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Let's *Chat* About Archaeology: Responsible and Thoughtful Use of AI Tools in Classroom, A Case Study

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ABSTRACT — This paper discusses an introductory archaeology class assignment designed to promote responsible and thoughtful use of AI in the classroom. We asked the students to take on two roles: first, as academic writers using AI tools, and second, as editors of writers' work. Our assignment encouraged students to think critically about how they frame their questions and how that framing influences the AI chatbot's responses. It also prompted them to evaluate the responses that AI gives them and raise their awareness of the legitimacy of the information AI provides. The fact-checking component also served an additional aim for archaeologists, as the quick spread of conspiracy theories online only increases the urgency for students to be trained in identifying historical and archaeological misinformation.

Overall, students' results demonstrate that this is a successful assignment. They paid close attention to the factual accuracy of the information, were observant of biased language in AI responses, and were able to critically evaluate issues with AI in academic learning and research. While this assignment can certainly be tweaked for greater effectiveness, particularly in relation to promoting better research skills, it served as a valuable exercise, not just for students to reflect on what constitutes ethical AI use in the classroom, but also for educators seeking a creative and engaging way to respond to the surge in the use of AI among students in general.

KEYWORDS — Archaeology, Pedagogy, Teaching, Generative AI, Critical Thinking.

1. INTRODUCTION AND RATIONALE

Since the release of ChatGPT in the fall of 2022, generative artificial intelligence (AI) has significantly grown in popularity in education, often marketed for its role in assisting users with gathering information, organizing thoughts, and generating ideas. Accordingly, discourses surrounding the use of AI in the classrooms have become especially pertinent as more students are gravitating towards AI tools for

assistance with assignments. While AI presents new opportunities for learning, it is also known to deliver incorrect or misleading information and undermine critical thinking, as one news headline laments, "Everyone Is Cheating Their Way Through College" (Walsh, 2025). How can university classrooms in the U.S. better prepare themselves for a time when they are welcoming a generation of incoming students whose literacy scores are at a historic low? When it comes to teaching Graeco-Roman antiquity, there is an added caution with the misuse and abuse of information, considering that various hate groups have historically and continuously exploited antiquity to promote nationalist and fascist propaganda.[1] Intertwined with this issue of the misappropriation of Graeco-Roman antiquity by white supremacist groups is the speed and ease with which pseudo-archaeology, typically heavily tied to white supremacist ideologies, gets propagated through the internet and other forms of digital media, such as podcasts, videos, social media, and online forums.[2] As Sean Rafferty observes, "Not only does the internet greatly magnify the availability of poor quality information, the interactive nature of the medium leads to the creation of 'echo chambers' that reinforce the perceived truth value of these ideas." (Rafferty, 2024, p. 18). To combat these historical and archaeological conspiracy theories in the classroom, Rafferty (2024, pp. 3-5) describes cultivating critical thinking skills among his students through teaching them how to evaluate the quality of sources and supporting evidence used within a given argument, in addition to the plausibility of the hypothesis's claims.

An assignment centered around critical thinking, therefore, not only serves to teach students how to evaluate responses derived from AI, but also how to identify this misinformation whenever and wherever they come across it, online or in the real world. Because, in the words of Heredia Chimeno (2025) in the inaugural volume of this journal, "AI is here to stay," it is more important than ever to encourage students to be mindful of their information sources and to critically evaluate the integration of AI in their academic journey. In this case study, we will share our experience with a class assignment we created to encourage responsible and thoughtful use of AI in classrooms. First, we will provide basic background information about our class and explain the motivation for designing this assignment for our syllabus. Then, we will highlight key observations from students' performance. Finally, we will discuss our conclusions and offer reflections for future AI-related teaching approaches.

[1] These appropriations are well documented by the platform *Pharos, Doing Justice to Classics*. https://pharos.vassarspaces.net/. (Accessed: 20 October 2025)

[2] On the very recent discussion pertaining to pseudo-archaeology, mainstream archaeology, and public archaeology, read Nathan J. Robinson's interview of Flint Dibble in "Why Joe Rogan Believes in Fake Archaeology" in *Current Affairs*. https://www.currentaffairs.org/news/flint-dibble. (Accessed: 29 October 2025)

2. THE ASSIGNMENT

With this backdrop of pervasive use of AI in higher education and the abovementioned concerns in mind, the authors of this paper taught the "Introduction to Classical Archaeology" (ARCH B.102) course at Bryn Mawr College in the spring semester of 2024–2025. Offered to students once every year, this course is a historical survey of the archaeology and art of Greece, Etruria, and Rome. It satisfies both the "Inquiry into the Past" and "Cross-Cultural Analysis" requirements for all bachelor's degrees at Bryn Mawr, and it also counts towards undergraduate major requirements in Archaeology, Classics, History of Art, and Museum Studies. Our class was at full capacity, with students from various backgrounds and at different stages of their educational progress. (Five first-year PhD students in Archaeology also attended the class as a requirement, though they had a different set of assignments and did not complete the assignment discussed in this case study.) The classroom thus included students ranging from those already pursuing an Archaeology degree to those in STEM fields taking the course to fulfill college-wide requirements, and from advanced students with proper experience in academic research and writing to freshmen with limited exposure to written assignments.

During syllabus planning, we discussed concerns about employing AI in the classroom and aspired to communicate its usefulness and potential drawbacks to students as part of the course's content. At Bryn Mawr College, we do not have an institutional policy on AI, and instructors are encouraged to design their own policy for their syllabi. A syllabus statement can inform students; it cannot, however, guarantee effectiveness in preventing them from using AI, nor in helping students to understand the complex issue of using AI in their academic work. Additionally, neither is it practical nor desirable to allocate time to lecture students about AI. Students at Bryn Mawr practice the Honor Code, which considers presenting or submitting AI-generated content a violation unless the instructor authorizes an assignment that allows it.[3] This may be more assuring than other universities without such an honor code system, as optimistically reported by Harper (2024), who considers that such infrastructure has already given students fewer incentives to cheat. Nevertheless, given the rise in students employing AI overall, we acknowledged that it is unavoidable to encounter a student using AI in at least some capacity, even if it does not cross the line into academic misconduct, such as generating topic ideas or providing grammar help. We deemed that AI can be useful, but it is important to have students understand the limitations of AI and what constitutes academic misconduct when it comes to AI, especially in an introductory course. In this sense, reiterating our Honor Code's emphasis on the use of AI when allowed by the instructor(s) can also offer a rather productive framework. By clearly

[3] The Honor Code is managed by Bryn Mawr's Self Government Association https://sga.blogs.brynmawr.edu/honor-board/honor-code/ (Access: 30 October 2025).

defining when and how AI tools can be used, we can motivate students to reflect on their own decision-making, evaluate the chatbot response, and critically develop a more knowledgeable approach to learning about the past.

The question then becomes: How do we translate these ongoing debates and concerns on using AI to students in the classroom? Our attempt at a solution was to design an assignment where students are encouraged to 1) think critically about how they frame their questions, and how it influences the way the AI chatbot responds, and 2) evaluate carefully the responses that AI gives them and raise their awareness to not just accept the information as true, but to identify areas where the AI gets it wrong or presents misleading information. In doing so, we intend to convey the message that they cannot always trust the responses that the AI gives and must do their own research. More importantly, by having students engage directly with the AI, we aimed to make the experience more interactive, encouraging an active learning process in which they could immediately observe the outcomes of their interactions. This approach was designed to reinforce and clarify the key concepts we wanted students to assimilate.

In the assignment "Ancient Past with Generative AI," we asked the students to take on two roles: first, as academic writers using AI tools, and second, as editors for the writers (see Appendix for our full assignment guidelines). As an academic writer, their task was to write a short scholarly encyclopedia entry on one of the ten themes the class had already covered (the Mycenaean world; the Minoan culture, the Iron Age and Lefkandi; the Greeks in Italy; the Persian Wars; the Peloponnesian Wars; the Athenian Acropolis; Greek symposium; Alexander the Great; and Roman presence in Greece). The students needed to pick an AI chatbot of their choice (such as ChatGPT or Google Gemini) and develop five questions for the AI to answer, each in 100–500 words, to help build this encyclopedia entry. We provided examples of encyclopedia entries and outlined their core elements, such as general history, sites and monuments, artistic developments, individuals, and objects. We asked students to be mindful of how they communicate with the chatbot to deliver their questions and receive the answers. Students were instructed to take at least five screenshots to document their interaction with the AI, which would show the questions they posed to the AI chatbot and its replies, while also proving that they completed the assignment. After the answers to their questions were generated, we then asked the students to imagine themselves in a more analytical capacity as editors working for the AI writer. Switching the role to editors, students were tasked with using citations and comments to explain why the information was correct, incorrect, or misleading. They were also asked to offer editorial suggestions on language organization and phrasing using the "Track Changes" mode. Finally, the students were requested to write a summary of 500–750 words explaining how they developed their questions for the AI, how they interacted with the AI, and how they went through the process of verifying and commenting on the AI responses. Students needed to include five screenshots to illustrate their summary.

3. RESULTS AND DISCUSSION

Overall, the students were attentive to checking the factuality of the information presented and noted instances where references were completely absent. In addition, students often pointed to areas where the AI could have provided additional details or examples in its responses. An analysis of the most frequently attested keywords within the assignment submissions found that the word mentioned most often by students was "accurate," being written a total of 71 times, with its related form "accuracy" appearing 17 times. The other six most repeatedly mentioned keywords are as follows: "detail," which was written 31 times, "scholarly" 35 times, "source" 28 times, "depth" 19 times, and "nuance" and "trust" 6 times. Less frequently used keywords include "verify" and "misinformation," which were used 5 times, closely followed by "bias," which appeared 4 times. Even rarer were keywords such as "overreliance," "inaccuracy," "verification," and "reliability," which all appear only once. The words "skeptical," "plagiarism," and "skepticism" do not feature at all within students' submissions (***Figure 1***). A keyword search on its own does not necessarily indicate much without contextual analysis, which is why we provide excerpts in the following paragraphs from submitted assignments, demonstrating how students have interpreted the guidelines and engaged with the core objectives of the assignment. In particular, as these keywords may suggest, common themes arose across the entire group, such as concern with the accuracy of the information, the quality of sources, the level of detail and nuance, and more general considerations regarding whether AI could be considered trustworthy.

With respect to the issue of accuracy and detail, one student, reflecting on the AI chatbot's answers to their questions on Mycenaean material culture, wrote, "Another issue I had discovered with the AI. . .was its use of blanket statements and generalizations. . .Though these statements were technically correct, having them without any explanation could easily become misleading." Another student remarked on the way AI cited information and made exaggerative statements, noting, "I don't like that AI can't directly cite sources, or that it makes broad claims that are sometimes difficult to debunk." Other critiques of the AI's responses also described them as repetitive and prone to generalization, with students often expressing a desire for greater nuance and variety, as one student commented, "I found that while it was somewhat factually accurate, it often made assumptions and did not delve deeply into many points." Another student, evaluating the utility of AI in the classroom, further stated that "in an academic context, I really don't think AI should have a place at the table. It's repetitive, unable to cite sources, vague, and at times makes concerningly broad generalizations. I can't see myself using this in the future or supporting anyone else in using it."

A smaller number of students noted the use of biased language in the presentation of information, observing, "In the answer to my second question, the

AI described Alexander's actions as 'remarkable'. . .To me, 'remarkable' feels like an opinionated word. Of course the AI cannot have an opinion, so I found this choice of language interesting." A handful of students also identified cases where the AI chatbot was presenting outdated and misleading information. One such case occurred in a student's assignment on Minoan culture, which found that the AI largely relied on scholarship by Arthur Evans and other twentieth-century scholars. The following comment by another student perhaps summarizes this issue well, "while AI can summarize historical narratives, it does not engage in the same critical discourse that historians and archaeologists do." Therefore, there is a concern that, even when AI does mention scholarly sources, it may present outdated narratives that have long been dismissed or challenged within present-day archaeological scholarship as settled fact, since it is incapable of critically evaluating scholarship on its own.

Furthermore, some students felt that the time and effort required to cautiously and extensively fact-check the AI enough to use the information it produced as research was inefficient, such as one student who wrote, "the user has no idea whether or not the software has directly copied the information word for word. I found myself triple checking the wording of my sources." While the word "plagiarism" is not mentioned, this student's discussion of how the AI can sometimes copy published work word for word is important to highlight here, as it indicates an awareness that AI can generate responses that are plagiarized. Another student also described having to conduct a significant amount of research to even begin fact-checking the AI, noting, "through this process of editing and fact-checking, I was forced to really research and learn about the history of the Acropolis in order to be able to effectively refute any mistakes."

Several students also reflected on the process of prompting the AI to produce an answer that was satisfactory in the first place. Multiple students mentioned having to rephrase their questions several times for the AI to generate a response that actually answered the questions they had in mind, and other students expressed frustration with the AI repeating material that it had already included in previous answers. For example, one student describes the process of reformulating their questions as follows: "At different points when I tried asking AI a question, it misunderstood or couldn't provide me with the answer I was looking for. This forced me to reevaluate my questions and adjust them to bring me to the results I was looking for." In this instance, the student describes not only how they noticed the AI limited the ways in which they could format their questions, but also how this adjustment step had to be repeated in different instances, interrupting their research process.

However, while students largely presented critiques of AI use, there were some instances where they could see AI serving a useful function, such as for "workshopping ideas," or "to save time, bridge intellectual dividends and process

data well," as two students wrote. One student also added, "I found AI great for summarizing information when I need a fast and digestible overview of a topic, which feels the same as googling something," which is important to consider as AI becomes increasingly integrated into search engines. In very few instances, a couple of students came away with or maintained the sense that AI could have fairly broad uses in academic and non-academic contexts, and they were not all too concerned by the current limitations of AI. It should be noted that, in these instances, these students missed key components of the assignment in their submissions, such as citations for their edits and screenshots of their conversation with the AI chatbot. Additionally, it should be mentioned that out of 33 responses, 2 were found to have used AI in the fact-checking editing procedure (we detected this by recognizing the cited publications were AI-fabricated) and in the composition of their summary, which undermined the purpose of the assignment and resulted in an automatic failure.

4. REFLECTION AND CONCLUSION

We consider this assignment a successful exercise that allows students to understand the concerns about AI applications in the classroom and academic assignments through a reflective lens. The majority of our students followed the assignment's instructions, and only a few missed some parts of the core requirement to include citations, screenshots, or a summary. This assignment created an opportunity for students to think more critically about AI. While most students (93.75 %, see ***Figure 2***) reported no change in their negative perspective on AI use in academic contexts, it appears as though the majority were not inclined to use AI in the first place. While some students explicitly mentioned certain cases where AI use could be acceptable in an academic environment, most students overall indicated that they did not see AI as something that they would use themselves. It should be noted that we are not necessarily trying to convince students that they should never use AI—if they were to use it, they should know where AI is getting its information from and understand the biases that can exist in these sources, as well as the potential issues in how the AI presents information. From their summaries, most students were able to describe major pitfalls and ethical concerns that arise due to AI being used in academic research, indicating that, for most students, they had understood the aim of the assignment.

While we view this assignment as a successful effort to integrate AI into classroom teaching critically, there is considerable potential for future improvements. There are a few directions we would consider if we were to use this assignment in future classes. First, while many students critiqued the AI for being vague, repetitive, and generalizing, fewer students actually edited the phrasing and tone in their line edits of the AI's responses. To *prompt* students to think further about the phrasing and tone of AI's writing, we could state this expectation more explicitly in our guidelines and instruct students to discuss it in their summaries.

Secondly, we recognize that the assignment was less helpful in developing students' research skills. We noticed that, just as in the regular essay assignment, students tended to prioritize online sources over physical books. Only one student made a remark about the state of archaeological resources, noting that "a vast amount of archaeological data and historical archives still reside in physical libraries, museum collections, and excavation reports that remain undigitized." The majority of students used unreliable sources (such as Wikipedia, Britannica, and World History Encyclopedia) in their editorial process. When it comes to online academic sources, students struggle to tell the difference between outdated scholarship and newer arguments, and they often consider them equally valid and relevant. This tendency to focus solely on online academic articles is particularly concerning, as this information is integral to the AI ecosystem. For example, JSTOR, where most of our students find their scholarly articles, incorporated an AI research tool into its platform in July 2025.[4] Although there were only two cases where students used AI to generate what was supposed to be the non-AI parts of the assignment, this serves as a reminder of the importance of human intelligence in the research process and highlights the risks of false information and misuse of AI, where AI can easily produce fake evidence and publications at a large scale.[5] Additionally, these two incidents also prove that the Honor Code or a simple AI policy on the syllabus is not effective enough in preventing plagiarism with the use of AI in the classroom. For improvement, we suggest building more instruction on finding and evaluating academic sources into the class before this assignment.

Another issue was that many of the questions students asked the chatbot focused on basic facts rather than on interpreting archaeological evidence. This could be due to the assignment being given to a class of students who were mostly new to archaeology, considering some students were freshmen or had a background with limited research and writing experience. Taking this into account, the assignment might be more fitting for upper-level archaeology courses where students are already equipped with some level of archaeological methodologies and historical, factual knowledge to enable them to ask different questions and cite academic sources.

Beyond this goal of having students consider the limitations of AI and what constitutes ethical AI use, this assignment also sought to further develop research skills, to have students practice critical thinking, and to promote further engagement with the course material. As mentioned above, the fact-checking component of the assignment compelled students to actually undertake the research process themselves and to see how AI formulates errors or misleading answers in real-time. Through the process of editing and then summarizing their experience of

[4] https://www.about.jstor.org/blog/a-new-chapter-for-jstors-ai-research-tool/. (Access: 27 October 2025).
[5] See Haider *et al.* (2024) and Walters & Wilder (2023) on the discussion of ChatGPT-generated false publications.

both chatting with the AI and verifying the information provided to them, we found that we mostly succeeded in prompting reflection on ethical AI use, while still incorporating the larger aims of the course.

The fact-checking component also served an additional aim; for archaeologists, the quick spread of conspiracy theories online only increases the urgency for students to be trained in identifying historical and archaeological misinformation, which poses verifiable danger and harm due to their frequent connection with white supremacist ideologies. However, the utility of assignments like the one we outlined here is not limited to archaeology alone. Rather, its potential applicability extends cross-disciplinarily, as changing the selected themes does not alter the structure or broader aims of the assignment at all, and most, if not all, disciplines in the sciences and humanities involve at least some form of academic writing.

For educators grappling with how to address AI use in the classroom, we recommend communicating clearly and early on with students regarding classroom or institutional rules about what constitutes ethical AI use, in addition to an explanation as to why ethical AI use is defined in this way. An assignment much like the one we implemented here may also be worthwhile to consider, especially for educators whose course plan includes a research component. Guidelines and additional details for our assignment can be found in the Appendix. However, should we give this assignment again, we would likely have the students jump to the editorial phase by assigning them an already AI-generated essay to annotate, which would have the benefit of reducing the environmental impact of AI use and possibly make students who did not like having to personally interact with the AI more comfortable working on the assignment. While this assignment can certainly be tweaked for greater effectiveness, particularly in relation to promoting better research skills, it served as a valuable exercise, not just for students to reflect on what constitutes ethical AI use in the classroom, but also for educators seeking a creative and engaging way to respond to the surge in the use of AI among students in general.

5. ACKNOWLEDGEMENT

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FIGURES

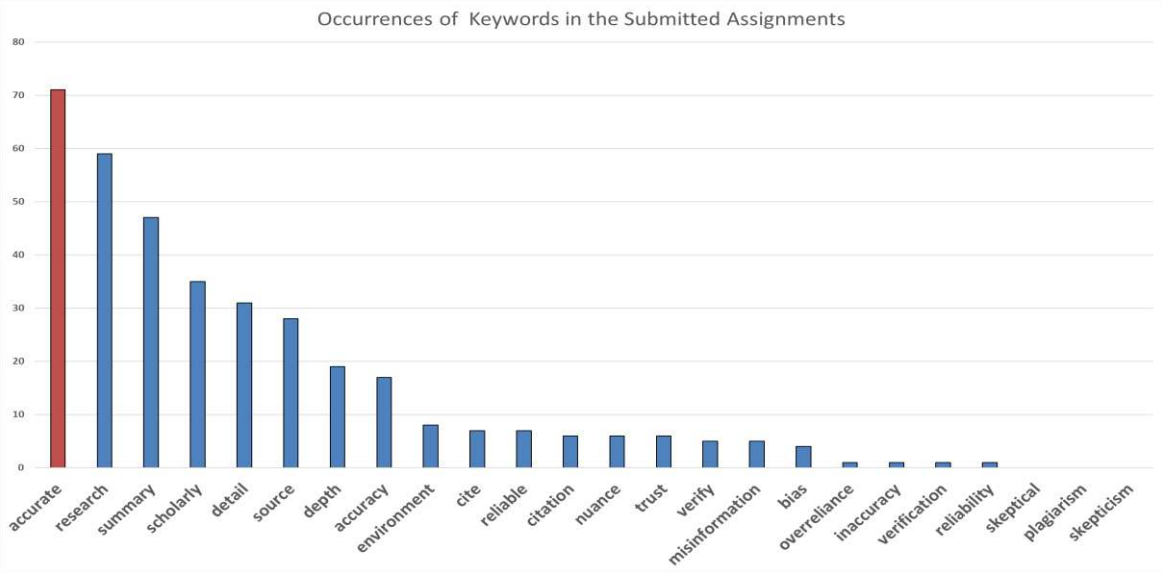

Figure 1. Chart demonstrating the most occurring keywords in the assignment submissions.

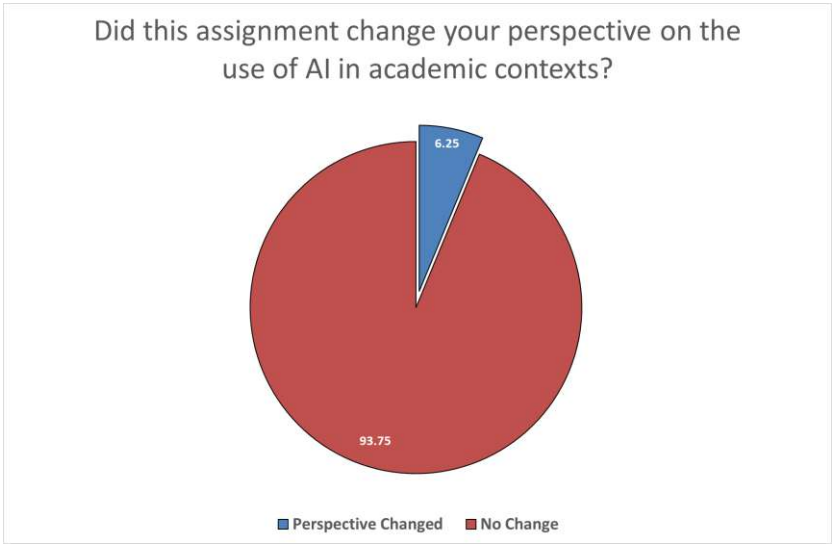

Figure 2. Percentage of students who reported a change in their perspective on the use of AI in academic contexts.

APPENDIX: GUIDELINES FOR THE ASSIGNMENT

The authors share the assignment guidelines with the broader community, with the intention that they be adopted, adapted, and improved for classroom teaching and research.

Artificial intelligence can assist us in gathering information, organizing thoughts, and generating and enhancing ideas. However, it can also produce false information that is difficult to detect, which can lead to plagiarism and undermine critical thinking. How do current generative AI tools perform when examining the ancient past? What is a more effective way to support your studies and research using these new tools? For this assignment, imagine you are an editor working for the AI writer. First, create five questions and ask an AI chatbot of your choice (such as ChatGPT, Google Gemini, etc.) to respond to each one (100-500 words each). Next, identify the accurate information the chatbot provides by offering citations and comments based on material gathered from class lectures and readings while also highlighting any incorrect or debatable sections with the appropriate citations. Finally, write a brief summary (about 500-750 words) explaining why and how you developed the five questions, the process of conversing with the bot, the editing and correction process, and your reflections on using generative AI to explore ancient histories. Additionally, include five screenshots to record your interaction with the chatbot.

Step-by-step Instruction:

1. Orient yourself to a specific theme. Choose a theme from below:
    - The Mycenaean world
    - The Minoan culture
    - The Iron Age and Lefkandi
    - The Greeks in Italy
    - The Persian Wars
    - The Peloponnesian Wars
    - The Athenian Acropolis
    - Greek symposium
    - Alexander the Great
    - Roman presence in Greece
2. Once you choose a theme, envision writing a short scholarly encyclopedia entry (an example of an entry authored by a student can be found on Moodle). When conducting inquiries, it is generally more effective to start with questions. What key facts do you need to create such an entry (for instance, chronology, geography, historical figures, battles, artifacts, etc.)? Additionally, what questions are essential to ask? Formulate five questions. Ensure these questions encompass history, sites/monuments, artistic developments, individuals, and objects.

3. Ask the generative AI of your choice to answer these questions. Be mindful of how you communicate with the chatbot to deliver your questions and receive the answers. Ensure that each response is between 100 and 500 words. *Don't forget to take screenshots during your interaction with the chatbot.*
4. After you receive the responses and finish your interaction with the chatbot, place them in a Word document (including your questions and conversations, not just the response).
5. Use either the Reviewing writing mode or a different font color to annotate the response. Identify which parts are correct and explain why. Highlight which parts are incorrect and provide reasons for that. How would you make corrections? Are there any sections that need clarification and further articulation? Would you phrase or rewrite any parts differently? Support your annotation with evidence from textbooks, class slides, or reliable scholarly sources.
6. After completing the annotation, write a brief summary of about 500 to 750 words that explains how and why you developed the five questions, your interaction process with the bot, the editing and correction steps you took, and your reflections on using generative AI to explore ancient histories. Be sure to include five screenshots to illustrate your summary.
7. Submit the AI-generated conversation with your annotations and your summary in a single document and upload it to Moodle.