TTYL:
Designing Text-Message Based Instruction for Primary Source Literacy

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INTRODUCTION

Among the many challenges that higher education and libraries faced during the first year of the COVID-19 pandemic in 2020 was the rapid shift to online learning as classrooms and library buildings were closed. At the University of Arizona (UA), students and faculty had to complete courses remotely that had been designed for in-person instruction. Many students did not have experience with online courses, while others did not have the technology and connectivity to successfully complete their courses. During the pandemic, students across universities have struggled with access to the internet and technology. The UA Student Online/Remote Classroom Experience & Learning Survey showed that 1 in 3 students reported they had limited internet access, and 2 in 10 students reported barriers due to lack of technology.[1] Given these challenges, librarians at the University of Arizona Libraries (UAL) were interested in exploring new ideas for delivering information literacy tutorials to students. Almost all students have access to mobile devices and use them on a daily basis. Thus, in 2021, we embarked on a research project to explore the design and use of a text-message-based, information literacy mini-course using Arist, an online platform that allows for easy creation of courses delivered via text messages and accessible on any mobile device.

Mobile text or instant message technology has been used as a teaching tool in higher educational settings for over a decade.[2] Educators viewed this technology as an effective way to reach distance learners or engage students in the college classroom. Some common examples include the use of mobile message applications such as GroupMe or WhatsApp to provide a community of support and collaboration for students or a platform for language learning and other disciplinary learning content.[3] Since the pandemic, there has been a growing interest in microlearning, or the asynchronous provision of small batches of learning materials to students.[4] Mobile technologies such as text or instant message are increasingly seen for their value in enabling microlearning opportunities.[5]

A text-message based course that delivers small chunks of content each day is aligned with more current approaches to online teaching including microlearning. Microlearning has numerous benefits, including highly engaged students, an increase in retention of new information, and easier transferability of newly acquired skills to the real world. It is also better aligned with how students learn today, via social media apps and smaller pieces of information, similar to what they find on TikTok or YouTube and on their mobile devices. A text-message based course is also better aligned to best andragogical practices which focus on how adults learn.

One tenant of adult learning theory is that adult learners should only be presented with information that is immediately applicable to their lives and work. A text-message based course is very limited in the amount of content that can be delivered in one day. This means students are only presented with the information that is immediately tied to the relevant learning outcomes for that day. An extra piece of information that might be interesting to know, but not immediately tied to the learning outcome, is not included.

Arist is an e-learning platform that supports text-message based courses delivered via phone or other mobile device. Courses typically run about 5 days (this can be adjusted to any time period) and each day students receive different chunks of content. Students have 24 hours to complete a day's lessons, and they can choose at which time during the day they would like to receive their daily lesson. In addition to text, students can also view media files and answer questions, including free response and multiple choice and receive feedback on their answers. Arist states that it was developed around learning approaches and theories like spaced learning and microlearning that have shown to increase knowledge retention.[6] Arist captures students responses and other analytics data. Arist, being text-message based, is likely the most mobile-friendly e-learning tool; however, it can be pricey. Currently, the most affordable pricing packet starts at $9.00 per learner. For a large university, this could add up to hundreds of thousands of dollars, but Arist will work with educational institutions and non-profits on alternative pricing.

In order to examine Arist's usefulness to and engagement potential with college students, we developed a course in evaluating primary sources. As part of a national study led by Ithaka S+R, three of the authors had recently investigated UA instructors' practices and experiences in teaching undergraduate students with primary sources.[7] Based on the findings, our recommendations included the development of instructional services and tools to support teaching with primary sources, particularly in an online environment. Primary source literacy instruction is currently a central focus within the field of librarianship and archival pedagogy.[8] Introducing students to primary sources and teaching how to evaluate them is associated with the development of critical thinking and problem solving skills.[9] Alongside the evolution of online education and the growing number of digitized and born-digital primary source materials, there is a recognition of the need for innovative digital primary source literacy instruction.[10] Thus, we saw the opportunity to use the evaluation of primary sources for our pilot of Arist.

We recruited students to participate in the course via email messages to professors along with messages posted in the course management systems of the targeted courses. In order to recruit students we believed would be interested in the course content, we specifically targeted history and library science students. However, students from several majors participated in the course. A total of 30 students completed the course as well as a satisfaction survey. The students' class standings were as follows:

Sophomore -2
Junior - 7
Senior - 5
Graduate - 16

SELECTION AND CREATION OF CONTENT

We assembled a group of librarians with different skill sets: subject matter expertise, including an archivist and two liaison librarians who work with primary sources; instructional design; and assessment. The first step was to identify learning outcomes and develop the content. For the content of the tutorial, we wanted to expose students to a variety of types of primary sources, since each may be evaluated in different ways. We also decided that we should use sources around a common topic, and given the timeliness, we selected the 1918 influenza pandemic in Arizona as the overarching theme.

We used four types of primary sources: a photograph, a letter, a newspaper article, and a government document. We also wanted to include primary sources from different archives, so the photograph was selected from the Arizona Memory Project (https://azmemory.azlibrary.gov/), a collection of digitized primary sources from different archives in Arizona; a letter from the University of Arizona Libraries, Special Collections; a newspaper

article from Chronicling America (https://chroniclingamerica.loc.gov/, the digital newspaper repository from the Library of Congress; and a government document from the Arizona Memory project.

Creation of Content and Questions about Primary Sources

After selecting the sources, we created explanatory text and questions about each source. We also created content for the first day of the tutorial that introduced what primary sources are.

When a student signed up for the Arist course, they received an introductory welcoming message that explained the goals of the tutorial: "Over the next five days you'll learn how to evaluate information from specific types of primary sources (such as photos, newspapers, and documents." Basic instructions were also included about when they would receive the text messages each day and contact information for support.

Introduction to Primary Sources

The first day of the tutorial was titled "What are primary sources?" A brief explanation of primary sources was included, along with examples of types of primary sources. Figure 1 shows how students saw the first day's text on their phone. This was followed by brief discussions of why one would want to use primary sources in their research and where one may find primary sources. Only one question was included in the first day: "If you were researching the 1918 Influenza Pandemic, which of these would NOT be considered a primary source?" Students were given three answer choices: A. a letter written in 1918; B. a photograph from that time period; C. a journal article written in 2005 about the 1918 flu. At this point, students can respond with a text message of A, B, or C. Through Arist, we had set up automatic responses for each incorrect or correct answer.

FIGURE 1

Content From the First Day of Class

10:04

222

+1 (415) 843-2143

Day 1 - What are primary sources?

Hello and welcome to your first day of Learning With Primary Sources . 👏

Today we are going to learn about what primary sources are, how we can use them in our research,

Photos

On the second day students were asked to analyze a photograph. They learned about the importance of evaluating visual history and the kinds of information that can be found in this type of primary source. The students used a photograph of Governor George W.P Hunt wearing a mask during the 1918 influenza pandemic from the Arizona Memory Project (see Figure 2 below). Students were asked to observe the different parts of a photo in order to learn more about the content and identify the subject of the photo. They were then asked to look at the context of the photo and think about questions like is there a caption? What information does this provide? What is the date? What information can you find in the metadata below the photograph?. Using the information they gained from examining the parts of the photo we wanted the students to think about how they could incorporate visual history into their research, using questions like can you speculate on why this photo was taken? What can you learn about this time in history from examining this photo? What story does the photo tell you?
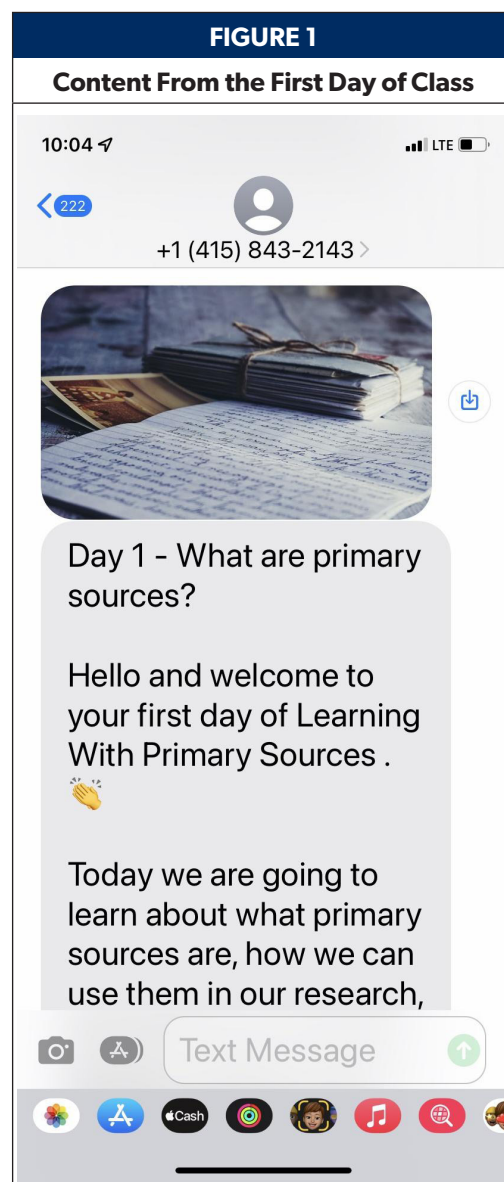

FIGURE 2

Arizona Governor George W.P. Hunt Wearing a Mask During the Influenza Epidemic of 1918 In Phoenix

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FIGURE 3

Letter from Roy Moore to Kirke Moore

Correspondence

On the third day the students analyzed a document from Special Collections, in this case a letter from the Kirke T. Moore papers (MS 645) written by Roy Moore to his brother, Tucson lawyer Kirke Moore during the 1918 pandemic (see Figure 3). We explained the insights that correspondence gives into the personal lives of individuals, how historic events affected people and what people thought about events. The questions that students answered focused on evaluating the who, what, when and where of the letter in order to understand how the content could be used in research. Finally, we asked the students the open ended question, what can the letter tell you about how Roy was dealing with the 1918 pandemic? In our automated response for the open ended question we included information about the content of the letter that we had hoped the students had discovered in their analysis.

Newspapers

On the fourth day of the course, students were introduced to newspapers and their unique features as primary sources. An external link was provided to a newspaper article clipping, "Vaccinate All is Plan to End Influenza in Arizona," from the *Tombstone Epitaph*, a historical newspaper published in Tombstone, Arizona (see Figures 4 and 5 below).

FIGURE 4
Newspaper Article from November 03, 1918 Issue of The *Tombstone Epitaph*

FIGURE 5
Front Page November 03, 1918 Issue of The *Tombstone Epitaph*

Students were also given a link to the full front page where the article appeared so that they could see it in context of other news reported that day. They were asked to read the article and answer a few multiple-choice questions such as what they learned from the news article, what year it was published, and what they learned from viewing the full page of the newspaper. There were also open answer questions like "What else was reported in the news that day?" Since the responses from students on open-ended questions would be automated, we provided a general comment that reiterated what we wanted them to learn: "You can see that there were several other items in the newspaper that day, such as election news, a story about the high prices of eggs, and an editorial cartoon about the war." For this day, we also pointed students to a news research guide (https://libguides.library.arizona.edu/news-research) on the UA Libraries' site if they wanted to learn more about using newspapers.

Government Documents

On the fifth day of the course, students were presented with another type of primary source: a government document. We emphasized how government documents are important primary sources of information for historical events by adding a framing comment: "We can learn a lot about a particular event, like a public health crisis, by looking at how the government responds to it." We chose a letter written by the state's leading health authority at the time that outlined strategies for containing the influenza epidemic (see Figure 6). We asked students to read the letter and interpret its content, including identifying who wrote it, and whether a mask mandate was part of the state's response to the epidemic. We also asked an open-ended question about a reference in the letter to the economic impact of the epidemic.

Final Day

The sixth day of the text messaging course was a wrap up that summarized a few key points about learning with primary sources and pointed students to the UAL's FAQ pages about finding primary sources (https://ask.library.

FIGURE 6

Circular Letter from George Goodrich, Arizona State Superintendent of Public Health, To City and County Health Officers (1919)

arizona.edu/faq/321601), as well as a link to our liaison librarians contact page (https://new.library.arizona.edu/about/contact/your-librarian).

Transfer of Content to Arist Text Messaging Format

Once the content was created, it was transferred to the instructional design team. The instructional design team reworked the content following best practices in digital learning, adding pedagogical features, additional comprehension questions, and shortening the content to better fit text messaging style. We wanted the content to have a less formal, more conversational tone, similar to what is normally observed in a text-message conversation. Arist has strict limits of 1200 characters per section, including spaces and emojis, so we had to cut and reword content to meet this limit.

Each day begins with a decorative image and a welcome message including the title of that days' lessons and a sentence about what they will be learning that day. We purposely did not include a list of learning outcomes for each days' lessons as we had such limited time and space. In Arist, sections are divided by questions. Students reply to questions via a text message and immediately receive a response, again in the form of a text message.

Then the next piece of content follows.

To keep the student more engaged with the course, we included different question types, including multiple choice and open-ended questions. Multiple choice questions were used as knowledge checks, and open-ended questions allowed for students to reflect and apply what they had learned. For multiple choice questions, students received feedback indicating if their answer was correct or incorrect and an explanation. Each selection choice had its own individual feedback. Figure 7 shows a multiple-choice question with feedback. Open-ended questions also provide feedback; however, they are canned responses, so all students receive the same feedback. Most open-ended questions do not have a definite correct answer, so the feedback provides an option for how a student might reply. Figure 8 shows an open-ended question with a reply and feedback. In addition to the course, we also created a library guide (https://libguides.library.arizona.edu/tutorials-arist) to introduce students to the pilot study and explain how Arist works.

FIGURE 7

A Multiple-Choice Question with Feedback

FIGURE 8

An Open-Ended Question, Student's Answer, and Feedback
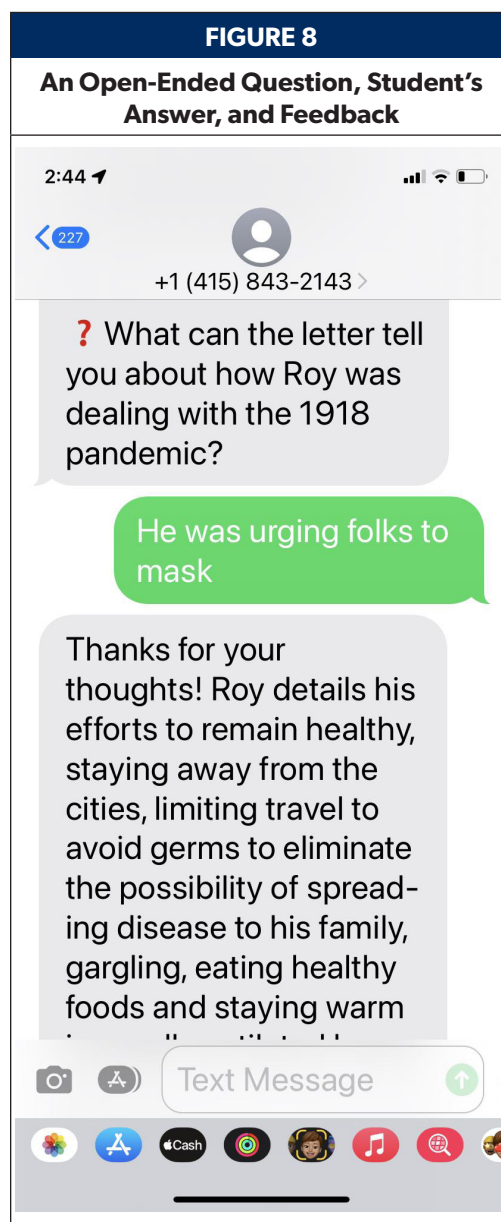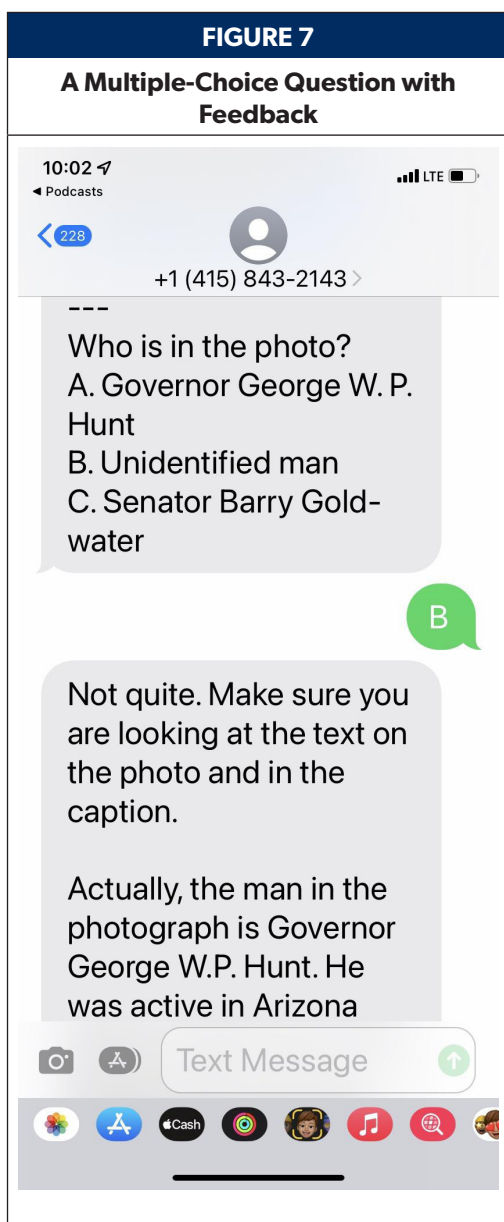
SURVEY RESULTS

Overall students had positive reactions towards the course. Figure 9 below shows the results for the question "How would you describe the Learning with Primary Sources text message tutorial?" Analysis of open-ended replies reveal that students liked receiving small amounts of content over a few days. A few students noted this structure would help them remember the information better, especially when learning about a new topic. One student said, "I was surprised that there were only a few things covered each day. I didn't mind that, it makes it easier to digest the information and retain it." Students also found the format to be casual and approachable. Most students described Arist as easy to use, accessible, and convenient. They found the set-up was easy and the tone was friendly. Students were pleasantly surprised to find the course engaging; one student even expected the tutorial to be formal but found the messages "…were happy and filled with emojis." Many students also indicated that they found the tutorial more engaging than they had expected. The majority of students said they would take a text message tutorial again but aren't sure if they prefer taking a text-message tutorial instead of using the computer. The modality choice depends on the learning subject complexity, tutorial length, and course components. There were very few negative comments and most of these focused on issues with technology or not understanding directions.

FIGURE 9

Students' Tutorial Satisfaction Ratings
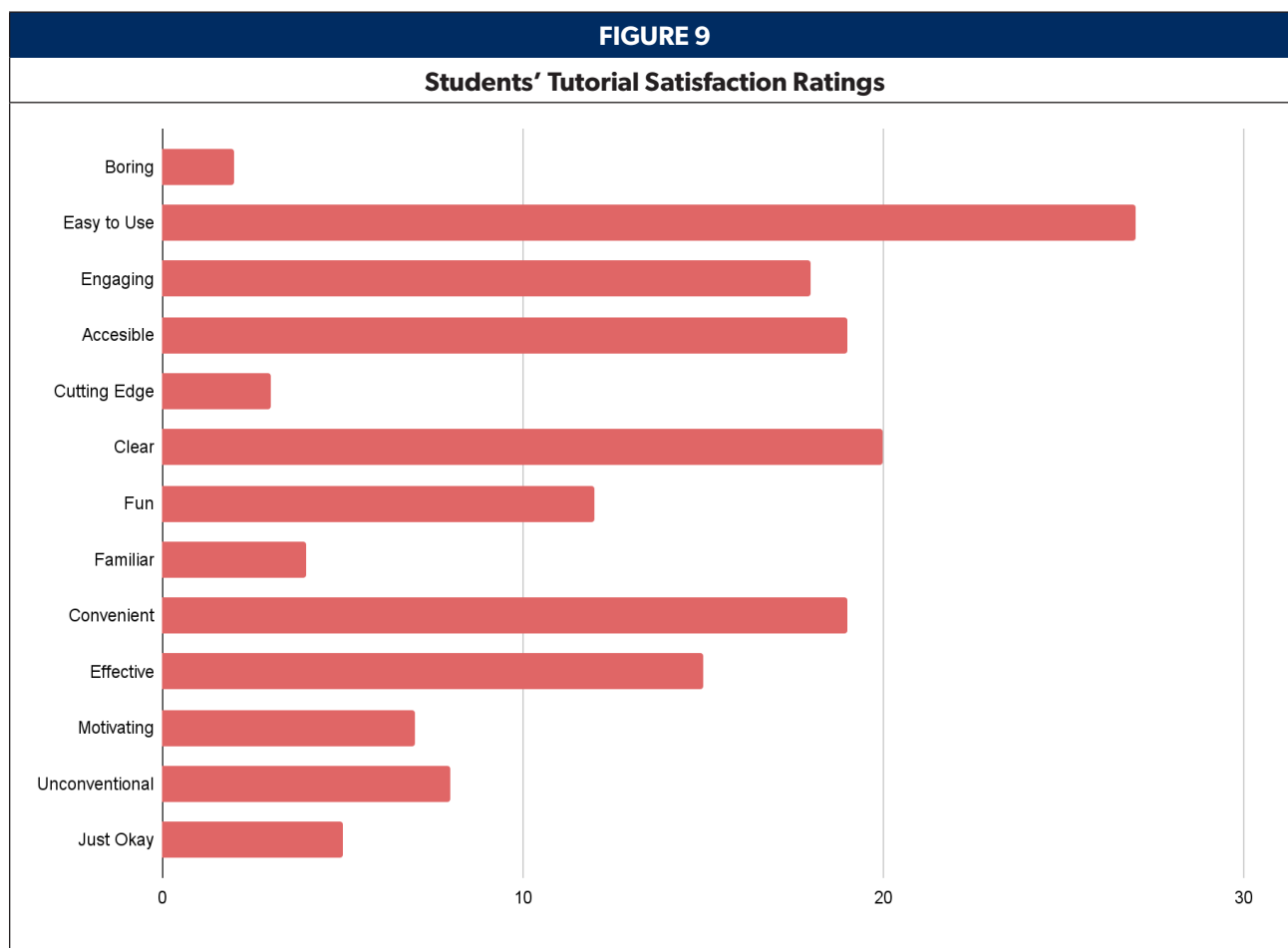
DISCUSSION, CONCLUSION, NEXT STEPS

In addition to the Primary Source Literacy course, we have created two additional courses using Arist. One course is aimed at graduate students and centers on copyright and fair use. The other course is based on our basic information literacy tutorials. Both courses are available through the UAL's website. However, they have

not received much usage. The basic course based on our longer tutorials course did receive more usage when it was required as part of a course. Our library also explored partnering with the public health librarian to train *promotoras* (community health workers) who may not have easy access to a Wi-Fi connection but do have access to and experience with text messaging.

Based on our experience, we believe that text-message based mini-courses like those available via Arist have great potential for college students and for information literacy instruction. However, they work best when they are required as part of a larger course. Other library uses in which Arist could work well include library orientation sessions, training staff on resources and services, and onboarding for new employees. Arist works best with content that lends itself to small bits of information. For example, a course about formatting citations using *The Chicago Manual of Style* would work well, but a course on information literacy may not. It should also be noted that Arist's price may be out of reach for many academic and public libraries.

NOTES

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9. Garcia, Lueck, and Yakel, "The Pedagogical Promise"; Kurtis Tanaka, Daniel Abosso, Krystal Appiah, Katie Atkins, Peter Barr, Arantza Barrutia-Wood, Shatha Baydoun, et al., "Teaching with Primary Sources: Looking at the Support Needs of Instructors," Ithaka S+R, last modified 23 March 2021. https://doi.org/10.18665/sr.314912
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