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The Digital Badge Initiative and its Implications for First-Year Writing

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The Digital Badges Initiative and its Implications for First-Year Writing

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Dedicated to First-Year Writing Instructors who love this field

and to my mother for continuously supporting my pursuits

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Abstract

College students seek degrees to obtain employment in their field of interest, however, as the 21st century progresses, employers are often requiring specific skills in addition to degrees and transcripts. As students graduate with their Associates, Bachelors, and Graduate degrees, they plan to present these degrees as sufficient evidence of their qualifications. However, there is recent criticism of college degrees as evidence of qualifications. A beneficial alternative for students would be digital badges. A digital badge is a visual representation that signifies a specific achievement with detailed metadata attached. Digital badges in first-year writing courses would benefit students as they develop specific writing and critical thinking skills as prompted by the curriculum. First-year writing digital badges can include: researching, synthesizing, writing process, constructing authority, etc. as deemed appropriate by the instructor. Ultimately, students will display their badges on their resumes, CVs, or any other document verifying their achievements.

Keywords: digital badges, first-year writing, college students, alternative credentials, information literacy

1. Introduction

The 21st century has spiked in digital technology use leaving a digital footprint in all aspects of life, including classrooms. Computers have not only taken a role in the composition classrooms, but the internet has become an undeniable force in the pursuit of learning in higher education. Writing instructors are required to adapt and even implement digital modes into their course instruction, perhaps even integrating it into course objectives. As of 2014, the Council of Writing Program Administrators included technology use in some of its revised course outcomes for first-year writing. For example, students should be able to "understand and use a variety of technologies to address a range of audiences," and "adapt composing processes for a variety of technologies and modalities." Student writing has surpassed relying on print medium and has evolved into writing in different formats including word processors, blogs, Facebook posts, Tweets, ePortfolios, and even visual forms of communication like Instagram and Vine. Historically, students tended to separate what they consider "academic" writing from the writing they compose in their daily lives. However, writing instructors now have the opportunity to connect the outcomes of college writing more easily to the skills used and needed in professional and daily work by utilizing these varying digital mediums. College writing courses have the option to embrace multimodal composing and push students to understand the interconnectivity among writing genres and mediums.

In addition to the shift in writing styles, there is a focus on the writer's skills as developed throughout the course. Skill development is crucial in assessing success of the course for the instructor and the students. Currently, course grades are the sole indicator of the students' development within the course as the grade indicates excellent, proficient, average or failed. Yet,

as students continue to write academically and their research and critical writing skills improve, what evidence other than course grades can they provide to indicate their development? Tradition has dictated that college degrees suffice as the best credential for potential employees. However, employers often look past a degree, demanding skills or experience the candidate possesses. Employers are left wondering what specific critical thinking skills a collegiate degree may indicate as they evaluate candidates. For first-year writing students, digital badges may offer a solution for providing visual credit achievement for specific skills developed.

According to the Alliance for Excellent Education, a digital badge is a visual representation that signifies a specific achievement with detailed metadata attached (1). Digital badges are being used to provide visualizations of achieved skills in multiple task forces, including employment and higher education. Today's badges are digital credentials that represent skills, interests, and achievements earned by an individual through specific projects, programs, courses, and other activities. Badges are slowly being introduced and utilized in college curricula. Universities including Purdue, Carnegie Mellon, University of California Davis, and Coastal Carolina University are using digital badges as an additional form of credit achievement that complements assessing student work. For the first-year writing course, I will discuss the ways in which digital badges could reinforce the levels of engagement with multimodal, digital, and technological literacies and the ways they credit specific skills developed. Additionally, I will describe the ways digital badges function as a platform for incorporating information literacy frameworks into composition curricula. Lastly, I will elaborate on the ways digital badges could serve to create a writing across the curriculum network, and ultimately provide an alternative means of assessment.

2. Creating Digital Badges for the First-Year Writing Classroom

In 2013, the Alliance for Excellent Education and the Mozilla Foundation created the report, *Expanding Education and Workforce Opportunities Through Digital Badge*s that explores digital badges and how they can be used to improve student learning and outcomes, as well as expand vocational and interest-based skills for learners of all ages. According to the report, there is a learning ecosystem behind the badges that make them powerful and connected to credentials. This ecosystem is made up of badge "issuers," badge "earners," and badge "consumers" (Alliance, 3). Badge issuers are individuals, schools, employers, institutions, communities, or groups that create credentials to demonstrate mastery of skills and achievements that are of particular value to the issuer. An issuer creates a set of competencies or curriculum and the assessment to determine if the earner has acquired the necessary skills for the badge. While the badge itself is not a method of assessment, it represents certain outcome and provides access to information about that assessment. A badge is hyperlinked to something that demonstrates the criteria for the badge and evidence such as an artifact, testimonial, or document. The issuer stores the information within the badge to verify the learning that has occurred. While an information model for badges is standard, each badge has custom information to reflect its meaning, so badges do not need to be the same across organizations or sectors.

Badge earners are individuals who are learning and want to demonstrate a complete picture of their skills and accomplishments to various audiences. Badges also give the earner control over how to use the credential and a path for continued advancement and lifelong learning. Badge consumers can be formal and information education providers, individuals,

employers, communities, or other groups that have a need for, or interest in, people with the skills and achievements symbolized by a badge.

Badges could play an important role in competency-based postsecondary education and perhaps specifically in writing classrooms. Competency-based education allows students to advance by demonstrating that they have attained certain competencies rather than by showing that they have spent a certain amount of time in class (Alliance 4). Badges issued by colleges and universities could serve as evidence of students' demonstrated master of content, even content acquired outside of the formal learning environment. Badges can provide a learning "map" to help learners see the skills that matter and the options for gaining those skills. Students who want to be hired for specific jobs in particular fields can tailor their learning experiences, seek learning opportunities, and receive badges that align with what employers are seeking. Bob Wise, president of the Alliance for Excellent Education and former governor of West Virginia, explained:

> Digital badges are making anytime, anywhere learning a reality for learners of all ages who want to pursue their interests with tangible results in real time. Badges bridge the divide between formal and informal education, and they have the power to transform competency-based learning and hiring practices (Alliance 1).

Open Badges can connect learners to better jobs and opportunities, allowing them to increase skillsets and marketability. In return, employers can look beyond abstract credentials or self-reported resumes and get credible information on candidates—finding a better match, and unlocking a better future for all involved (Alliance 1).

As higher education accommodates new forms of learning and new workforce needs, skills are being assessed across an ever-widening range of activities across the learning

landscape. Campus-based and online degree programs, professional certificates, competency-based education, open online courses, cocurricular and extracurricular activities, and programs in service learning, and information literacy are just some of the many settings within higher education where competencies worth recognizing are demonstrated or observed. Digital badges unify the learning that happens in these diverse contexts—often at a relatively granular level—with a common and portable representation of achievement. Diaz, Finkelstein, and Manning propose the use of badges can also help connect a series or progression of learning experiences, illuminate pathways to learners, and more clearly demonstrate achievements to an external audience (2). The digital nature of these credentials provides significant affordances and can offer greater ongoing value than more traditional formats for recognizing or recording learning, such as a degree, an academic course level transcript, or a paper-based certificate of completion (Diaz, et. al., 3). A diverse and rapidly growing set of examples in higher education illustrates the marriage between the unique benefits of digital badges and learning programs that emphasize discrete competencies, skill mastery, or credentials as certified outcomes.

For writing classes using digital formats of composition, a badge that represents achieved skills in writing and information literacy could be a beneficial component to the established curriculum. Currently, Coastal Carolina University uses a digital badging system for their first-year writing program. The badges are earned in English Composition I and II and the courses include an online model for the badges that adds an additional fourth credit hour to the traditionally three-credit-hour English courses taken by students in the first two semesters. The new badge implementation aims to improve student retention, establish a unified experience for students and support the development of faculty through a multimodal approach to the teaching of composition (Paster and Reid, 1).

The program, referred to as Coastal Composition Commons, is an external site that was constructed using a WordPress theme coupled with the BadgeOS plugin, a free program that enables credit issuing in the form of digital badges. The badges themselves were developed with Credly, a free online service that allows users to create, customize, store and issue achievement-based digital badges. In total the only cost of the program development has been the domain hosting fee. Because the Coastal Composition Commons is a standalone site, faculty simply embed the URL into their preferred class page, like Blackboard or Moodle, or share it with students via email (Paster and Reid, 1). The page opens a new window where students login with their university credentials. Each badge has one or more steps that must be completed, leading up to a final assignment. The steps typically involve reading an online text that resembles a chapter from a digital textbook, viewing embedded videos and listening to podcasts. Examples of final assignments include composing a document synthesizing sources, producing a summary of an article or submitting a review of a peers work. Upon submission, the work is reviewed by the instructor, and students are either awarded or denied the badge based on the quality of their submissions.

3. Incorporating Information Literacy into Composition Curricula

Digital badges can also be used in terms of validating students' information literacy retention. The Association of College Research Libraries established a framework for information literacy in higher education, and this framework guides educators wishing to establish information literacy instruction at their institutions. The framework is organized into six frames, each consisting of a concept central to information literacy, a set of knowledge practices, and a set of dispositions. The six concepts that anchor the frames are: authority is constructed and contextual, information creation as a process, information has value, research as

inquiry, scholarship as conversation, and searching as strategic exploration (Bravender, McClure, and Shaub, 10). The ACRL claims the frameworks draw significantly upon the concept of metaliteracy which offers a "renewed vision of information literacy as an overarching set of abilities in which students are consumers and creators of information who can participate successfully in collaborative spaces" (Bravender, et. al., 6). Metaliteracy demands behavioral, affective, cognitive, and metacognitive engagement with the information ecosystem. Digital badges can function as a way to engage students in a collaborative space by allowing the student to work online through different modules and resources.

Even though information literacy has long been considered a theory of study on its own, its multi-functionality allows for it to be integrated in other useful areas of study, like composition and research based writing. While composition programs are frequently responsible for teaching basic research writing, it is still common practice to limit lessons in information literacy to "one-shot" library instruction sessions. This practice reinforces the perception that the research process is separate from (and simpler than) the writing process, that teaching students effective research practices can be reduced to a single, skills-based class session, and that, ultimately, literacy in information is only useful if tied to the academic research paper. It can be argued that writing and information literacy are complimentary processes that need to be integrated into multiple, contextual classrooms. Through collaboration and shared responsibility, writing teachers and librarians can better incorporate information literacy instruction within composition programs and improve students' research options and behaviors. According to Diane VanderPol, Jeanne M. Brown, and Patricia Iannuzzi, information literacy enables students to determine the nature of information needed to solve a problem, find targeted information and evaluate its reliability and usefulness, apply and analyze the information to create new

knowledge, and function with an understanding of the ethical and financial contexts of their information use (12). These abilities are similar, if not identical, to the abilities of competent and successful first-year writing students.

Because composition instructors commonly bear responsibility for general research instruction, helping students to take advantage of such resources—and to use them creatively, purposefully, and thoughtfully—should be a prominent goal in our pedagogy and curriculum design. Indeed, in highlighting the importance of information literacy in all disciplines and at every academic level, professional organizations such as the American Library Association (ALA) and the Association of College and Research Libraries (ACRL) have effectively set the stage for those who wish to infuse both writing and research across the curriculum. Librarians use the term "one-shot instruction" to describe brief library sessions in which they are asked to teach students all the skills they need to become information literacy. The term is thus meant to describe and convey the futility of these sessions. Instead of providing any meaningful sense of what it means to engage the complexity of scholarly research, one-shot instructions provide just enough basic skill training for the student to find the 3-5 sources required to write their composition paper. One-shot instruction seems to be the primary means of introducing students to research in their first-year writing course work and it seems to indicate that information literacy has not yet been adequately and practically integrated within introductory composition courses.

Prior to 2009, the majority of scholarship that seeks to theorize the influence of information literacy instruction within composition classrooms-or the role of writing information literacy instruction--appears in journals outside the field of Composition. While two recent articles on composition and information literacy have appeared in journals such as *Composition*

Forum and *WPA*: *Writing Program Administration*, articles on integrating information literacy and the writing curriculum published earlier in the decade by Rolf Norgaard and Barbara D'Angelo and Barry Maid appeared in journals devoted to library and information science. Published accounts on collaborative Information literacy instruction commonly represent how particular programs have integrated library and research instruction within specific writing courses, or using particular collaborative models. Even though awareness of the role information literacy plays in developing effective writing strategies appears to be growing, it can be agreed with Norgaard that "given how much classroom practice in rhetoric and composition involves helping students with inquiry and research, it is nothing short of surprising how little the field has written about information literacy and library collaboration" ("Contributions" 125). This tendency to resist more comprehensive disciplinary understanding of the global, recursive relationships between information literacy and student writing may serve to perpetuate outmoded notions of what it means to be information literate, or what it means to compose in a digital age. As with writing, practice in research and information literacy has evolved from a concept largely associated with a set of discrete skills required to produce a polished and complete product (e.g., locating, gathering, and documenting sources), into a reciprocal and sophisticated process for interpreting, integrating, and sharing information.

In their work "A Blended Method of Integrating Information Literacy Instruction into English Composition Classes," librarians Leslie Sult and Vicki Mills indicate that practically and philosophically, there is a "natural fit and shared goals of information literacy and English composition programs," as both "writing and researching are viewed as non-linear processes and both require individuals to work back and forth though a number of stages of discovery, development, and critical thinking" (369-70). To prove their point, Sult and Mills provide a table

drawing clear parallels between the Council of Writing Program Administrators' Outcomes Statement and the ACRL Standards for Information Literacy. Indeed, the ACRL indicates that successful information literacy programs, "depend on collaboration between classroom faculty, academic administrators, librarians and other information professionals" ("Information Literacy for Faculty and Administrators"). As Sult and Mills explain, "For a multitude of reasons, budgetary constraints, personnel reductions, and questions of efficacy, libraries and librarians are being challenged to develop more integrated methods for assisting faculty, instructors, and students in teaching and learning information literacy skills" (368). To do so, university libraries often reach out to established programs such as first-year experience seminars, first-year writing courses, writing centers, service learning courses, or writing-intensive courses. All of these partnerships can be successful; yet, "throughout the library instruction literature, it has long been held that targeting first year English composition courses is an effective means of incorporating information literacy into the curriculum" because it is typically required for new students and requires research-based writing (369). Since the English department, which typically houses first-year writing, serves to achieve similar objectives as information literacy programs, would benefit from a mutual partnership.

4. Case Studies of Information Literacy Related Digital Badges in Writing Classrooms

In what follows, I discuss two university programs that have adopted a variation of information literacy related digital badges. The University of Central Florida has developed digital badge modules that assess students' information literacy education. When the students score 80% or higher on the module, they earn a digital badge that is transferred into their Credly account. Credly designs and issues badges that meet the Mozilla standard for digital badges, and links the badges to students' Credly profiles or Linked In accounts. University of Central

Florida's modules include: avoiding plagiarism, citing sources, evaluating websites, and developing search strategies. The individual modules are grouped into three functional categories: Gather, Evaluate, and Use. Students who successfully complete all of the modules in one of the categories are awarded a secondary badge validating their competency in this functional area. Students who earn all three of the secondary badges are awarded a culminating, high-level badge recognizing mastery of foundational information literacy skills and knowledge required within UCF's academic context. Students may choose to make some or all of their badges viewable publicly via Credly.

Another example is the way the University of Notre Dame has developed a system of badges that are importable to student ePortfolios. This development is a response to students not taking full advantage of ePortfolios to document the integration of formal and informal learning. Therefore, the university's Kaneb Center for Teaching and Learning decided the solution would be to promote the inclusion of digital badges in the ePortfoio. "If we are going to harness the full power and promise of ePortfolios beyond a single course assignment and show employers what students know and can do, then we need the digital badge to communicate specific competencies," explained G. Alex Ambrose, associate director of ePortfolio assessment at the university. Ambrose and his team came up with a campus wide strategy to develop a technology integration for the university's digital badge and ePortfolio systems (Lloyd, 1).

The badges' integration into the ePortfolios came about in three phases. First, Notre Dame's Digication ePortfolio system coordinated between other campus-based systems and students who wished to earn badges were asked to submit evidence to Digication's backend Assessment Management System. The evidence for the badges was collected, scored, and stored and after the evidence was evaluated the badges could be awarded. The earner would be sent a

badge and picture file to display in their ePortfolio, along with a verification link that connected back to Notre Dame's badge directory. As the project grew to the next phase, the tech team explored faster, easier, and free ways to issue, claim, and verify badges. Ambrose and his colleagues set up free accounts on digital badge service Credly, so students could have easier access to the next wave of badges. In the final phase, Notre Dame partnered with Credly and Digication to create a tighter integration that links student account profiles and provides a simple way to embed Credly digital badges into a Digication ePortfolio content module.

That integration has fueled change in their ePortfolio community overall as the need to integrate digital badge and ePortfolio technologies gains attention, Ambrose explained. Their team is now beginning to explore what hyperlinks to ePortfolios and digital badges might look like on an official transcript. Ambrose emphasized that a strong evidence-based assessment culture and platform are essential to creating the space for innovation in designing, developing, delivering, evaluating, issuing and tracking digital badges. One of the greatest impacts of this initiative, added Ambrose, is the model it offers other campuses and institutions for collaborating with vendors to adjust technology to the education sector, rather than the other way around. As Notre Dame has discovered, digital badges can be integrated into ePortfolio systems already adopted by many universities. Additionally, these badges can be customized for multiple disciplines and objectives. EPortfolios showcase students' accomplishments and achievements and these ePortfolios are presented to potential employers as such evidence. A directory of badges for information literacy could enable students to further showcase their achieved skills and distinguish them as more apt candidates for employment.

A recent study by Pennsylvania State University analyzed the potential success of students with digital badges seeking employment opportunities. Victoria Raish, a doctoral

student, and Emily Rimland, the librarian for Learning Innovations at Pennsylvania State University, address the shift in the workplace environment and the way it is shaping employer expectations for proof of specific skills in potential employees in their study "Employer Perceptions of Critical Information Literacy Skills and Digital Badges." "These new workplace demands parallel a shift in librarianship from the traditionally skill-focused information literacy toward the overarching framework of metaliteracy" (Raish and Rimland, 3). They assert that even though college students may have developed critical skills, competencies, and literacies, there is a lack of transparency and proof to show employers that these new graduates possess them. Their reasoning for digital badges matches the current scholarship and argument is in favor of the badges in higher education. They argue a potential way to alleviate issues associated with traditional forms of instruction and the desire to certify granular skills of college graduates is to use digital badges (Raish and Rimland, 4).

The survey Raish and Rimland conducted was to gain the perspective of human resource personnel about which metaliteracy and information literacy related competencies recent college graduates are expected to have when hired and which activities support the development of those competencies (6). They found that an estimated 79% of employers surveyed desire a more specific representation of students' skills when evaluating them for a potential job (20). Only 5% of employers surveyed were not interested in using digital badges as a way to certify student skills, which demonstrates that badges clearly hold potential for representing these skills (23).

An Association of College and Research Libraries' blog touched on this topic by featuring a post about how digital badges can help information literacy become integrated in existing curricula and show the value of information literacy to others (Raish and Rimland, 6). Employers value the higher-order abilities of metaliteracy such as communication, problem-

solving, and synthesizing information and a credentialing system to certify student competency of these areas could be useful for recognizing and representing them to new audiences.

5. Specific Information Literacy Frameworks and WPA Outcomes for Digital Badges

In this section, I discuss specific information literacy frameworks that correlate with standard first-year writing outcomes and propose combining them to create digital badges. Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning. The following are specific frameworks that successfully correspond with WPA outcomes and First Year Writing Outcomes as defined by the University of New Orleans. When these frameworks and outcomes are grouped, they can be used to create specific digital badges that can be incorporated into composition curricula.

Since the publication of the Information Literacy Standards for Higher Education fifteen years ago, academic librarians and their partners in higher education associations have developed learning outcomes, tools, and resources that some institutions have deployed to infuse information literacy concepts and skills into their curricula. The Framework offered by the ALA is called a framework intentionally because it is based on a cluster of core concepts, with flexible options for implementation, rather than on a set of standards, learning outcomes, or any prescriptive enumeration of skills. This Framework is comprised of conceptual understandings that organize many other concepts and ideas about information, research, and scholarship into a coherent whole. These conceptual understandings are informed by the work of Wiggins and McTighe, which focuses on essential concepts and questions in developing curricula and focuses on threshold concepts. Threshold concepts are those ideas in any discipline that are passageways

or portals to enlarged understanding or ways of thinking and practicing within that discipline. Two added elements illustrate important learning goals related to shoe concepts: knowledge practices, which are demonstrations of ways in which learners can increase their understanding of these information literacy concepts and dispositions, which describe ways in which to address the affective, attitudinal, or valuing dimension of learning.

For the purpose of this discussion, I believe these specific frameworks and outcomes create and support an appropriate partnership between the information literacy and composition curricula. When partnered, these frameworks and outcomes provide the student with a cohesive exposure to critical aspects needed for skill development in both composition and information literacy. Following is an outline of specific badges that can be used for each of the frameworks and outcomes discussed.

"Authority is Constructed and Contextual" is a framework defined as: information resources reflect their creators' expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required. An understanding of this concept enables novice learners to critically examine all evidence—be it a short blog post or a peer-reviewed conference proceeding—and to ask relevant questions about origins, context, and suitability for the current information need. The WPA defines a similar outcome for "Critical Thinking" as the ability to locate and evaluate (for credibility, sufficiency, accuracy, timeliness, bias and so on) primary and secondary research materials, including journal articles and essays, books, scholarly and professionally established and maintained databases or archives, and informal electronic networks and internet sources. Successful students of this framework use

research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility; acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, respecting the intellectual property, and participating in communities of practice.

Within the "Authority is Constructed and Contextual" framework an instructor may develop a "Analyzer Badge" and "Synthesizing Badge." The corresponding WPA outcomes suggest successful students determine credibility, accuracy, and bias. An assignment requiring students to assess audience, purpose, context, credibility, and bias would concede the analyzer badge upon successful completion. While the specifics of the assignments are still left to the instructor's discretion, possible options include analyzing digital and/or visual elements, which could easily be incorporated on the class website along with the digital badges. The possible class website would have the assignments and badges mapped out in an efficient and corresponding system. Additionally, the instructor may decide if a badge is earned after completing one assignment or if multiple assignments earn the specific badge. Furthermore, to earn the synthesizer badge, students should develop their own authority by integrating resources with their own writing, demonstrating their own credibility as an inventor and organizer of information.

The second framework for this consideration is "Information Creation as a Process" as is defined as the way information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences. The corresponding WPA outcomes include Use composing processes and tools as a means to

discover and reconsider ideas and adapting composing processes for a variety of technologies and modalities. Successful students of this frame work will recognize that information may be perceived differently based on the format in which it is packaged; monitor the value that is placed upon different types of information products in varying contexts; develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys.

The "Information Creation as Process" framework allows for students to demonstrate their discipline for the writing process. This unit emphasizes the value in creating, drafting, and revising in regards to information organizing and writing with their own voices. Students can earn the "Developing Ideas Badge" and the "Revision Badge" in this unit after demonstrating their process development. The developing ideas badge should correlate with the invention strategies typically taught in first-year writing classrooms. Students can fast write, develop brainstorming lists, investigate their inquiry questions, gather working and background knowledge as evidence for this specific badge. The revision badge should be used to reward students who have made revisions as directed by their instructors. While revision is a process often overlooked by students in terms of its value to developing writing skills, a digital badge in revision would further support its validity.

The final framework worth considering for digital badge development is "Research as Inquiry" and is defined as research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field. Novice learners acquire strategic perspectives on inquiry and a greater repertoire of investigative methods. The final corresponding WPA outcome that support research as inquiry is Use composing processes and tools as a means to discover and reconsider ideas. Successful

students of this frame work will use various research methods, based on need, circumstance, and type of inquiry; organize information in meaningful ways; synthesize ideas gathered from multiple sources; draw reasonable conclusions based on the analysis and interpretation of information.

Research as Inquiry describes the process by which researchers ask questions or state problems in order to find answers to contribute to the large body of existing research within a discipline. This idea is sometimes referred to as "finding gaps in the knowledge." Gap-finding, however, may prove difficult for students who are not already familiar with the existing literature or body of knowledge. This threshold concept is, in a sense, the stepping-off point for many students to find, understand, and use information. The process of formulating a research question or identifying a problem is a self-directed one. It requires a willingness to be open to new ideas, new or differing points of view, and a level of uncertainty that may feel, to a novice, unsettling. These lessons encourage students to view their research through the lens of inquiry and to approach the information-seeking process fully aware that questions may not lead to answers but instead to more questions. This openness of thought and direction helps students get a clear picture of the scholarly conversation around a topic and formulate a more precise question for their own research within that conversation.

The "Research as Inquiry" framework additionally serves as a theme for multiple first-year writing programs as they reinforce the importance of research. Gathering research in the 21st century involves the sifting and evaluating through multiple streams of sources and requires a curious eye. Badges within this framework can simply be named "Researcher Badge" and "Advanced Researcher." Instructors can approve these badges for students who use various methods of research and who also understand the scope of critical thinking required to execute

successful research. Specifically, within this badge or unit, the information literacy librarian should be utilized to teach the class about varying research methods of the 21st century.

6. Earning Digital Badges with Multimodal, Digital, and Technological Literacies

When digital badges are integrated into course curricula, digital, multimodal, and technology literacies are correspondingly required for successful achievement of the badges. Therefore, instructors using digital badges must also consider the varying literacies their students will engage with as they collect their badges. I will discuss some of these literacies in relevancy to digital badge integration. Since the 90s, writing instructors have adapted computers into the classroom. Instructors and students, eager to use the new forms of technology, found digital composing on word processing programs soon replaced typewriting and hand writing essays. Additionally, instructors had to decide how to integrate computer use into their curriculum without altering it to a "computer knowledge" course but rather maintain writing pedagogies as assisted by computer use. Jeanette Harris et al. in "Computers in the Composition Curriculum: Looking Ahead," in the 1989 Fall/Winter issue of WPA argued "that a strong computerized program focuses on writing, not computer technology" (35). Further, they explained computers are only machines and their effectiveness depends on using them to reinforce theories that inform our pedagogy. The additional responsibility of being an expert on instructional technology is not something easily added to an often already overburdened workload. Instructors using digital badges will be responsible for educating students on the website that hosts the digital badges; however, after this initial orientation, the following instruction should be on material related to the skills digital badges validate. The goal is teach students first-year writing skills, and it should not be overshadowed by a computer lesson in learning the digital badge system.

While there is a learning curve pertaining to technology for instructors and students, the 21st century has initiated a wave of student learners already familiar with technology and its functions. Therefore, this learning curve has decreased and instructors can facilitate technology into their classrooms more successfully than before. When used effectively, computers in the composition classroom could benefit students in multiple ways, specifically with digital badges. As students interact with their digital badges and the classroom website where the badges are stored, they will additionally engage with varying literacies. With the development of access to technology in the 21st century, first-year writing students have an additional responsibility to become learners of varying literacies in order to further develop their participation as audience and authority in the way information is constructed and published. The use of digital badges reinforces these literacies, specifically digital, multimodal, and technology.

The texts we now encounter frequently are in digital environments that use multiple modalities to convey meaning--moving and still images, sounds, music, color, words, and animations--that are distributed primarily, albeit not exclusively, via digital media. Although composition theories have evolved to acknowledge and study these new multimodal texts (texts that exceed the alphabetic and may include still and moving images, animations, color, words, music, and sound), the formal assignments that many English composition teachers give to students remain alphabetic and primarily produced via some form of print media. Leading scholar of digital literacy, Cynthia Selfe elaborates, "If our profession continues to focus solely on teaching only alphabetic composition--either online or in print--we run the risk of making composition studies increasingly irrelevant to students engaging in contemporary practices of communication" (p 72). Digital badges and the assignments that earn them, have the potential to

break away from the alphabetic composition as a class website storing the badges would allow varying engagement in the forms of composition. Instructors should select assignments that could function through the class website and utilizes these varying forms. According to Selfe, however, many composition teachers—raised and educated in the age and the landscapes of print—feel hesitate about the task of designing, implementing, and evaluating assignments that call for multimodal texts--texts that incorporate words, images, video, and sound. Consequently, the 21st century demands students skilled in accessing, understanding, and composing these multimodal texts as workforces are constantly updating to accommodate progressing technologies.

Technology literacy refers to a person's ability to access and use technology responsibly and effectively. The International Society for Technology in Education (ISTE) developed technology literacy standards that apply to young students as well as to experienced leaders. Their six areas of competency include: creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving, and decision making, digital citizenship, and technology operations and concepts (Farmer, 88). Information literacy is linked to information technology but has a broader base and implication. Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals (Farmer, 89).

While information transcends technology, as evidences when individuals interview experts, technology certainly impacts information literacy. Thus, technology is used as a learning and productivity tool while information literacy is, in effect, an intellectual framework. A digital badge system in a first-year writing course would effectively engage students with the six areas

of technology competency based on the assignments and levels of engagement the instructor authorizes for the students. First-year writing curricula already supports most of the competencies listed such as research, decision making, and information fluency. Thus, the addition of a digital badge network could successfully add student engagement with digital citizenship and technology concepts. The incorporation of digital technology fosters more independent, learner-centered learning. Maier and Warren suggest several technology-enhanced concepts relating to the utilization of technology as a learning tool, such a digital badges. These concepts include: flexible learning through ubiquitous access to resources, self-paced learning, unhampered by one-shot lectures, and collaborative learning using web-based tools to compare learning and to generate knowledge together.

7. Expanding Digital Badges With Writing Across the Curriculum

An expanded digital badge collection would be ideal for benefiting a writing across the curriculum program. Universities, like Coastal Carolina University have developed a stabilized badge system for their composition courses, but could alternatively expand the collection to include badges for other courses with writing components. Ideally, this would serve as an easier way for universities to record a curricula structure that directly leads to visual indications of achieved student skills. Additionally, the digital badges would allow the students to be reassured they are accumulating developed skills while simultaneously completing their courses. While there is no direct evidence of digital badges used in WAC programs, there lies exponential potential regarding their use for connecting these programs even further.

The University of California at Davis developed a digital badge system for their agricultural department's sustainable agriculture major. It's an interdisciplinary program, featuring collaboration among eight departments in the university's College of Agriculture and

Environmental Sciences as well as the Agricultural Sustainability Institute (Fain 1). The new curriculum is particularly hands-on, with lots of experiential learning occurs outside the classroom and much of that work is not captured by conventional grading. While this program may seem on polar ends of a traditional writing classroom and related WAC programs, I pose to suggest we are no longer functioning in traditional classroom settings. Now, our students are engaged with composing in varying mediums every day, often digital forms instantly published on social media networks.

Our system of communication has shifted to value these new methods of communication and ultimately value is found through it relation to internet/digital based relations. Just as instructors only accept typed writing, students now determine validity through digital relations. With digital badges can see their skills and achievements, and share them through digital platforms for their own benefits. Digital badges offer an alternative to the standardized letter grade concreted to a transcript that limits meaning for a 21st century. Because diplomas and transcripts provide few means of reliably distinguishing employment candidates from their peers, a new credentialing system could solve this problem by providing exponentially more information. Digital learning environments, such as Credly, can save and organize badges and allows people to control information about themselves to prospective employers. In a world where people increasingly interact over distances, electronically, the ability to control online identity is crucial for success. With digital badges and a WAC program, higher education institutions can provide their students with these digital credentials, supporting the claim universities shape students into critical thinkers and scholars of study. Universities and all programs of study are now competing with alternative form of credentialing, like now purchasable in massive open online courses or MOOC courses.

The 21st century has witnessed an increase in the availability of MOOCs. In the workforce where there has been a transition in value of skill over degree, employees are seeking alternative ways to demonstrate achieved skills. Digital badges offered by MOOCs or other companies offering creditable achievement could soon challenge the traditional form of credentialing by institutions of higher education. This transition leaves higher education to either continue proposing grades and degrees as suitable forms of qualifications or higher education can utilize digital badges, like it has ePortfolios and assist its students in showcasing their best skills in addition to earned degrees.

Universities interested in utilizing digital badges in their WAC programs, may consider the reasons proposed by Jonathan Finkelstein, Erin Knight, and Susan Manning in their report, "The Potential and Value of Using Digital Badges for Adult Learners." Finkelstein et al. collaborated on the report with the American Institutes for Research to advocate the use of digital badges in adult learning environments. While their work includes varying environments as adult learning spaces, like employment and volunteer organizations, their methodologies for incorporating digital badges is also appropriate for higher education as an adult learning space. The report explains badges are garnering attention because they represent the convergence of several areas of recent activity and thinking around improving learning outcomes and practical benefits to learners. Badges are at once a way to look at achievement from a multidimensional, metadata-driven perspective; easily mark progress that otherwise goes unacknowledged at a time when there are more ways than ever for people to learn and share; connect or reinforce learner engagement, motivation, and progress; and display evidence of achievement for observers reviewing learner skill sets. Additionally they suggest, the visual nature of badges—including such traits as shape, color, size, text, and iconography—and their relative form and placement in

relationship to other badges makes them very conducive vehicles for illustrating current or anticipated progress toward goals. This concept is beneficial for students earning their degrees and making connections through the courses they have completed. If students completed multiple WAC courses, they could track their digital badge accumulation and mentally organize their progress and development.

Current badge standards call for badge instances to be backed up by an assertion, essentially an online certificate offered or endorsed by the issue that confirms the veracity of the data that a badge purports to represent. Validation serves all three parties to a badge transaction—the earner, the issue, the observer—by fostering a sense of trust in the process by which badges were awarded and rewarded. The earner can feel comfortable knowing the authenticity of the achievement has been affirmed. Although most learners will earn their achievements fairly, any perception that a system lacks to appropriate validation can call into question the integrity of every achievement the system grants.

Digital badges will not detract from the existing form of higher education credentialing of semester grades, transcripts, and degrees. Instead, they have the potential to compliment the already established paradigm and provide students with tangible evidence of their critical thinking growth and development. While the outcomes of digital badge use are still variable due to its recent implementation in higher education, the proposed use by multiple institutions validates the interest in using digital badges and reinforces the need for a form of skill credentialing in higher education.

8. Consequences of Digital Badges

Despite the promising benefits of using digital badges, there are drawbacks concerning its implementation. When technology is integrated into course instruction multiple complexities

must be considered when developing a successful instructional plan. Technology impacts the nature of instruction, highlighting the issue of standardization versus customization (Farmer, 152). On one hand, technology enables instruction to be mass produced and standardized. Course design and resources can be easily duplication and disseminated. On the other hand, with so many resources available because of telecommunications and digitization, learners are more likely to find information that fits their particular needs, and educations can provide learners with more choices in what resources they use or how they can demonstrate knowledge. Technology-based instruction can be structured so that learners can self-pace their work. Digital learning objects, such as digital badges can be stored and accessed for a variety of applications across curricula, which can lead to a one-size-fits-all mentality or can support a learner's specific needs, depending on how they are used. Incorporating technology, like digital badges, is most appropriate when: accessing remote digital resources; building on or repurposing existing digital resources or instruction; encouraging repeated practice; supporting anytime/anywhere learning and/or recording and archiving communication and effort.

Instructors creating digital badges will need to consider the varying types of students and their access to technology. Traditional-aged K-16 students are digital natives, shaped by globalization and technology. For them, the Web is an interpersonal experience more than surfing the Net, and they are likely to multitask with technology tools. Technology also reinforces their desire for choice, customization, and immediate results. Although strong in digital communication skills, these youth are not necessarily strong technology learners. They often do not understand research processes, and are more likely to use the first entries in a Google search or Wikipedia than to perform a Boolean search on subscription databases. In examining the information process of undergraduates, Holliday and Li (2004) noted how the ease

of federated searching and cut-and-paste word processing results in sidestepping critical thinking and other reflective e-learning practices; students tend to settle for "good enough" information (157).

Because digital technology is fairly recent experience for most adults, usually after their initial formal education journey, they may need help accepting technology as a learning tool in order to use it as a means to learn content matter. For example, online learning may be out of the question for some adults because in their minds the technology itself poses a barrier to learning; if they cannot accept the online environment, learners will not be able to have physical and intellectual access to the information itself.

In addition to adult students unfamiliar with technological functions, there is the possibility not all students will have access to the internet outside the classroom environment. In these circumstances, instructors must decide if they will provide students with in class time to complete the badges or if they will require them to be completed outside of classroom instruction. The latter option would force students to use campus computer resources in the form of the library or computer labs. In the case the university serves a larger commuter population, like the University of New Orleans, it must be determined if students will have ample time to spend at the campus computer labs, as these students typically balance work, school, and familial responsibilities.

Instructors using digital badges as a means of conjoining composition instruction and information literacy frameworks must also decide the way they will incorporate information literacy into their course instruction. Traditionally, instructors have either taught information literacy instruction on their own by teaching students about the research process or they have requested information literacy librarians teach their students with class session appointments.

When digital badges are implemented, the instructor must decide if they will teach the information literacy frameworks themselves or communicate with the librarian. In the event the university does support an information literacy librarian, the instructor must depend on professional development as a means of self-education. Consequently, professional development is not an opportunity every English department has budgetary support for, thus positioning the instructor to teach material they are not certified within. Varying academics will argue information literacy is not a study necessitating certification, but rather a concept largely accessible by any amateur; however, it is this argument that validates the need for effective and credible information literacy instruction.

Further consequences of digital badges include the technological knowledge needed to operate a functioning class website storing the badges. While WordPress offers a user-friendly theme that supports digital badge applications, it does require introductory operating system knowledge to successfully navigate the multiple options for page setup and layout. Instructors using digital badges will need to familiarize themselves with the operating system and understand its functionalities not only from the administrator's perspective, but also from the student learner's perspective regarding access into the website. Faculty can use online tutorials explaining digital badge creation through the website Credly and can also use online tutorials for using the WordPress hosting domain. Additionally, the website requires a hosting fee and the instructor will need to seek permission and reimbursement from the university for this expense. Coastal Carolina University adopted the digital badge website departmentally wide, creating one website for multiple instructors rather than a separate website for each instructor. This instructional design is ideal for the department and faculty wishing to fully integrate digital badges into its curriculum.

If a departmentally inclusive digital website is created, the faculty will need to collaborate and agree upon the badges issued by the instructors. The design will require innovative assignments and established criteria for the badges. While I have noted frameworks and outcomes designated by notable organizations, each university department establishes their own writing objectives for students. Ideally, the department would collaborate on a digital badge system and correspond with the information literacy librarians to creative a cohesive, yet extensive digital badging system that accurately validates first-year writing and information literacy skills. Digital badges may also serve as a way for outdated library services to reconnect with 21st century technologies and habits of use. With digital badges for information literacy frameworks, librarians can reinforce the necessity of information literacy skills not only to students, but to their colleagues and administrators who no longer appreciate the library as a viable outlet of student resources.

Lastly, the methodology of assessment with the digital badges will need to be determined. The digital badge is not a form of assessment itself, rather it is a visual indication of an achieved skill or task completion. The assessment still relies on the instructors grading of the students' work and the digital badge does not pose any implications on the act of assessing. The digital badge should serve as a reward for the assessment once successfully completed. However, given this determination, it may still be plausible for departments to use digital badge achievements as a variation of assessment regarding student feedback.

When students earn digital badges, it would be beneficial for those students to provide feedback concerning their disposition towards the badges. Instructors need to know if students consider the badges valuable, useful, and credible. Additionally, departments can measure how many students achieve the badges and integrate them into their social media profiles on Credly

and Linked. It should be determined if students display their badges and use them in a way that further validates their achievements in a way a final course grade cannot. It is undeterminable at this point in digital badge research if they can fully function as a means of assessment concerning first-year student writing development. Finkelstein et al. suggests that assessment is no more inherent to what defines a badge than it is to what defines a diploma, yet most people would rightly assume that some form of evaluation against criteria led up to the moment a badge or diploma was issued. So although badges do not automatically mean the reinvention of assessment, certain unique characteristics of badges do bring the reconsideration of assessment possibilities to the forefront of the conversation about badges (30).

Although digital badges may not be a solution to assessment methodologies, they do encourage self-directed learning. The granular nature of badges, the suitability of offering them through learning opportunities occurring in a variety of places through a range of organizations, the concomitant exploration of alternative forms of assessment including such things as portfolio development, all make badges a particularly helpful approach to individualized goal setting.

Instructors interested in providing skills specific credit for students may want to further research the way digital badges could be customized for their own writing classrooms. While the development of digital badges is a newer aspect of credentialing in higher education, it is a concept that will continue to gain momentum in a skill oriented employment environment. Higher education degrees function as the traditional means of qualification, but I believe they can be improved by the conjunction of digital badges for writing students who are developing researching and critical thinking skills necessary in the 21st century. Instructors further interested in developing their own badges should consider the information provided by Credly, Mozilla

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Vita

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