer Wheeler, Lewis Binford and Ian were chosen as models for this topic as they are all interesting people, as well as being renowned and successful archaeologists whom students may wish to emulate.
2 In the following section, we identify the student who gave the response when possible (i.e. when their responses are to the evaluations we issued ourselves) and these are published with the consent of the students concerned. However, we have been unable to do this when the responses derive from University administered Student Evaluations of Teaching in which the responses are anonymous.

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