The Draw-an-Archaeologist Test

A Good Way to Get the Ball Rolling

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Abstract. The Draw-an-Archaeologist Test (DART) is an easy way to elicit students' conceptions about archaeology and can be adapted to other subject matter. When implemented as the first activity of an archaeology unit, it provides a starting point for introducing archaeology and addressing students' misconceptions about it. In this drawing activity, students are asked to describe not only what archaeologists do, but who they are in terms of gender and ethnicities. This activity can be used to generate a discussion on equity and to access differences between genders and ethnicities, which fulfills one of the national science education standards for the history and nature of science.

Key words: archaeology, conceptions, gender, ethnicity, science, Draw-an-Archaeologist test

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All students enter the classroom with some sort of archaeological knowledge. Whether that knowledge is the result of family vacations to archaeological sites or from watching television, they all have some idea of what they think archaeology is and what archaeologists do. The Draw-an-Archaeologist Test (DART) is a way to easily elicit students' conceptions of archaeology. The DART (Dixon 2000, 2001a,b; Judge 1988) was based on the Draw-a-Scientist Test (DAST) (Mead and Métraux 1957; Chambers 1983; Schibeci 1986; Mason et al. 1991; Boylan et al. 1992; Rahm and Charbonneau 1997), which was based on the Draw-a-Man Test created by Florence Goodenough (1926). I based the DART on these previous studies because they were relatively simple and generated much information on students' conceptions. I have used the DART to discover students' ideas of archeology in multiple settings, including museum- and university-based introductory archaeology courses. My experiences with the DART in those settings will serve as the research base for this article.

When I developed and implemented the DART in the summer of 2000, I was unaware of any other studies in

which researchers asked students to draw an archaeologist. However, I later discovered that in the 1980s Christopher Judge used a similar drawing exercise as the first activity of a summer archaeological program. In the activity he conducted, students were asked to draw an archaeologist "doing what they thought an archaeologist did and then to spell and define archaeology" (Judge 1988, 50). Students were asked to complete the assignment as if it were a test so that they would not bias each other (Judge 1998).

Materials

- Drawing paper of any type (preferably 8.5 x 11 in. or larger; 1 for each student/pair)
- Writing paper (can be drawing paper as well—whatever you have on hand)
- Pens, pencils, crayons, markers, etc. for each student

Methods

The procedure for the DART is fairly straightforward. Students can either work in pairs or individually, depending on time and materials. I would not recommend using groups of more than two, because a group may have a harder time reaching a consensus on what they think an archeologist looks like. Ask each student/pair to draw what he or she thinks an archaeologist looks like, including any associated tools, artifacts, clothing, etc. Some students might resist drawing at first but explain to them that it is not a contest and that stick figures are acceptable. When they finish drawing their archaeologist(s)—some will draw more than one on a page, which is okay—ask them to write a paragraph or short story about their archaeologist(s) on a separate sheet of paper. Ask them to describe what an archaeologist does and what is going on in their picture. Ask students to give explicit detail about their particular archaeologist (ethnicity, age, sex, etc.).

When students/pairs are finished with both their drawings and their descriptions, ask them to present their archaeologist(s) to the class. Students will give a myriad of descriptions. Do not be surprised by any drawings you receive. Most students will draw an archaeologist in the field, usually with a shovel or a pick axe. Some students may draw aliens, robots, and monsters instead of humans. These beings are perfectly acceptable; however, you might point out that there are no *known* monster or alien archaeologists. Some students will draw archaeologists doing "nonarchaeological" things such as dancing or cooking dinner. This is a good place to remind them that archaeologists are people, too.

Make sure you take notes (mentally or physically) as they are talking so you can use the information to frame the introductory discussion. Be particularly mindful of the number of minority archaeologists and the ratio of men to women depicted in the drawings. This feedback will allow you to address the issues of gender and ethnic equity and access in science. This is an important point that we will come back to further in our discussion. Another thing to note is the number of dinosaur and Indiana Jones elements present in the drawings (whips, fedora hats, chalices, bones, etc.) (see Figure 1 and 3).

These drawings will allow you to address misconceptions students have about archaeologists and what they do. To clear up misconceptions, point out the following:

- Paleontologists study dinosaurs not archaeologists.
- Professional archaeologists do not get to keep the artifacts they find.
- Professional archaeologists are concerned with preserving the archaeological record, not making a profit on it.

Although the DART can be used any time during your discussion, it works best as the opening activity of your archaeology unit because it gives you a common place to start your discussion of what archaeology is and what archaeologists do. The DART can be used as an in-class assignment or given as homework. As an in-class assignment, it will take at least 30–45 minutes to complete from drawing to discussion. You can lengthen the discussion according to class interest.

Figure 1. A familiar image and stereotype of archaeology—Indiana Jones—drawn by a student from the Houston Museum of Natural Science.

If the DART is given as homework, the methodology is the same except the drawing and writing are both done before class, and the responsibility for materials is on the student, not the teacher. In this instance, the in-class time can range from 20–45 minutes, depending on the length of presentations and discussion.

The DART can also be used as a concluding activity for your archaeology unit as well. It is a good way to compare student conceptions from the beginning of the unit to the end. If you intend to use the DART both at the beginning and the end of the unit, then you will need four pieces of drawing/writing paper for each student/pair. Otherwise, the methodology is the same.

Discussion

I used the DART to elicit student conceptions in two settings over three courses. It was first implemented during the summer of 2000 in the Houston Museum of Natural Science (HMNS) summer course *Archeology.com*. During that time, I was a co-teacher of an introduction-to-archaeology class for 10-, 11-, and 12-year olds held at the museum. Classes were 1-week long and spanned the entire month of June. The main objective of the course was to introduce students to archaeology through a variety of activities, including flintknapping, excavation, data analysis, research, and preservation. I administered the DART on the first day of each week as the introductory activity. Students were given blank pieces of paper and crayons or markers and asked to draw an archaeologist. Students were not given any other instructions. The three archaeologists who taught the class, myself included, were not allowed to comment on or give advice about the drawings. After the students finished their drawings, I held up several of them and asked students to explain to the class what was going on in their picture. After the students explained their drawings, I led them in a discussion on the topic "What is archaeology?"

The second time I administered the DART was to college-aged students in my introductory archaeology discussion sections at the University of California, Santa Barbara (UCSB) during winter quarter 2001. The discussion sections were part of a larger course at the university, *Anthropology 3: Introductory Archaeology*. Students were asked to draw an archaeologist and then write about his or her life. The following week, I asked them to stand in front of the class and describe their archaeologist.

There were several differences between the initial HMNS implementation of the DART and the UCSB one. First, the methodology was different between the two sites. The college students were asked not only to draw an archaeologist but also to write a story about their archaeologist as well. Also at UCSB, the DART was assigned as an extra-credit homework assignment during week 8 of a 10-week quarter. Instead of using it as a way to introduce archaeology, I used the DART as a wrap-up activity to gauge students' conceptions of archaeology at the end of an introductory course.

I changed the methodology between the two sites to gain better understanding of students' conceptions of archaeology. Having the students describe their archaeologists in written form allowed them a voice in my analysis. With the HMNS students, I had to extrapolate their conceptions from their drawings. With the UCSB students, I was able to use their own words to describe their conceptions.

The third time I used the DART was during the summer of 2001, again at HMNS, as part of *Vikings.com*, a course on Viking archaeology. The student population comprised 9-, 10-, 11-, and 12-year olds from the Houston area. The classes were 1 week long and spanned 5 weeks across July and August. They were held in conjunction with the Smithsonian traveling Viking exhibit so students could view Viking artifacts as they participated in the course. The main objective of the course was to introduce students to Viking culture through archaeology. As the course was technically about Vikings, the DART was not an appropriate opening activity. Instead, I used the same idea and methodology as the DART and asked students to draw a Viking. I used the drawings to frame our introductory discussion of the Norse and to combat some commonly held misconceptions about them.

I am an archaeologist and not a Norse scholar, so on day two I brought archaeology to the forefront of the course by administering the DART. Students were asked to draw what they thought an archaeologist looked like and to write a short description of their archaeologist. I then asked them to describe what was going on in their pictures to the rest of the class. After the students finished talking, I used the DART to frame the introduction to archaeology.

I administered the DART differently in all 3 settings. That was because each classroom setting was different. Time was a major factor in the museum courses. I had students only 4 hours a day for 5 days. That's only 20 hours a week. I could not devote the class time needed to administer the DART twice in one week. In the case of *Vikings.com*, I barely had time to administer it once. In both museum courses, it would have been easier to assign the DART as a homework assignment, but that was not feasible because they were noncredit, summer, "fun" courses. The university setting was a little different because it was a "traditional" classroom setting where grades were assessed and credit was given. One of the nice things about DART is that it fosters discussion no matter when it is given. Although I have not done so yet, I would prefer to use the DART both at the beginning and the end of class as an assessment tool, but it is flexible and can be adapted to fit any classroom situation.

Findings

When discussing how to use the DART in your classroom I mentioned the importance of making mental notes about

students' drawings, especially concerning the number of female and minority archaeologists (see Figure 2). When analyzing the DART, I noticed the low number of female (34%) and minority (2%) archaeologists (see Table 1). Several minority students drew European-looking archaeologists even though their teacher (myself) was a minority female archaeologist. It convinced me that minority students did not see archaeology as a viable profession for them. I discussed this with a colleague, and he suggested that maybe the low numbers actually reflected archaeology as a discipline. So I decided to test that hypothesis.

In 1994, the Society for American Archaeology (SAA) commissioned a census of its members to find out just who the "American Archaeologists" were (Zeder 1997). Of the archaeologists who responded, Zeder (1997, 9) found that 64% were men and 36% were women (see Table 1). She also found that 98% of the respondents were classified as being of European ancestry. Of the 1,644 archaeologists surveyed, only 2% were of non-European ancestry—and that number was rounded up. In this sample, the classification "non-European" encompassed African-American, Asian, Hispanic, and Native American archaeologists (see Table 2).

So the DART results, although personally disturbing for me, were consistent with the ethnic and gender make-up of the archaeological profession. This tells me that we as teachers need to do a better job of making science accessible for all students—regardless of their gender or ethnicity. Addressing this issue meets one of the national science education standards for the history and nature of science (National Research Council, 1996). According to this standard, all students need to understand that science is a human endeavor engaged in by "women and men of various social and ethnic backgrounds" (NRC 1996, 170). The DART is a good starting point to begin addressing stereotypes and the human nature of science as a whole. Make sure to emphasize to your students that science is for everyone, and that anyone can "do" science if he/she wants to.

Conclusions

The DART is a great tool for introducing your students to archaeology. The feedback from this activity will help you determine the archaeological knowledge your students are bringing into the classroom. Often, students come into the

Figure 2. The only minority female archaeologist drawn in the entire sample. Perhaps this archaeologist was modeled after the instructor of the course.

Table 1. Comparison of Percentage of Demographic Characteristics Between DART Drawings and Professional Archaeologists

Characteristic	DART, %	Professional archaeologists, %
Male	64	64
Female	34	36
Non-gender specific	2[a]	0
European	94	98
Non-European	2	2
Other	4[b]	0

Note. DART = Draw-An-Archaeologist Test.
[a]In the DART there were images that could not be assigned a gender. [b]In the DART there were images that could not be assigned an ethnicity.

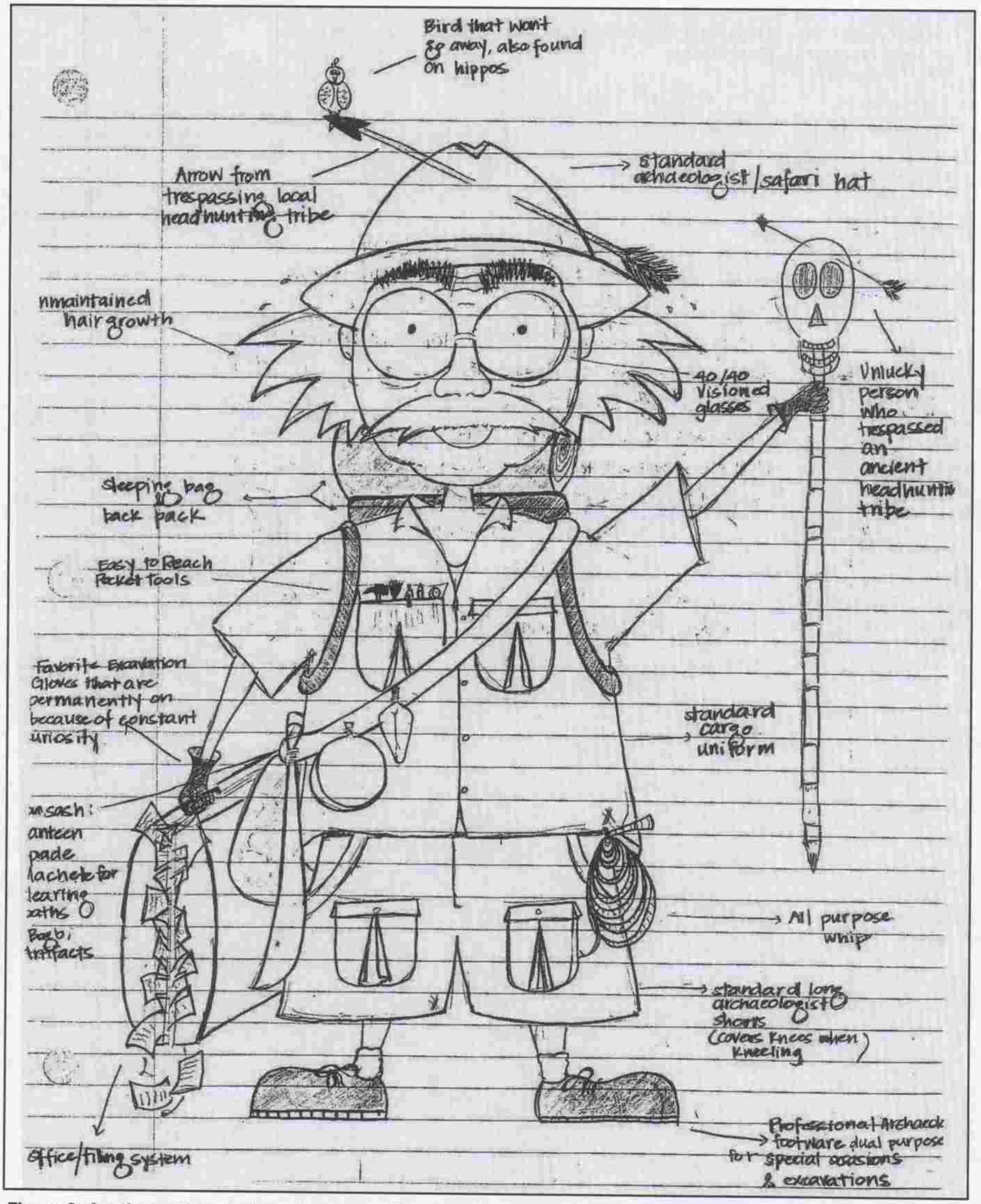

Figure 3. Another archaeological stereotype—the crazed scientist with a pith helment, bull whip, cargo pants, and machete.

Table 2. Breakdown of Non-European Professional Archaeologists by Ethnic Group (*N* = 1,644)

Ethnicity	Frequency	%
Hispanic	15	.9124
Native American	10	.60827
Asian	4	.2433
African American	2	.12165
Total	31	1.88564

classroom with misconceptions about what archaeologists do, and the DART gives you a starting place to address those misconceptions in a creative and nonthreatening manner. The DART will also allow you to address issues of gender and ethnic equity in archaeology and science. Who knows what budding scientists you may have in your classroom? The idea behind the DART is not a new one. However, it can be adapted to fit numerous situations as evidenced by *Vikings.com*. I encourage you to use the DART with your archaeology unit and to adapt it to fit other needs in your classroom.

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