Interim Performance Report: G-1801-05301
Online Educational Resources about technical standards for audiovisual preservation
(Dig4E: Digitization for Everybody)

Paul Conway, Principal Investigator
University of Michigan School of Information
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Progress Report:

Highlight. Digitization for Everybody (Dig4E) has had a very productive and fruitful first year. Highlights include the construction of a rich project web gateway and the underlying content delivery platform, as well as the full development of the detailed curriculum design of the learning units for all three modules (Imaging, Audio, and Video). A module is analogous to an online course, but differs largely in terms of the flexibility that learners have in pursing the learning units within the module. A learning unit is analogous to a week or so of instruction in a typical semester-long residential course.

Activity summary. In the first year, the vast majority of the effort on the project centered on specifying the curriculum design in sufficient detail to allow the recording of audiovisual lessons and the construction of the assessment tools to commence. Each of the three modules (Imaging, Audio, and Video) consists of 14 learning units. Within any given learning unit are multiple components: audiovisual lectures, readings and resources, assignments and activities, and self-directed assessments. Unlike a residential course and atypical of many commercialized online courses, self-directed assessment is transparent and forefronted. In effect, the assessment strategy embeds learning objectives and learning outcomes in a single "quiz."

The work of designing and finalizing the curriculum structure to the level of the individual components involved detailed engagement with the two project consultants (Don Williams and Carl Fleischhauer), onsite consultations with the leaders of the Federal Agencies Digital Guidelines Initiative at the Library of Congress (Tom Rieger and Kate Murray), and iterative feedback from some of the members of the project's expert advisory board. Students in two graduate courses at the University of Michigan School of Information tested and helped revise the pilot versions of auto-graded quizzes. The principal investigator also consulted with the copyright officer of the University of Michigan Library (Melissa Levine) to clarify the limitations of fair use in delivering learning content online.

The second major activity of the first year was the construction of a representational website for the project and the underlying delivery platform for the learning content. The project website is built on a WordPress platform. The primary website for the project is: https://dig4e.sites.uofmhosting.net/. This site provides an entrée to all three modules (Imaging, Audio, and Video) and provides background on the project itself. It is the place where documentation and reports on the project are posted. The structure of the WordPress site reflects the intellectual structure of the modules to the level of the learning unit. As of the end of October, the project website displays a penultimate version of the learning module structure. A final iteration, based on feedback from consultants and advisors, will be in place in January 2020.

The underlying delivery tool is a GitHub repository populated with the content of the learning units and open source code that dynamically renders this content as a website. This modular design optimizes Dig4E for flexible and revisable content. The modular design also allows us to build the learning units iteratively and to reflect feedback from learners in revisions to the content of the modules. All content for the learning units will reside in the open source GitHub repository and will be delivered to the learner dynamically on request. Similarly, the content of the quizzes resides in the GitHub, where individual questions can be modified as needed and where students are provided immediate feedback on their learning. All of the quizzes (at least one per learning unit) will be auto-graded multiple-choice assessments.

Consultants. The project benefitted greatly from the availability of two paid consultants. Don Williams, president of Image Science Associates, visited the University of Michigan in March 2019 and provided invaluable advice on the design and intellectual structure of the Imaging module. Carl Fleischhauer, retired from the Library of Congress, has been an invaluable ongoing source of wisdom and guidance on the design of the Audio and Video modules. As the principal author of IASA TC-06 (2018), Carl is uniquely poised to insure that Dig4E transmits the best advice on the digitization of analog video.

Although not named explicitly in the grant as consultants, Tom Rieger and Kate Murray of the Library of Congress have been instrumental in guiding the design of the curriculum for the Imaging, Audio, and Video modules. Their knowledge and perspectives are spectacular; their generosity in guiding the design of the modules is much valued.

Travel. Utilizing funds provided by the Foundation, the Principal Investigator made two trips to the Library of Congress (Washington DC) to consult with experts and vet the design of the modular curriculum.
- June 26-29, 2019. Met extensively with Tom Rieger and Kate Murray representing FADGI, with Carl Fleischhauer representing IASA.
- October 30 – November 1, 2019. Met extensively with Tom Rieger and Kate Murray representing FADGI, with Carl Fleischhauer representing IASA, and with Scott Pennington representing digital imaging initiatives at the National Archives and Records Administration.

Additionally, project funds supported the travel of consultant Don Williams to Ann Arbor (Feb 27 to March 1, 2019) to advise on the curriculum of the Imaging module and to advise on the current state of digital imaging standards and best practices.

Graduate student support. Four graduate students in the University of Michigan School of Information have made contributions to the project over the past year:
- Evan Haywood. Assemble documentation on audiovisual standards and best practices. Help specify recording equipment needs.
- Elizabeth Popiel. Assemble open access readings, white papers, and audiovisual resources for use in the learning units.
- Jordan Gorzalski. Build and modify the project's WordPress site, including creating a graphic identity that conforms to the University of Michigan branding guidelines.
- Aaron Cheng. Build the underlying content delivery platform in GitHub. Aaron's work was supervised by Dr. Charles Severance at the University of Michigan, who has programmed similar platforms for large scale online courses.

Recording equipment needs. We conducted a thorough investigation of options for building a flexible capability for recording and editing the many audiovisual lectures for the project. The outcome of this

investigation is the decision to utilize a recording studio at the University of Michigan build exclusively for faculty who wish to record their lectures for online delivery. Although there is moderate competition on campus for this facility, we believe that it is far more cost effective to book an existing recording studio than create the capability with Foundation funds. The resources allocated for equipment will be reassigned to defray the costs of graduate students who assist with the recording.

Setbacks or Challenges:

The most significant challenge of the project to date is the complexity of specifying the curriculum design in sufficient detail to permit the learning units to be built. The iterative design process employed in the first year was very time consuming and has resulted in a delay in producing the online content. The iterative design process involved proposing and vetting the detailed learning objectives and intellectual structure of the module with the expert advisory board members and the consultants. With a proposed high level structure in place (analogous to the topical structure of a course syllabus) work to flesh out the lecture concepts, supporting materials, and assessment concepts proceeded. This lower level and more detailed work then typically led to a revision of the top level structure for a given module.

Further complicating curriculum design is our requirement to provide readings and other learning resources that are either in the public domain or already assigned a permissive Creative Commons license. Unlike traditional residential coursed equipped with a password-protected content delivery system (such as Blackboard or Canvas), open educational resources (even those provided at no charge) may not benefit from fair use provisions of the copyright law and do not benefit from the encouraging and permissive provisions of the TEACH Act. Therefore, decisions about the relationship of video lecture content and supporting readings have been driven (unfortunately) by fair use limitations. We did not fully anticipate this challenge in the original design of the project. We have made appropriate adjustments to the plan of work for year two.

A final challenge that has lengthened the curriculum design process is the difficulty in identifying and retaining graduate students to work on the underlying research and development of the learning modules. This challenge has largely been resolved by the end of the first year (October 2019).

Personnel/Contacts:

There have been no changes since the last report to contacts for organizational leadership, management, or grant management staff.

Goals for Next Reporting Period:

January – April 2020
- Update Dig4E website with documentation on module curriculum design.
- Record lessons for learning units in Imaging, Audio, and Video modules.
- Assemble all learning resources for Imaging, Audio, and Video modules.
- Build and release 3-4 online learning units for Audio and Video modules.
- Complete build of online Imaging module.
- Work with consultants (Don Williams and Carl Fleischhauer) to test and revise initial learning units.

- Implement feedback loop with expert advisory board members.
- Provide status reports to FADGI (Tom Rieger) and IASA (Kate Murray, Will Prentice) representatives.
- Test Dig4E Imaging module in graduate course at the University of Michigan.

May – August 2020
- Complete recording of online lessons for Audio and Video modules.
- Conduct interactive workshop on Imaging module at IS&T Archiving 2020 (Washington, DC).
- Test online content for all learning units in Imaging, Audio, and Video modules.
- Engage expert advisory board in testing and evaluating all module content.
- Draft print-on-demand textbook for Imaging, Audio, and Video modules.

September 2020
- Final testing and deployment of Imaging, Audio, Video modules.
- Test Audio and Video modules in graduate course at the University of Michigan
- Disseminate publicity materials through cultural heritage listservs and newsletters.
- Implement workshop on Dig4E Audio and Video modules at IASA 2020 in Dublin, Ireland (late September 2020).

Evaluations:
- We have not undertaken any summative evaluations to date. Evaluation of curriculum content is built into the project through the expert advisory structure.
- Members of expert advisory board have provided feedback on curriculum design
- Leadership of FADGI (Tom Rieger and Kate Murray) have been invaluable in supporting the curriculum development.

Publications and Press:
- 10/18/2018. Press Release announcing Dig4E. https://www.si.umich.edu/news/digitization-everybody-offer-instruction-converting-analog-digital
- 8/2/2019. Briefing on Dig4E at the Research Forum of the SAA Annual Meeting in Austin, TX.
- 8/3/2019. Panel discussion on education for digitization standards. SAA Annual Meeting in Austin, TX.
- 12/1/2019. Proposed paper accepted for special issue of *Journal of Archival Organization.* Expected publication: March 2020. Title: "Digitization for Everybody: Bridging the Educational Gap between Standards and Local Practice."

Additional Information:

Dig4E has garnered considerable interest among the leadership of the International Association of Sound and Audiovisual Archives (IASA), particularly within the Training & Education Committee. IASA seems hopeful that Dig4E will develop the educational resources needed to increase understanding in the cultural heritage community of various IASA standards and guidelines, including TC-04 (2009) Audio and TC-06 (2018) Video. Additionally, the leadership of FADGI has expressed optimism that Dig4E will foster the understanding and implementation of digital imaging standards and best practices as well as foster the use of open source quality metrics and tools (OpenDICE).

Grant Modification Request? None required at this time.