

MIXING IT UP: LIBRARIAN-FACULTY COLLABORATION TO DEVELOP AND IMPLEMENT A DIGITAL LEARNING BADGES PROGRAM PROMOTING INFORMATION LITERACY

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INTRODUCTION

Faculty, future employers and librarians each have an interest in the development of information literate students. The evolving menu of higher education programming including online, traditional, hybrid, and distance learning amplifies the challenges librarians experience in exposing students to information literacy (IL). At Arizona State University (ASU), students across five campuses number over 75,000 with 15% participating in rapidly increasing online-only degree programs and transfer students comprising 45% of the student population. This dynamic environment requires creative solutions to scaling information literacy instruction. The question for ASU Libraries is how can librarians provide all (or most) students with standardized and consistent information literacy instruction?

The *2014 Horizon Report* identifies gamification as a trend in higher education “gaining support among educators who recognize that effectively designed games can stimulate large gains in productivity and creativity among learners” (p. 42). Digital learning badges are one type of gamification, offering great potential for libraries faced with the challenges of reaching students in a variety of learning environments. Badges are a flexible, scalable and sustainable option for delivering instruction and certifying student learning, enabling librarians to address the diversity of student experiences with information literacy regardless of the course delivery format.

Described below is the experience of ASU Libraries in its effort to implement a learning badges program. Tips and lessons learned may serve as a resource for others considering the development of a similar badges system.

DIGITAL LEARNING BADGES

Learning badges, also known as open badges or digital badges, offer an innovative and sustainable mechanism for solving instructional issues. This new delivery mechanism in the world of open access online learning presents a unique opportunity for students to learn and demonstrate information and research proficiency via individual learning objects or modules grouped into skill clusters. Students can earn badges or certificates after working through the required objects and completing quizzes or activities. Badges provide the learner with a symbol or indicator of a task completed, a skill obtained or knowledge achieved, and according to Davidson they motivate learning (2012). Learners can collect and display badges online as a way to share their skills and achievements with instructors for course credit, in social media platforms such as LinkedIn or Facebook, or on resumes and portfolios shared with employers as certification of their skills.

Badges demonstrate flexibility in that they can be constructed and earned using a variety of multimedia delivery modes such as video demonstrations, interactive games, screen captures, etc., depending on the best format for content.

Why Use Badges for Libraries and Learning?

The challenges of reaching students with the kind of information and research instruction that ASU Librarians believe they need are many and no doubt familiar to university librarians everywhere:

- decreasing numbers of librarians with increasing numbers of students
- budgets that are not keeping pace to enhance services

- fewer opportunities to offer in-person library instruction with an increase in online course offerings
- growth in online-only degree programs
- large percentage of transfer students entering ASU with varying research skills and knowledge
- movement towards standards and competency or outcomes based learning
- commitment by ASU to promoting student retention and success
- interest by employers in new graduates with 21st century information skills
- student's preference for self-paced online learning engaging them in the learning process

Learning badge programs are well-suited to meet the challenges presented above. Once in place and operational, learning badges enable smaller numbers of librarians to scale and sustain instruction services to reach larger numbers of students. Instruction can be offered to students when face-to-face instruction is impossible or difficult, such as online only students or transfer students who do not have the same opportunities to learn about the ASU Libraries and research skills that first year students have. Learning badges offer organized and systematic instruction in a flexible format that can be used over and over again and in a variety of ways: as standalone instruction, as a way to “flip the classroom” for a librarian visiting a class in person, as way to use class time on more advanced content by teaching basic skills online, or through the “mixing and matching” of badge modules to achieve specific class objectives or individual program requirements. Many students want to be engaged in the learning process, preferring interactive activities that keep their attention. In addition to meeting those requirements, badges provide a valuable takeaway for students.

THE VISION

Several events in the Fall 2012 semester prompted a small group of ASU librarians to brainstorm long-term solutions to meeting the information skills needs of transfer students. During a student library advisory luncheon several students voiced frustration over the lack of orientations and services targeting transfer students. Around the same time, one of the librarians met with a new faculty member whose area of research involved the study of new media and learning tools, with an emphasis on learning badges.

These events planted the seed that germinated into using learning badges as a vehicle to effectively reach students with needed instruction. Learning badges seemed to have such potential that the librarians developed a larger vision. The creation of an information literacy “curriculum” encased in a digital learning badges framework and platform answered all challenges. The next step was securing the resources needed, and then creating a pilot program of basic badge learning objects.

FIRST STEPS: COMMITMENTS AND COLLABORATIONS

Librarians first approached the Dean of ASU's West campus anchor college, the New College of Interdisciplinary Arts and Sciences (New College), with the idea. The purpose was to gauge the receptivity of New College to library-based learning badges as options for their programs and students. The Dean immediately endorsed the project, committing support for development of badges by way of part-time technology staff assistance. These resources were provided on the contingency that the New College could leverage a future badge program focused on extra-curricular programs designed for student success.

Armed with an enthusiastic commitment from New College, the idea was presented to the Associate University Librarian for Technology. He immediately saw that learning badges could substantially impact the ASU Libraries' mission of contributing to student success and development. Despite limited staffing for new projects, he promised support and help finding a way to accomplish it if approved by the University Librarian.

The University Librarian, also seeing promise in a learning badges program, endorsed it and found money to hire a temporary technical consultant. With important institutional support in place, the three originators recruited additional members: two librarians representing different academic disciplines from another ASU campus; two library staff members with strong technology skills; and the New College instructional designer for online-only programs.

Next, workgroup members identified faculty partners in New College who were willing to participate in piloting the learning badges program. Based on strong collaborative relationships built over time with New College faculty, librarians received promises of cooperation from faculty in multiple disciplinary areas: First Year Composition; Social & Behavioral Sciences; and the Psychology online degree program, the largest online-only degree program offered at ASU.

PROJECT PLAN

The workgroup researched the development and application of learning badges in higher education, specifically in libraries, to create a project plan. This “roadmap” described the project, listing project goals and vision; identified resources both in place and needed, including human, financial and technological; identified deliverables; and spelled out a realistic yet flexible timeline for completion and mechanisms for testing individual modules and evaluating the overall impact of the pilot badges program. The plan also identified core design principles for the badges. Each would incorporate interactive learning modules; an open badge framework; links to national standards (ACRL); paths to integrate with ASU curriculum; and flexibility, scalability and sustainability.

In concert with the project plan, a tutorial style guide standardizing the format and components of modules was developed, and a document comparing badge module learning outcomes with *ACRL Standards* was created.

BADGE CONTENT AND STRUCTURE

Workgroup members brainstormed core information competencies to include in pilot badge modules that were both linked to the *ACRL Information Literacy Competency Standards for Higher Education* (Appendix A) and aligned with competencies employers identified as necessary for employees (Head, 2012). The initial list, targeting beginning level students, was organized in discrete badge groupings, however, those badge module groupings evolved (Table 1). Pilot modules consisted of an introduction to ASU Libraries, important concepts related to scholarly research, and basic first steps in conducting research. The initial structure required students to successfully complete all modules of a badge; however, faculty wanted the option of selecting individual modules to meet specific course goals. Based on this feedback, the badges structure was adjusted, enabling certificates to be awarded upon successful completion of individual modules within a given badge grouping. The new badge/certificate structure is more flexible, providing opportunities to group certificates into unique badges for specific academic programs.

Table 1: Pilot Badge Modules

Summer 2013	Summer 2014
<p>Explorer</p> <p><i>Introduction to ASU Libraries</i></p> <p><i>Research Starters</i></p> <p><i>Research Guidance</i></p> <p><i>Citing Your Sources</i></p> <p>Scholar</p> <p><i>Introduction to University Research</i></p> <p><i>Scholarly Journals</i></p> <p><i>Web vs. Research Database Searching</i></p> <p>Researcher</p> <p><i>Topic Identification & Selection</i></p> <p><i>Developing and Refining Research Questions</i></p> <p><i>Background Research</i></p> <p>Locator</p> <p><i>Article Finder</i></p>	<p>Explorer</p> <p><i>Introduction to ASU Libraries</i></p> <p><i>Research Guidance</i></p> <p>Scholar</p> <p><i>Introduction to University Research</i></p> <p><i>Scholarly Journals</i></p> <p><i>Web vs. Research Database Searching</i></p> <p><i>Citing Your Sources</i></p> <p>Researcher</p> <p><i>Topic Identification & Selection</i></p> <p><i>Developing and Refining Research Questions</i></p> <p><i>Background Research</i></p> <p>Locator</p> <p><i>Article Finder: Get It @ASU</i></p> <p><i>Library One Search</i></p>

Articulate Storyline was selected as the primary software program to create badge modules because of the ease for early technology adaptors in the library to learn and use the

product, while meeting a key design principle of providing the interactivity important for student engagement within the learning modules. Offered as a packaged tutorial platform, librarians could integrate videos, quizzes and interactive activities.

Members divided into smaller sub-groups to identify learning outcomes and develop scripts and storyboards containing content for the modules using PowerPoint. Upon completion of a module, the two staff members uploaded the PowerPoint content into Storyline for creation of tutorial movies.

BADGE DELIVERY SYSTEMS

A faculty member with expertise in badges presented options for content/learning management systems (LMS) and badge delivery platforms adhering to another design principle—the creation of an open badge product. The successful development of a learning badges program requires a platform for the content, a mechanism for triggering a badge, and a badge delivery system (Table 2). The technical skills and specialized expertise required to successfully implement badges goes beyond the expertise that many librarians possess. One of the challenges is that there are few models to follow since learning badges in academic settings is still new, although Purdue University and the University of Huddersfield in the United Kingdom have developed badge systems. An open badge environment was also critical for achieving the long-term goal of collaborating with community college and school libraries.

The original interest of the workgroup was to develop the content in WordPress and deliver badges through Badges/OS (Credly). At the time, the resources were not in place to follow through with WordPress, so another option, Canvas, was selected as the pilot platform for the content with Mozilla Open Badges as the mechanism for delivering badges. Unfortunately, the technical consultant hired with funding from the ASU Libraries was unsuccessful in providing the platforms needed in Summer 2013. The New College instructional designer garnered resources from her unit to develop a content platform in Blackboard CourseSites with a badge delivery system in Mozilla Open Badges, however, Mozilla temporarily withdrew their badge product indicating that a new product was eight months away, so WordPress was revisited. Luckily circumstances changed once more, allowing the workgroup to again move forward with WordPress and Badges/OS. The table below outlines the timing and barriers to implementation with each iteration of the LMS and badge platforms.

Table 2: LMS and Badge Iterations

Date	LMS	Badge Platforms	Pros and Cons
Spring 2014	<i>WordPress</i>	<i>Badges/OS (Credly)</i>	Requires specialized expertise in <i>WordPress</i> , especially the managing plug-ins Open -
Winter 2013	<i>Blackboard Coursesites</i>	<i>Mozilla Open Badges</i>	<i>Mozilla Open Badges</i> badge delivery platform became unavailable requiring an instant change
Summer 2013	<i>Canvas</i>	<i>Mozilla Open Badges</i>	Canvas would not allow videos in modules to play. Canvas would not allow the interactive functions in <i>Storyline</i> to work No technology solution could be found at the time.

EVALUATION AND ASSESSMENT

The badges program will be assessed in two ways. First, students will be quizzed on learning content to earn certificates and badges. Students will demonstrate knowledge proficiency by attaining 100% on a quiz before a certificate or badge is triggered. Second, while completion of the modules is important, proficiency is a primary interest of the badges workgroup. Thus, some faculty in programs that are participating in the badge pilot agreed to allow assessment of the impact of students’ information literacy in courses.

The overall program will be evaluated with feedback from students and faculty. The quality and usability of the learning modules and badge delivery system will be investigated through surveys, interviews and/or focus groups. These data will inform the future development and implementation of the badges project university-wide.

LESSONS LEARNED

- Identify the project’s underlying goals and values while making sure the design principles reflect those goals.
- Establish an order of priority for the principles to provide common grounding should changes require scaling back.

- Identify and leverage existing resources as well as those needed and be tenacious when there are changes.
- Hire outside expertise thoroughly checking credentials including examples of previous work, asking questions about the capacity to deliver a product on time and having an understanding of the project’s design principles.
- Develop a timeline that is as realistic, flexible and detailed as possible to ensure the project stays on track but adjust as the project develops and changes and have a branding and style guide in place prior to the creation of learning objects.

NEXT STEPS

The initial badge modules, originally scheduled for piloting in 2013-2014, now have a target of 2014-2015. Original modules are undergoing edits and revisions to ensure content conforms to the style guide now in place. As pilot modules are finalized and piloted, additional badges—which were previously identified but not developed—will be created and added to a menu from which faculty and librarians can select.

A carefully constructed and sequenced learning badge program allows ASU Librarians to promote it as a “complimentary” requirement for students. For example, a degree program might require students to complete an “orientation and basic skills” module or badge in their first semester at the University, or package several badges together to create a “boot camp” for online-only students. As students’ progress in their academic careers, they could complete other more advanced or subject specific research badges, or independently choose to earn badges that symbolize those proficiencies that they would like to show prospective employers. Individual subject librarians, using existing badge modules and creating subject badges for their degree programs, could develop unique disciplinary badges. The certifying function of awarding badges would allow faculty and degree advisors to determine a student’s compliance with completion requirements.

Looking further into the future, librarians see enormous potential for the integration of badges in academic programs beyond those in the pilot, as well as the opportunity to collaborate with community college and high school librarians to build information literacy skills before students enter the university.

BIBLIOGRAPHY

- Bowen, K. & Thomas, A. (2014). Badges: A common currency for learning. *Change: The Magazine of Higher Learning*, 46(1): 21-25.
- Davidson, C. (2012, Feb. 21). Can Badging Be the Zipcar of Testing and Assessment? [Blog comment]. Retrieved from <http://dmlcentral.net/blog/cathy-davidson/can-badging-be-zipcar-testing-and-assessment>
- Head, A. J. (2012, Oct. 15). *Learning curve: How college graduates solve information problems once they join the workplace*. Seattle: Project Information Literacy Research Report. Retrieved from http://pil_fall2012_workplacestudy_fullreport_revised.pdf
- Information literacy badge: first draft*. (2013, Jan. 15). [Blog comment]. Retrieved from <http://infolitlibrarian.blogspot.com/2013/01/information-literacy-badge-first-draft.html>
- Information literacy competency standards for higher education*. (2000). Chicago: American Library Association. Retrieved from <http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf>
- Johnson, L., Adams, Becker S., Estrada, V., Freeman, A. (2014). *NMC Horizon Report: 2014 higher education edition*. Austin: The New Media Consortium. Retrieved from <http://cdn.nmc.org/media/2014-nmc-horizon-report-he-EN-SC.pdf>
- Tally, S. (2012, Sept. 11). Digital badges show students' skills along with degree. Retrieved from <http://www.purdue.edu/newsroom/releases/2012/Q3/digital-badges-show-students-skills-along-with-degree.html>
- Wells, V. (2012, June 28). *Digital badges for library research*. [Blog comment]. Retrieved from <http://acrlog.org/2012/06/28/digital-badges-for-library-research/>

APPENDIX A

Badge Module Learning Outcomes Matched to ACRL Information Literacy Standards



Explorer Badge

Module: Introduction to ASU Libraries

Learning Outcomes:

You will be able to

- recognize that there are multiple locations for the ASU Libraries
- describe how library collections are available in different formats and locations
- access resources and services online and in-person
 - MyASU
 - Library home page
 - Downloadable toolbar
- recognize and define the purpose of your 3 library accounts
- explain the importance of your ASUwrite ID

ACRL Standards:

There are no corresponding ACRL Standards for orientation to individual library's or library systems.

Module: Research Guidance

Learning Outcomes:

You will be able to:

- recognize the importance of using the Ask-a-Librarian service
- identify and differentiate the 4 ways to access the service
- recognize the importance of ASU Libraries' Library Guides
- distinguish the different types of library guides
- locate and search for library guides

ACRL Standards:

Standard Two, PI 3: "The information literate student retrieves information online or in person using a variety of methods"



Scholar Badge

Module: Introduction to University Research

Learning Outcomes:

You will be able to:

- articulate the features that make academic research unique & different
- recognize how scholars operate and conduct their scholarly work
- understand that scholars begin with existing knowledge to determine research direction
- recognize that citing others work establishes your credibility
- understand that the evidence you find and use establishes your credibility and the credibility of your research

ACRL Standards:

Standard One, PI 1, Outcome f: “Recognizes that existing information can be combined with original thought, experimentation and/or analysis to produce new information”

Standard One, PI 2, Outcome a: “Knows how information is formally and informally produced, organized, and disseminated”

Standard One, PI 2, Outcome d: “Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)”

Standard Three, PI 2, Outcome d: “Recognizes the cultural, physical, or other context within which the information was created and understands the impact of context on interpreting the information”

Module: Scholarly Journals

Learning Outcomes:

You will be able to

- identify a scholarly journal article by its distinguishing characteristics
- recognize differences between journal and magazine articles

ACRL Standards:

Standard One, PI 1, Outcome d: “Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)”

Standard Three, PI 2: “The information literate student articulates and applies initial criteria for evaluating both the information and its sources”

- Section Learning Outcome: “identify a scholarly journal article by its distinguishing characteristics.”

Standard Five, PI 3: “The information literate student acknowledges the use of information sources in communicating the product or performance”

Module: Web vs. Research Database Searching

Learning Outcomes:

You will be able to

- differentiate between Library research databases and sites on the open web, especially to access scholarly articles
- articulate the reasons that searching the open web (using Google) does not regularly retrieve scholarly journals
- recognize the differences between searching the web and searching research databases
 - distinguish between the types and quality of resources available and the differences in search results
 - explain how searching library research databases allows you to access free full-text resources
 - realize databases searches can be narrowed and limited to scholarly resources
- identify the different type of websites such as .edu, .com etc and recognize the type of information each contains

ACRL Standards:

Standard One, PI 2, Outcome d: “Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)”

Standard Two, PI 1, Outcome c: “Investigates the scope, content, and organization of information retrieval systems”

Standard Two, PI 3, Outcome a: “Uses various search systems to retrieve information in a variety of formats”

Standard Three, PI 2, Outcome 2: “Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias”

Module: Citing Your Sources

Learning Outcomes

You will be able to:

- describe the importance of citing sources
- locate library guides about citing sources
- recognize that different citation styles are used in different disciplines
- recognize in-text citations and relationship to a bibliography
- identify the differences in citation styles such as APA and MLA
- recognize and understand the importance of tools such as RefWorks for citing sources
- locate Library Guides for assistance in creating proper citations:
 - Citation Styles Library Guide
 - RefWorks Library Guide

ACRL Standards:

Standard Five, PI 2, Outcome f: “Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his or her own”

Standard Five, PI 3, Outcome a: “Selects an appropriate documentation style and uses it consistently to cite sources”



Researcher Badge

Module: Identifying and Selecting a Topic

Learning Outcomes:

You will be able to:

- define and articulate a need for information
- brainstorm interests and identify general subjects to research
- select and analyze a topic that has opportunity for successful completion
- describe how to broaden and narrow topic as needed
- define topic in terms of time period, geographic region, audience, & relevance
- recognize how to turn a topic into a research question
- identify relevant sources that match topic with assignment requirements

ACRL Standards:

Standard One, PI 1, Outcome b: "...formulates questions based on the information need"

Standard One, PI 1, Outcome d: "Defines or modifies the information need to achieve a manageable focus"

Module: Developing and Refining a Research Question

Learning Outcomes:

You will be able to:

- differentiate between a research topic and a research question
 - define a topic
 - define a research question
 - define and implement the characteristics of a successful research question
- articulate the purpose of a research question in academic research
- apply guidelines for turning a research topic into a research question:
 - develop a research question using who, what, where, when, why and how questions

ACRL Standards:

Standard One, PI 1: "The information literate student defines and articulates the need for information"

Module: Background Research

Learning Outcomes:

You will be able to:

- identify the need for and value of additional information or background data
- recognize the different kinds of information located in background sources
- identify the types of sources that supply background information
- identify and search selected sources in the ASU Libraries' online collections for gathering background information and increasing knowledge and understanding of topic

- identify specialized resources for subject-related background information
- use background information to answer questions and create additional questions
- use background information to clarify search terms

ACRL Standards:

Standard One, PI 1, Outcome c: “Explores general information sources to increase familiarity with the topic”

Standard One, PI 2: “The information literate student identifies a variety of types and formats of potential sources for information”



Locator Badge

Module: *Get It!@ASU*

Learning Outcomes:

You will be able to:

- recognize the Get It!@ASU button when attached to a database citation
- describe the purpose of the Get It!@ASU service to retrieve the full text of articles
- recognize full-text access differences within Get It!@ASU
- demonstrate the use of Get It!@ASU to locate and retrieve articles needed
 - when an article is available online in another source
 - when an article is not available online
 - when an article should be requested through Interlibrary Loan [ILLIAD]

ACRL Standards:

Standard Two, PI 3, Outcome c: “Uses specialized online or in person services available at the institution to retrieve information needed”

Module: *Library One Search*

Learning Outcomes:

You will be able to:

- recognize the ASU Libraries’ unified discovery tool *Library One Search* as a starting point for research
- conduct a simple keyword search in *Library One Search* to find:
 - scholarly and peer-reviewed journal articles
 - books, especially e-books full-text online
- locate the full text of articles via *Library One Search*

ACRL Standards:

Standard Two, PI 3, Outcome a: “Uses various search systems to retrieve information in a variety of formats”