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Citizen web archivists: applying web archiving as a pedagogical tool

Kayla Harris , Christina A. Beis , and Stephanie Shreffler 

ABSTRACT

Librarians and archivists preserve information on the Internet through web archiving, but undergraduate students may not have considered that information on the Internet is not always permanent. The asynchronous program, Citizen Web Archiving: Preserving Websites for the Common Good, taught students what web archiving is, why it's important, the ethics of collecting information on the Internet, and how they could contribute to the historical record by archiving websites they deemed important via the Internet Archive's Wayback Machine. The results suggest further opportunities for involving undergraduate students with web archiving initiatives at institutions, and using web archiving as a pedagogical tool.

KEYWORDS

Web archiving; citizen archivists; undergraduate students; asynchronous instruction; programming; Internet Archive; Wayback Machine; LibWizard; civic engagement

Introduction

Increasingly, information that was once available in print is now available only online. While librarians and archivists preserve some of this information through web archiving, the process of selecting, capturing, and making accessible content from the web, undergraduate students may not have considered that everything on the Internet does not always persist, and that preservation requires a proactive approach. As a co-curricular learning opportunity, a team of librarians and archivists created a self-guided, asynchronous program, Citizen Web Archiving: Preserving Websites for the Common Good, in order to teach students what web archiving is, why it's important, and the related ethics of collecting information on the Internet. By using the LibWizard platform, a variety of videos, readings, and questions were shared, citing contemporary examples of web archiving and explaining efforts to document different aspects of American culture and social justice movements, as well as the web archive collections curated by the University Libraries at the University of Dayton (UD). Through a final activity and reflection to archive a website for the common good, students gained a new understanding of the Internet's impermanence and the knowledge to pursue citizen web archiving.

Institutional web archiving initiatives

The University Libraries has been using Archive-It, a subscription-based service from the Internet Archive, since 2015 to capture websites and social media that fits within the collecting scope of the three special collection areas. Cultural heritage institutions use Archive-It to harvest, organize, and catalog their collection material. The University Libraries has been expanding their use of Archive-It by involving student employees in the process. In addition to utilizing student employees to expand the metadata for individual seeds (URLs), the Marian Library also developed a project on web archiving for an OhioLINK Luminaries student intern during Fall 2020. The

OhioLINK Luminaries Program (formerly named Library Leaders) is a program piloted by several OhioLINK member libraries to provide a paid internship experience to rotate through different units in the libraries. During a rotation in the Marian Library, the intern, a senior history major, was introduced to the concept of web archiving through readings, tutorials, and tasks with the Archive-It collections. During check-in meetings and in a post-internship interview, the intern expressed surprise at the Internet's impermanence, stating, "all my life, everyone always told me to be careful what you put on the Internet because it will never be erased; it will be there forever. Now, I learned that isn't completely true" (Harris, 2020).

Connecting the expanding use of web archiving at the University of Dayton and a perceived gap in student knowledge on the subject, the archivists from the Marian Library and the U.S. Catholic Special Collection, with the Discovery Services Librarian, envisioned a program for undergraduate students that introduced the basic issues of web archiving and crowdsourced actual web archiving.

Co-curricular learning through AVIATE at the university of Dayton

The University of Dayton is a Catholic, medium-sized, private institution, located in Dayton, Ohio. In the Marianist tradition, the University is committed to educating the whole person and linking learning and scholarship with leadership and service. Living in community is especially valued on the residential campus, and UD aims to integrate classroom experiences with co-curricular learning opportunities. One of these opportunities that is especially popular with students is offered by UD's Department of Housing and Residence Life. AVIATE, an acronym that stands for A Vision for Integrated, Applied, and Transformative Education, is a program that integrates the department's residential curriculum with the housing assignment process. Students participate in programs offered by Housing and Residence Life, as well as campus partners, and are awarded PATH, Points Accumulated Toward Housing. Each PATH-eligible opportunity must connect to one of the program's identified learning goals of authorship, interculturalism, or community learning, and the number of PATH credits that a student has determines the priority they will be given to attain their desired housing.

The University Libraries has been a successful campus partner in the AVIATE program since its formation, offering many different sessions on topics ranging from book reads to programs on financial literacy. While many of the University Libraries PATH-eligible programs have high attendance, the special collections units have traditionally offered smaller sessions with an attendance cap, and used them to provide hands-on learning with primary source materials. Previous sessions offered have included for example, "Sacred Sights: Exploring Archival Postcards," that introduced students to concepts of visual literacy and connected to the AVIATE learning goal of interculturalism; and "Community Collections: Exploring Archives at UD," focusing on the shapes and structures that communities can take while also helping students navigate a finding aid.

In the summer of 2020 the Department of Housing and Residence Life announced that the AVIATE program would continue during the 2020–2021 academic year, but that all events for PATH credit must be virtual. It was up to campus partners to determine how they chose to offer events, whether as live sessions in a platform such as Zoom, or as asynchronous learning opportunities. The experience with the remote web archiving project for the OhioLINK intern and the intern's own reflections on web archiving prompted the development of the PATH-eligible program, Citizen Web Archiving: Preserving Websites for the Common Good.

Literature review

There are many examples of "citizen archivist" or crowdsourcing efforts to involve community members in the archival profession. The Citizen Archivist program at the National Archives

involves interested volunteers with tagging, transcribing, and commenting on digitized objects. During nationwide lockdowns in spring 2020 due to the coronavirus pandemic, they saw triple their normal amount of contributions with some people finding themselves with more free time to contribute (Macchi, 2020).

The Community Web project, a two-year grant project, enabled public libraries to create web archives that captured content related to their local communities. As part of this project, the Queens Memory Program of the Queens Borough Public Library developed customized workshops on web archiving for three audiences: MLIS candidates, middle and high school students, and cultural heritage professionals. The Program asked the middle and high school students and the cultural heritage professionals to contribute ideas for websites to include in the project (Milbrodt et al., 2018). The Library of Congress' K-12 Web Archiving project also introduced students to web archiving. Starting in 2008, the project allowed students across the country to gain hands-on experience with selecting, capturing, and describing web content. J. Freeman commented that for these students, "the actual process of web archiving may be just as important as the collection created from it," as the program "empowers students to redefine their understanding of history, cultural expression, and personal identity" (Freeman, 2016).

As described above, there have been some efforts at introducing younger students and the public about web archiving. Additionally, a variety of courses have taught undergraduate students about basic archival principles (See, for example, Duff & Cherry, 2008; Krause, 2010; Roff, 2007; Stringfellow, 2019). The literature contains far fewer examples of efforts to teach web archiving to undergraduate students in colleges and universities or to the general public. One such example was led by Andrea Schuler (2017) at Tufts University, who worked with undergraduates to preserve websites documenting environmental justice. For this project, Schuler worked collaboratively with two courses and students were asked to submit recommendations on the specific theme of environmental justice to the library for evaluation and possible inclusion in the institutional web archive collections.

A presentation at DigCCurr seemed to indicate the possibilities of educating the general public about web archiving, stating that "outside the context of professional curation, private individuals have the potential to contribute substantially to social memory, by informing, contributing to, and initiating web archiving activities" (Bragg et al., 2009). They suggest that in order to cultivate "citizen web archiving," information professionals should provide opportunities for training and hands-on experience with available tools. Much of the literature that discusses web archiving, does so from an institutional perspective. Peter Webster (2017) notes that an important strand of web archiving activity that tends to be overlooked is the work of individuals and small groups responding to a particular cause. In describing two examples of this type of activist web archiving, he explains that, "both ventures were motivated by a sense of public duty, and a particular political and social vision of the kind of space that the web should be."

Methods

The Citizen Web Archiving program (https://udayton.libwizard.com/f/citizen_web_archiving), was created with three main learning goals: teaching students about the process of web archiving, introducing them to the web archive collections curated by the University Libraries, and instilling within them the importance of preserving history on the Internet. The culminating activity was a virtual-version of a "hands-on" activity where the students served as citizen archivists and archived a web page for the common good. By connecting this program to the AVIATE program's "community living" learning goal, students learned that taking pride in one's community extends to space on the Internet, and that ensuring different viewpoints are represented in the historical record is the responsibility of everyone in the community.

University of Denver
University Libraries

Citizen Web Archiving: Preserving Websites for the Common Good

Web Archiving in the News

Web Archiving in the News

Archived websites have been used to hold people and organizations accountable

- In 2017, Comcast changed its promises regarding net neutrality, deleting the language of "no paid prioritization" on the same day that the Federal Communications Commission had announced initial plans to repeal net neutrality rules. A look at the pledge on the archived website using the Internet Archive's Wayback Machine was able to reveal this discrepancy
- During a website redesign in late 2017, the White House deleted all of their archived copies of a newsletter, even though they are supposed to provide adequate advance notice to the public according to the Paperwork Reduction Act. The removed posts are still available on the Wayback Machine website

Read the article from the online tech publication, *The Register* from September 2018 to learn how web archives are being used as legal evidence.

After reading the article, answer the following question to proceed to the next slide.

A US Court of appeals decided that the Wayback Machine's archive of webpages is NOT legitimate evidence that may be used in litigation. (required)

☐ True

☐ False

Page: 4 of 12

If the webpage https://www.theregister.com/2018/09/04/wayback_machine_legal/#:~:text=Analysis%20The%20Wayback%20Machine's%20archive,US%20appeals%20court%20has%20decided& is not displaying below

The Register OFF-PREM • ON-PREM • SOFTWARE • SECURITY OFFBEAT • VENDOR VOICE

Archive.org's Wayback Machine is legit legal evidence, US appeals court judges rule

Big thumbs up to Internet Archive for now

Kieren McCarthy in San Francisco Tue 4 Sep 2018 // 19:38 UTC

61

ANALYSIS The Wayback Machine's archive of webpages is legitimate evidence that may be used in litigation, a US appeals court has decided.

The second circuit ruling [PDF] supports a similar one from the third circuit – and, taken together, the decisions could pave the way for the Internet Archive's library of webpages to be considered evidence for countless future trials.

The second circuit, based in New York, was asked over the summer to review an appeal by an Italian computer hacker in which he sought to exclude screenshots of websites run by him that tied him to a virus and botnet he was ultimately convicted over. Prosecutors had taken screenshots of his webpages from the Internet Archive and used them as trial evidence – and he wanted the files thrown out.

Fabio Gasperini argued that the presented Wayback Machine archives of his webpages were not adequately authenticated as legit and untampered, and so shouldn't have been included in his criminal trial. He cited a decision by the

Figure 1. Screen capture of the Citizen Web Archiving program, showing the side-by-side layout in LibWizard. Image provided by the authors.

Due to the asynchronous nature of the AVIATE program and the goal to share a mix of videos, recent news articles, and scholarly research, Springshare's LibWizard platform was selected as the tool to host the program. Although the Libraries had licensed LibWizard for a few years, it was not used broadly until the COVID-19 pandemic moved all courses and library instruction to an online format in March 2020. With the recent hire of a new Health & Life Sciences Librarian with responsibilities for managing LibWizard, library faculty were encouraged to use the product in new ways, and he provided support and instruction on potential opportunities to use it. The tutorial option was selected as it provided a self-guided learning experience with convenient features on both the administrative and user side. LibWizard tutorials function similarly to Guide on the Side, a tool developed by the University of Arkansas libraries (Sherriff, 2017). A website, video, or other media is shown on one side of the screen, while instructions and questions can be presented on the other side. The Citizen Web Archiving program used videos, websites, and documents as the media presented to students, and a mix of multiple choice, true/false, and open-ended response as formative assessment to check for student understanding throughout (Figure 1). Several library colleagues and student employees served as beta testers of the program, completing the tutorial in advance of its launch to provide feedback on the function of the program, the difficulty of the questions, and an estimated length of time to complete the tutorial.

Program content

In addition to foundational information about what web archiving is, and why it's important, the program also included a section on its challenges and potential ethical considerations. Students were introduced and given examples for five main types or purposes of web archiving, including social justice issues, government accountability, institutional websites, social media, and niche interests. With COVID-19 and the civic unrest experienced throughout the United States after the death of George Floyd in May 2020, there were many recent news stories about efforts from

both archivists and citizens to archive these historic moments on the Internet. One example shared in the program was a news story about a grant-funded project in Florida, led by Makiba Foster, titled “Archiving the Black Web: A National Forum to Map the Landscape, Define the Issues, and Plan a Strategy for Documenting the Black Experience Online.” In describing the importance of web archiving Black culture on the Internet, Foster states, “I am benefiting from the labor of people I never knew, and this kind of work will hopefully benefit people that I will never know. It is a way of paying it forward, in terms of Black culture and that it is documented in this new digital space.” (Crandell, 2020).

To counter a common solution to just “archive everything,” students read a selection from an editorial article on the ethics of web archiving. In the instructions for that section, students were prompted to think about privacy and permission. The instructions in the program stated, “should archivists seek out permission from a web site owner before crawling it and saving it to a web archive? By capturing a website or a piece of social media, we are perpetuating that content in ways that the original owner or creator may not have intended. From that perspective, seeking permission should always be attempted. On the other hand, it’s often unclear who created a website, or how to get in touch with them. Even if you can identify the creator or owner, again, the sheer size of the Internet can make seeking permission for each piece of web content seem like an impossible task.” This prompted students to think more critically about the information on the Internet and which types of materials archivists should be attempting to archive.

The final activity of the program asked students to serve as a citizen archivist and archive a website for the “common good.” At the University of Dayton, the idea of the common good is built into the collective community identity, and is a key concept of the university’s vision, introduced by President Eric F. Spina (*The University for the Common Good*, n.d.). Although the definition of “common good” is broad, it is an idea that undergraduates at the University of Dayton are familiar with. The program planners intentionally chose not to include any further instruction about the types of web pages that individuals should archive, as a central theme in the program was that individuals and communities have unique viewpoints that are not always present in the historical record.

A narrated screencast video walked participants through the process of archiving a webpage using the Internet Archive’s “Save Page Now” function. There are several exceptions to what can be archived with this feature, and those were explained to students in the video. For example, although the program highlighted instances of entire websites being archived by cultural heritage institutions using Archive-It or other tools, the Save Page Now feature only archives a single website page. This is the difference between archiving a single news story from the New York Times versus the entire New York Times website. Other websites specifically prevent web crawlers from archiving their webpage.

Participants were asked, “What website did you choose to archive?” when submitting their final reflection. In hindsight, this direction could have been clearer as individuals submitted their answers in a variety of ways, such as the archived URL in the Wayback Machine, the original URL, or a general description of the website they chose. It would have been easier to determine if students had successfully completed this task if they were asked to submit the Wayback Machine’s archived URL. However, the program planners felt that the student’s reflection on the program was more important than whether or not the web page was archived. Periodically the Wayback Machine is unavailable due to system upgrades, or slow servers, so the actual archiving was seen as a secondary outcome.

The reflection asked students to elaborate on why they felt it was important to archive the particular website page they chose. They were also asked whether they thought it was important for the general public to actively archive websites and their reasoning for why or why not. At the conclusion of the tutorial, participants received a certificate acknowledging that they were

officially citizen web archivists and a full list of references to material used throughout the program for further study.

Results

The online program was open to students seeking PATH credit from October 19, 2020 to November 19, 2020 and in that time 1,343 students participated, nearly 15% of UD's undergraduate population. Within just the first day of opening, over 100 students completed the program. The program was advertised through a digital sign in the library, a blog post on the library website, and through the library's social media channels, Facebook, Instagram and Twitter. It was also emailed directly to library employees who were encouraged to take the program themselves as professional development or to share with others. One partnership developed when the University Libraries liaison to the History Department shared the program with a faculty member, seeing a connection to an assignment that students had been given to become citizen archivists at the National Archives. The program was copied in LibWizard and customized with reflection questions that connected the two experiences, and twenty-five students completed this version of the program. Externally, the marketing graphics were shared with the University's Human Rights Center and Alumni Relations and the program was featured in the weekly AVIATE emails advertising PATH-eligible opportunities.

Throughout the program, participants were required to answer several true/false or multiple-choice questions. When an incorrect answer was selected, participants were directed to try again, sometimes with specific clues as to what they needed to review before answering. In this way, the true/false and multiple-choice questions served as formative assessment throughout the program. All of these questions required a correct answer before a participant could proceed to the next slide. However, the LibWizard tutorial program records the answer and statistics for a user's first attempt only. This means that the participants received feedback and clues they needed to learn the correct answer, while the program creators also gained valuable insight into which questions users struggled with (Table 1).

The overall average score for the six multiple choice questions was 92.3%, and every question had a correct response rate above 80%. The final task of the program instructed students to choose a website that they felt should be archived due to its impact on the common good, and a review of the websites provided insight into how students think about, or define this idea.

The archived websites were classified into 10 categories based on subject area and theme. Although some websites could reasonably fit into multiple areas, each one was classified in one category only. The categories were selected by identifying trends in the content of websites that were archived. The categories included: Activism, Dayton, Education, Environment, Government,

Table 1. Statistics for formative assessment questions throughout program.

Formative Assessment Questions	Percentage correct on first attempt
1. True / False: In the Digital Era, websites are comparable to scrolls in earlier time periods, as the method of capturing cultural history and historical events	98.80%
2. True / False: A US Court of Appeals decided that the Wayback Machine's archive of webpages is NOT legitimate evidence that may be used in litigation.	82.30%
3. True / False: Web archiving can only be done by libraries or archives, not by other organizations or individuals.	85.80%
4. Multiple Choice: What is the mission of libraries, museums, and archives, according to this article?	96.60%
5. Yes / No: Does this mission also apply to web archives?	98.40%
6. Multiple Choice: What organization from UD did we archive a blog post from in the video?	91.90%
Overall Average	92.30%

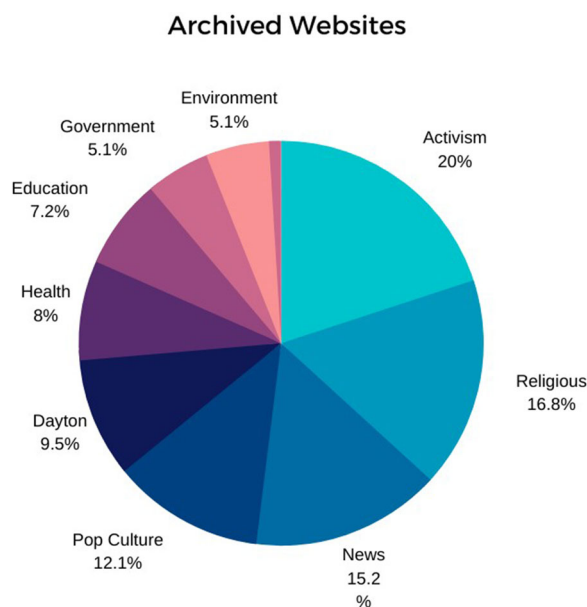


Figure 2. Categorization of website pages students chose to archive for the common good.

Health, News, Pop Culture, Religious, and Other. Overall, 20% of students archived a website that was classified as “Activism” (See Figure 2). Examples of “Activism” websites included organization and nonprofit websites such as the People for the Ethical Treatment of Animals (PETA), the National Association for the Advancement of Colored People (NAACP) and the American Civil Liberties Union (ACLU). In reviewing the “Activism” sites, 49% were related to the Black Lives Matter (BLM) movement. The frequency of BLM-related websites can be attributed to the timing of the online program, with the murders of George Floyd and Breonna Taylor among others, along with nationwide protests that brought the BLM movement to the forefront.

The next highest category of archived websites was “Religious,” with 16.8%. As a Catholic and Marianist institution, founded by the Society of Mary, it was logical that students would archive religious websites, such as an encyclical by Pope Francis, local parish websites, and the Hope Border Institute, an organization that brings Catholic social teaching to the United States and Mexico border region. Students may also have thought specifically about religious websites as a section of the program introduced students to the University Libraries Archive-It collections, including those from the U.S. Catholic Special Collection and the Marian Library, which are primarily religious in nature. The “News” category was the third highest, with 15.2%, and represented a wide range of interests including, climate change, the 2020 presidential election, police brutality, and the COVID-19 pandemic.

In addition to selecting and archiving a website page, students had to reflect upon why they chose a particular website, why they felt it should be archived, and whether or not they felt that the general public should be involved with web archiving. The reflection was an important component to demonstrating that students had met the AVIATE program’s learning goal of community living. As a form of summative assessment, these questions, particularly on why a participant felt it was important to have an archived copy of the website that they chose, was what was used to determine if PATH credit was issued (Table 2).

For the question of whether it is important for the general public to actively archive websites, 97.5% of respondents said “yes.” Some of the justification included allowing everyone to take part in history, providing different perspectives, and the ability to hold people and organizations accountable for their actions. A very small percentage, 0.6% selected both “yes” and “no” as they

Table 2. Summative assessment and reflection questions at the conclusion of the program.

Summative Assessment Questions

What website did you choose to archive?

Why do you feel that it is important to have an archived copy of this website? Please share 2-3 sentences to receive PATH credit.

Yes / No: Do you think that it is important for the general public to actively archive websites?

Why or Why Not?

had not quite made up their minds. One respondent explained, “I think it would be good for everyone to participate in the archiving so they understand its significance, but that may cause the archive to be filled with useless or even inappropriate information. That could cause the important information to become overpowered.” Of the respondents who selected “no,” approximately 1.9%, some of their reasoning indicated the lack of expertise from the general public and similar concerns as above about too much information being saved that isn’t deemed valuable. One respondent explained, “This is supposed to be a way of retrieving information and that information needs to be credible, so if it was open to the general public it might not be facts that are kept.” This type of comment is particularly worrisome as it seems to indicate that the respondent views all information that is archived by cultural heritage institutions as a fact. Therefore, there is a need to more clearly define the role of information professionals and the types of materials that are collected and archived.

Discussion

There was an optional space for students to provide feedback about what they liked, learned, or would like to see next time, as a way for the University Libraries to plan future AVIATE sessions or other programming. Those who did choose to leave a comment, about 69% of total participants, were positive in their assessment. The feedback itself focused both on content and the modality of the program - the interactivity, the mixture of different media to accommodate different learning styles. Some of the modality comments included:

- “I really liked that some of the videos were interactive and had questions and that you weren’t just watching 5 videos for an hour.”
- “I thought the way the information was presented was cool. Especially embedding the websites and videos directly here avoided it being a hassle.”
- “I thought the mix of videos to articles was a good mix. I learned something without feeling like I was being tested.”
- “I really liked the videos, and how there were interactive questions on the slides. It really helped me focus and pay attention.”

This feedback indicates that students were engaged with the content from different media forms. Many comments called attention to the fact that the program concluded with the “hands-on” activity of archiving a webpage using the Save Page Now tool of the Wayback Machine:

- “I definitely liked the interactive component of getting to archive a website myself—that was pretty cool!”
- “I thought it was interesting that you can archive things online, no matter who you are.”
- “I like archiving the website because it made me feel like I was doing something permanent which was fun.”

- “I liked the interactive aspect of archiving my own website! It made me feel very involved instead of just a spectator to the information.”

These comments indicated that for at least some students, this online program had successfully replicated the learning experience of “hands-on” activities that make the physical sessions so successful. Finally, a large amount of comments mentioned how the program introduced them to a topic that they did not know existed, and several mentioned plans for utilizing this tool on their own in the future.

- “Not only did I learn that a webpage can actually be archived, but I also (obviously) learned how to do it. I really enjoyed the videos and links that were provided throughout the sessions, because it was interesting to see how they relate to archives.”
- “This was so neat!!! I had no idea this even existed but now I am probably gonna go mess around with it more.”
- “I liked being able to do something practical. That is, I was shown how to and did archive a webpage, which could have an impact.”
- “I think this is important as each person is interested in different things, and so the websites archived by institutions will be different from the websites archived by the general public.”

These comments in particular, highlight the potential for further research on this topic. The program was conceived based on the perceptions of the Internet from one student intern. A future avenue of study is to look more broadly at the perceptions of the Internet and web archiving from current undergraduate students. The topic of citizen web archiving can foster collaboration for programming, instruction, and collection development across units in the library. There is a connection to information literacy instruction about evaluating sources, since students may not be aware that some potential sources of information on the Internet may already be lost. This also connects to the *Guidelines for Primary Source Literacy* (2018), developed by the Society of American Archivists (SAA) and the Rare Book and Manuscript Section (RBMS) section of the Association of College and Research Libraries (ACRL). Learning objective 2.D from these guidelines recommends that users of primary sources will, “understand that historical records may never have existed, may not have survived, or may not be collected and/or publicly accessible. Existing records may have been shaped by the selectivity and mediation of individuals such as collectors, archivists, librarians, donors, and/or publishers, potentially limiting the sources available for research.” This objective can be taught for both physical and digital materials, with web archiving being one way to look at the selectivity and mediation of sources available to future researchers.

The Citizen Web Archiving program did not ask students to share their grade level, though most programs generally attract a large number of underclassmen due to their need for housing priority. The AVIATE report for the 2020–2021 year indicated that out of 5,075 total participants in AVIATE programs, 64% were in their first or second year. If this program, or an advanced program on the topic, is offered in the future, the program planners would collect more demographic data about the students to inform library instruction.

These results also indicate an opportunity to further involve students, either as student employees or more broadly, in institutional efforts to collect web content using Archive-It. While the directions to archive a website supporting the common good are very open-ended, more targeted instruction could be provided about the University Libraries’ web archiving program, and what types of websites are within the collecting scope of the three special collection units. This would be a valuable way to increase the diversity of material curated in the collections and enable students to feel invested in the web archive collections as a library resource.

The Citizen Web Archiving program also supported one of the University of Dayton's institutional learning goals, "Critical evaluation of our times" which indicates that undergraduate students will be prepared to "evaluate critically and imaginatively the ethical, historical, social, political, technological, economic, and ecological challenges of their times in light of the past" (*Assessment for Student Learning*, n.d.). The readings and videos presented in the tutorial provided historical, social, and ethical context that was thought-provoking and informative. The reflection question and activity developed participant's skills of inquiry, while giving them the freedom of choice to pursue their own interests when selecting a website to archive.

Conclusion

As librarians and archivists continue to pursue web archiving as a form of collection development and preservation, the results and lessons learned from the Citizen Web Archiving program highlight many possibilities for using web archiving as a pedagogical tool. Other web archiving tools exist, such as Conifer, formerly named Webrecorder. In Conifer, users can register for a free account with a limited storage capacity. However, what made the Internet Archive's Wayback Machine so useful for this program is the idea of a collective responsibility to contribute to one data archive. Learning about web archiving helps students understand that the records created online today, are the historical record for tomorrow. It allows them to see how the records they create - from social media posts to blogs for their student groups - have value and document their particular viewpoints and voice. Citizen web archiving also reinforces the idea of civic responsibility to ensure a diverse historical record. Through this co-curricular learning opportunity, students learned why everyone, not just librarians and archivists, should be invested in preserving records for the future.

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