Historical Evidence: Archaeological Practice as a Pedagogical Tool for Historical Education in Singapore

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Abstract

History education in Singapore has seen much progress following the shift away from Rafflesian history to studies on pre-1819 Singapore with new publications and exhibitions. However, many educators still face difficulties in delivering this knowledge to their students. This article looks at how history education in Singapore can be enhanced by using an amalgamation of archaeological methods, historical evidence, and an inquiry-based approach as a pedagogical practice to teaching 14th-century Singapore.

Introduction

Archaeological research has provided much insight into the study of Singapore’s pre-colonial past. In 2007, 14th-century Singapore was given some coverage in secondary school textbooks (Division 2007: 2-19). In 2014, the CPDD launched a new history textbook with an increase from one to two chapters about ancient Singapore (Division, 2014: 2-91). It had been seven years since the inclusion of new materials. Students were, however, not given many opportunities to explore Singapore’s 14th-century past as educators were equally unsure how they should teach this particular subject.

An informal check conducted among schools revealed that teachers tend to rush through or skip the pre-colonial section of the textbook as it is deemed unimportant or irrelevant for assessment. Another difficulty that educators face lay in the lack of necessary knowledge required for the study of archaeology and in turn, transferring this knowledge to our students. The instructors running teacher-training courses at the National Institute of Education (NIE) may also encounter difficulties coaching student teachers on pedagogical approaches to teaching pre-colonial Singapore due their own lack of familiarity with actual archaeology, given that archaeological work is not a common area of academic or educational expertise in history education.

I have been trying to develop and incorporate archaeology into the teaching of 14th-century Singapore, Chapter 1 of Singapore: The Making of a Nation-State, 1360-1975, since I was an undergraduate student. Together with Associate Professor Goh Geok Yian, I started out with developing a workbook for secondary school teachers to guide educators in teaching archaeology in the classroom. The workbook contains relevant information on archaeology and its importance as well as some lesson ideas that teachers can employ in classrooms. I was then given the opportunity to teach history during my internship stint at a secondary school where I improved on my workbook and developed a “Teachers’ Guide to Archaeology” based on my experiences in an actual classroom setting.
An assignment for my Postgraduate Diploma in Education (PGDE) fieldtrip course further allowed me to refine this guidebook, which I subsequently put into practice at Hwa Chong Institution (High School Section). The archeology-based lesson strategy then developed into a full-blown inquiry lesson for my students whereby the study of historical artefacts was used to teach students how Singapore’s early past was constructed. Using my past and present experiences, I hope to enhance the way history is taught in schools by developing a pedagogical approach that uses an amalgamation of archaeological method, historical evidence, and an inquiry approach to teaching 14th-century Singapore.

**Context**

In the teaching and learning of history, educators are often trapped by syllabus requirements and high stakes examinations. Consequently, teaching tends to revolve around direct instruction and asking questions about past events to acquire as much content as possible within a stipulated time. This leads to a misconstrued perception of the study of history as a discipline comprising memorization and regurgitation of facts and figures. More than simply committing information to memory, however, the study of history involves investigating the past through the selection and analysis of historical evidence – in context – to understand how historical interpretations or claims are systematically derived. Developing students’ understanding of the nature of historical evidence, a concept fundamental to a historian’s craft, will help them to pose relevant questions and deepen their understanding about the nature of historical knowledge.

I was concerned that the tentative and interpretive nature of historical study surrounding Singapore’s ancient past may not be easily appreciated by teachers who are unfamiliar with the craft and Secondary 1 students taking History for the first time. If told simply as a “story”, students will likely conceive the narrative about Singapore’s origins – as Temasek, its development as a seaport in the 14th century, and its subsequent decline right until the time it was “founded” by Raffles – as given historical “facts” but without understanding how these “facts” came into being, the grounds upon which the historical claims were made, or the evidence used to support the claims.

**Aims/Objectives**

First, to equip teachers with the necessary knowledge and pedagogical tools to approach the teaching and learning of pre-Rafflesian Singapore in a more effective manner. Second, to deconstruct myths of history as a “memory-work” discipline and develop students’ understanding of how historians construct knowledge about the past.

In teaching history to the Secondary 1 students, an important focus of our instruction is to acquaint them with the ways historians construct knowledge about the past. We would like students to consider initial questions that get at the evidentiary basis of historical knowledge: What do we know about the past? How do we know what we know? Why is it that we can’t know more about aspects of our early past? Addressing these questions opens up the possibility of introducing them to the nature of evidential work in history. As part of developing their understandings about historical evidence, I wanted my students to become aware that historians use different sources of evidence (written documents, films, buildings, artefacts, etc.) to help them to reconstruct past events. I also wanted them to recognize that
historical evidence is never complete and that its survival is often a matter of chance or discovery. This is especially so if we were to consider the existing – but limited and fragmented – sources of evidence that can tell us something about Singapore’s early past.

How does the study of archaeology come into play? Archaeology is the study of human history through the excavation of sites and the subsequent analysis of the artefacts found. Archaeologists use artefacts and other material remains as sources of evidence – to prove their hypotheses, to uncover forgotten civilizations and their environments, and to reconstruct the ways of life of human societies in the distant past. In many excavations, pottery is one of the most common form of artefacts found. Archaeologists would study the composition of clay used to make the pots. They would examine how these pots were produced and recreate them as a means of learning about manufacturing techniques used in the past. Decorations found on some of the pots can provide clues as to how people had lived and the kinds of communities (e.g. elite or commoners) who were likely to have used the pottery. Much interpretive work would have to be done in order for archaeologists to construct explanations about these past societies.

Not many students know much about Singapore’s pre-colonial history. The insufficient written records do not allow them to piece together a satisfactory narrative about Singapore’s early past. I found that archaeological methods, however, can be used as a pedagogical tool to help students construct knowledge about the past and develop deeper understanding about the nature of historical evidence. Studying historical artefacts provide students with the opportunities to recognize the importance of archaeological work, and how archaeology has made important contributions to what we know about our early past. For educators who are keen to develop students’ evidential understandings beyond the typical use of textual or pictorial sources, studying history through historical artefacts provides an interesting instructional alternative. They will find that the skills involved in examining historical artefacts are critical for students carrying out their Historical Investigation (HI) projects and research activities related to Singapore’s early history.

The incorporation of archaeology in the study of history will also allow students to learn history in a more interactive and engaging manner (Maloy and Laroche, 2010: 46-61). Due to the nature of archaeology as being centred on artefacts, it lends itself to a more hands-on type of learning environment which is employed by many schools in other nations (Larsen 2014; Harper 2012). When pursued as a pedagogical strategy in Singapore schools, such an approach may reverse the misconception that history is a boring and dead subject, and make history come alive. Students will have ample opportunities to imagine a past that is foreign to them, to ask questions about existing and forgotten pasts and to put forward possible interpretations based on a reasoned judgment of the evidence. Archaeology also teaches important thinking and observation skills, and trains students to make deductions and analyses that require the demonstration of knowledge and understanding of different historical periods. These skills are transferable when students start to handle written sources: specifically, they will be more knowledgeable and better-equipped when responding to inference-type questions in their Source-based Case Study (SBCS). More importantly, the incorporation of
archaeology would allow for the study of distant periods like 14th-century Singapore, and offer potential methods to guide students when drawing connections to the present-day context. A teaching strategy using archaeological methodology can promote active learning and allows learners to develop understandings as they engage in the meaning-making process of interpreting and constructing history.

**Background**

History education had served as the main driving force behind nation building when Southeast Asian colonies attained their independent statuses (Harper, 2011: 193-212). Reforms in the education system and changes to the history textbooks were largely intertwined with the evolving goals of governments and the nations’ political reforms as argued by Edward Vickers and Alisa Jones (2005). Political elites utilized school textbooks, coupled with public education put forward by museums and memorials, to tell stories that the state expects its people to be familiar with. These stories serve to cultivate a sense of belonging citizens feel for their country.

How did history education in Singapore develop since the nation’s independence in 1965? What were some of the changes experienced? Gopinathan (2012: 65-70) argues that Singapore’s demanding social-economic state of affairs and changes in the regional and global situations shaped educational reforms during the early years of independence. National education was identified as the most important area to ensure the economic survival of the nation, and the government emphasized the teaching of industrial and technical subjects like Mathematics and the Sciences (Goh and Gopinathan, 2005: 203-225). History became easily displaced in this kind of system (Lau, 1992: 46-68). History occupied such an unimportant place in Singapore’s school programme to the extent that it was almost non-existent. History education only assumed a central role in the development of Singapore in the late 1970s when the country’s economy started to mature and state agenda turned to focus on fostering loyalty and promoting nationalism among the new generation of youths (Goh and Gopinathan, 2006).

Publications on the history of Singapore also expanded especially with further developments in archaeological study of the nation’s past. Low and Miksic traced the developments of a 14th-century kingdom in Singapore using various primary and secondary sources, such as the Sejarah Melayu, and analysis of artefacts found during archaeological excavations (Low, 2004: 14-40; Miksic, 2004: 41-54; Miksic, 1985). Kwa, Heng and Tan (2009) co-produced another work by locating “Singapore's concerns as an aspiring global city...in earlier cycles of globalization”. With the publication of The Silk Road of the Sea 1300-1800, Miksic (2013) combines technical descriptions of the way archaeological research was conducted with different inferences drawn from the data. Archaeology is neatly incorporated into the study of history in the above works.

The history textbooks for Singapore’s secondary schools had also been evolving over the years, with the latest textbook beginning the history of Singapore 500 years earlier (see Peterson, 2014). The new curriculum crafted an official narrative that covers a period from 1300-1600, portraying Singapore as a thriving multinational trading hub during this period (Division, 2014). As more coverage is being given to the study of the ancient history of Singapore, the incorporation of archaeological materials into the teaching practice workbook becomes even more...
necessary to allow teachers to engage students via the use of artefacts in learning what seems to be a “lacklustre and uninteresting” history.

**Teaching resources and approaches**

Teachers can utilize the CPDD-supplied source-kits to pique students’ interest when teaching Unit 1: Tracing Singapore’s Origins. As they work with original artefacts, students will learn how to ask questions about events, issues and developments; examine primary sources and interpret evidence to support their claims; demonstrate knowledge and understanding of history as a construct; and engage in imaginative reconstruction of key characteristics of the period they are about to study (i.e. 14th C) to draw connections with present-day context.

There are three types of artefacts within the source kit, namely porcelain, stoneware, and earthenware taken from the St. Andrew’s Cathedral site (see Figure 1 for examples of each type). These are representative of the materials found in 14th-15th-century Singapore. Students can easily relate to these materials as the artefacts are also shown in the new edition history textbook (Division, 2014: 34-35; 76-77).

**Figure 1: From Left to Right Blue and White Porcelain, Mercury Jars, Earthenware**

The lesson is designed to adhere to historical inquiry processes, and is modelled after Gorman’s Structured Enquiry Approach (Gorman, 1998). The main activity involves asking questions and the construction of knowledge in the context of a given problem. Within this structure, students will be encouraged to ask questions and identify areas of interpretation; be engaged in the act of questioning and examining sources to extract relevant information that can be used as evidence in light of the given question; and motivated to construct knowledge and develop interpretations in response to the inquiry question. The approach promotes active learning and allows learners to develop understandings throughout the meaning-making process.

The main inquiry question that frames the lesson is: “How do we know what we know of the past?” This question is intended to not only challenge students’ preconceived notions and/or misconceptions about history, but also to develop their understanding of the past and how knowledge about the past is constructed. This question will be unpacked through three sub-inquiry questions (see Figure 2) that accompany the focus of each lesson:

a) **Gathering Evidence:** How do historians gather sources and use them as evidence?

b) **Interpreting Historical Objects:** How do archaeologists determine what an object is and what are its functions?

c) **Drawing Conclusions:** What kind of conclusions can historians draw from artefacts or sources?

Working collaboratively, students will examine pottery sherds, replicas and picture cards to negotiate ideas and develop interpretations. The use of artefacts will help generate interest and discussion in class. In the course of investigating the question, they will work critically with a variety of sources and be in a position to draw conclusions that are supported by evidence.
Figure 2: Inquiry Process Chart

Lesson 1 – gathering evidence

Students were divided into groups of four or five individuals and provided with a set of three to four artefacts from the source-kit (supplemented with picture cards, see Figures 3 and 4) and an artefact recording sheet. They were tasked to sort the artefacts into three main categories, Porcelain, Stoneware, and Earthenware and to fill out the recording sheet based on their observations (see Figures 5 and 6). They were also given a conceptual guide on how to sort and differentiate the artefacts (see Figure 7) as it usually takes an expert to distinguish the pieces. Even with this basic guide, the method is not foolproof.

Lesson 2: How do archaeologists determine what the object is and its functions?

Lesson 3: What kind of conclusions can historians draw from artefacts?

Figure 3: From Left to Right Base of Mercury Jars, Spouts, and Lugs

Figure 4: From Left to Right Radiating Sun Design on a Fine Paste Earthenware sherd, and Paddle-Marked Earthenware bearing parallel lines motifs
**Figure 5: Artefact Recording Sheet (Page 1)**

<table>
<thead>
<tr>
<th>Material</th>
<th>No. of Pieces</th>
<th>Remarks (e.g., any special features?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porcelain</td>
<td>5</td>
<td>Delicate blue pattern, lighter under light, handles and bases</td>
</tr>
<tr>
<td>Stoneware</td>
<td>2</td>
<td>Unique, designed for ornamentation, handles and bases</td>
</tr>
<tr>
<td>Earthenware</td>
<td>3</td>
<td>Interesting and handle-like object on earthware — simply made, yet sophisticated — use in everyday purposes.</td>
</tr>
</tbody>
</table>

**Figure 6: Artefact Recording Sheet (Page 2)**

<table>
<thead>
<tr>
<th>Material</th>
<th>No. of Pieces</th>
<th>Vessel Part</th>
<th>Remarks (e.g., Description of special features)</th>
<th>Questions I have about the artefact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porcelain White</td>
<td>1</td>
<td>Rim/body base</td>
<td>There is a different shade of colour on the porcelain base</td>
<td>I wonder how people of old used these artefacts.</td>
</tr>
<tr>
<td>Green</td>
<td>2</td>
<td>Rim/mid body</td>
<td>The shade of colour, shades on the artefact, make them glitter under light, very unique.</td>
<td>I wonder how expensive were these artefacts; in the photos, did these people use these objects differently in the past?</td>
</tr>
<tr>
<td>Blue and White</td>
<td>4</td>
<td>Rim/middle body</td>
<td>There are blue-coloured patterns on the body which are intricately drawn and resemble things in nature.</td>
<td>Old artefacts like these with different designs vary in case?</td>
</tr>
</tbody>
</table>
In the first lesson, students became junior historians by gathering sources of information from artefacts and asking questions (5W1H model) that would help them to construct knowledge of the past. There were many interesting questions posed such as “what was the object used for?”, “how was it crafted?” and “what were the reasons behind the object’s colour and complex design?” These were important questions that would help them in the next stage when they moved on to examine the artefacts in detail. Some of them were already forming general inferences about Singapore’s early past by responding to the questions their peers had raised. Others started to make comparisons between pieces and making astute observations about the artefacts’ similarities and differences.

**Lesson 2 – interpreting historical objects**

In this lesson, students were given an individual task to reconstruct a historical object by closely examining the artefact at hand. As the pieces in the source-kit were limited and small in size, a picture card (see Figure 8) was used in this lesson. As students attempted to recreate the piece, they began to make interpretations about the data they collected.

**Figure 8: Historical object used for reconstruction**
Many students were able to make clear observations about the object by pointing out the curved feature in the picture and how it had a base that allowed the artefact to stand. Some even went further by raising questions about the “ring” present in the artefact and how it was formed. Many of them exercised their creativity in this activity and made intelligent guesses about the object through their illustrations (see Figures 9 and 10).

Figure 9: Student A’s drawing. His interpretation of the sherd was a basin.

![Figure 9: Student A’s drawing.](image)

Figure 10: Student B’s drawing. His interpretation of the sherd was a bowl.

![Figure 10: Student B’s drawing.](image)

This lesson taught students how to extract certain pieces of information to help them make good guesses about the past. Students were not corrected if the objects they drew were inaccurate as I wanted them to go through the process of logical deduction based on what they observed. Students were given guidance only if they made illogical interpretations of what the object could be. At the end of the lesson, I revealed what the complete object actually looked like. Throughout this process, students also gained a valuable skill that historians employ – inference, which would be useful when they start to work on SBCS questions.

**Lesson 3 – drawing conclusions**

In the final lesson, students were tasked to form conclusions about Singapore’s early past based on the various inferences and interpretations they made in Lessons 1 and 2. The inquiry question they had to answer was “What was life like in 14th-century Singapore?”

Students were quick and eager to share their observations and group work by presenting them in class. Some concluded that Singapore was a trading hub and had various trading connections with other countries due to the presence of Chinese porcelain while others claimed that Singapore was technologically advanced as the people were able to design and imprint intricate patterns on the artefacts. These were some of the important observations and inferences they made which enriched their learning about 14th-century Singapore.

After the vibrant discussion, students were tasked to transfer these skills to written sources so that the teacher could check their understanding and assess what they have learnt. Many students were able to complete the worksheet without much guidance and also were able to support their answers with evidence from the source (see Figures 11 and 12). These written sources were found in their textbook (pages 27 to 36).
Figure 11. Student A’s work on written sources.

```latex
\begin{center}
\includegraphics[width=\textwidth]{student_work.png}
\end{center}
```
### Figure 12: Student B’s work on written sources.

<table>
<thead>
<tr>
<th>Source 6</th>
<th>1. What details can you observe from the source?</th>
<th>2. What questions can you ask about the source?</th>
<th>3. Background information of the source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fort Canning was covered with the remains of buildings, some composed of baked brick of good quality.</td>
<td><em>Who built these buildings?</em></td>
<td><em>An entry from John Crawfurd’s journal.</em></td>
<td></td>
</tr>
<tr>
<td>2. There were Chinese and native pottery discoveries on the site.</td>
<td><em>When were these pottery made?</em></td>
<td><em>Why were they built?</em></td>
<td></td>
</tr>
<tr>
<td>3. In the same situation, Chinese boss coins of the 18th and 19th centuries were found.</td>
<td><em>What purposes did they serve?</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**4. What can you infer about early Singapore from the source?**

**I can infer that Singapore before 1819 was ...**

- I can infer that Singapore before 1819 was... 
  - The port not only was already had majestic and expensive buildings which were most likely built for prominent and well-known rulers and leaders of a few hundred years back. I can infer that foreigners frequently made stops at Singapore then.

**5. What evidence do you have to back up your inference?**

**I know this because...**

1. Some of the baked brick dug up at Fort Canning was of good quality. This means that extra money was used to construct these buildings.
2. Furthermore, both Chinese and native artefacts were excavated at Fort Canning. This means that there was active trading of goods between the locals and Chinese traders. Therefore, there was money to build nice buildings.

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*S1 HI 2018/ OH YJ*
Reflecting on my practice

Since 2012, there has been a shift in history instruction towards a more inquiry-based approach and one that focuses on the development of students’ historical understanding through concept-based learning (MOE, 2012). As such, this activity was designed to allow students to appreciate the historians’ work using archaeological methods and the concept of historical evidence. Having repeated this activity in two schools that had different student profiles, the activity has been revised and enhanced to enable students to handle a variety of sources, to use them for discussion and to make sound judgments and inferences about our past. This foundation or introduction to history is important as it sets the foundations for future history teaching and learning in the classroom even as these students move into the upper secondary level.

There are, however, some anticipated problems. There will not be enough sets of artefacts to be redistributed in a classroom setting. While teachers can supplement artefacts with picture cards, the activity will lose some authenticity as students may react better to the materials in Lesson 1 as opposed to the cards used in Lesson 2. These artefacts are also likely to be damaged during classroom usage and teachers would need to ensure that students handle them with extra care. Due to the complex nature of the discipline, it will take many years for our archaeologists to collect enough data before source-kits containing a full range of representative sample artefacts can be created for schools.

Another difficulty which teachers always face is how to motivate students to retain their memory as they tend to ‘unlearn’ everything taught in the classroom the moment they step out of school. It gets frustrating when upper secondary students require the history teacher to repeat a historical skill that was supposed to be learnt at the lower secondary historical level. Indeed, if I were to ask any of my students now about a particular historical skill, they may have probably forgotten that this activity was even conducted! Some might have even forgotten the basic inference skill that was taught throughout the year. The challenge had always been in the application and implementation of effective lessons that students can keep in mind. This will remain a work in progress.

Conclusion

While archaeological methodology is a useful approach in the learning of a historian’s craft, there are still obstacles to overcome. The technicality of the topic is not easily understood by those who do not practice it. As such, it remains a challenge for teachers to come up with activities to engage the students when teaching the section on pre-colonial Singapore. Teachers who are wondering how to help students develop and demonstrate their thinking about historical evidence will likely find this inquiry-approach helpful for their practice.

Acknowledgement

I was lucky to be mentored by Professor John N. Miksic as well as Associate Professor Goh Geok Yian, both distinguished archaeologists in the field, since my undergraduate days. This has put me in a better position to help further historical education in Singapore by sharing my knowledge with other educators. They have provided much guidance in helping me craft classroom pedagogies to teaching pre-colonial Singapore. Professor Goh also took time out to comment on this paper and gave me advice on how I can improve it. I also would like to thank my NIE lecturer, Dr. Suhaimi Afandi, for his guidance and invaluable support during the planning of this enquiry.
References


