

ASSESSMENT OF DIGITAL BADGES AND MICROCREDENTIALS ON STUDENT
LEARNING OUTCOMES IN THE INTRODUCTORY PUBLIC SPEAKING COURSE

by

Otis Duncan

B.S., Southern Illinois University, 2018

A Research Paper

Submitted in Partial Fulfillment of the Requirements for the
Master of Arts

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in the Graduate School
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RESEARCH PAPER APPROVAL

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Graduate School
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TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE</u>
LIST OF TABLES.....	ii
LIST OF FIGURES.....	iii
MAJOR HEADINGS	
HEADING 1 – Introduction: Badging in Higher Education	1
HEADING 2 – LITERATURE REVIEW.....	7
HEADING 3 – CASE STUDY	26
HEADING 4 – FINDINGS	38
HEADING 5 – CONCLUSION	48
REFERENCES.....	54
APPENDIX.....	63
VITA	71

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
Table 1 – Southern Illinois University’s institutional learning outcomes	2
Table 2 – Course descriptions for the courses required for the professional communicator credential	4
Table 3 – The badges awarded to students for meeting the five targets	33
Table 4 – Number of students, by section, who completed tasks.....	38
Table 5 – Number of students, by section, with perfect attendance	39
Table 6 – Number of students, by section, who turned in assignments early	40
Table 7 – Number of students, by section, who participated in class at least 5 times ...	41
Table 8 – Number of students, by section, who participated in a discussion board post	42
Table 9 – Number of students, by section, who received 90% or higher.....	43
Table 10 – Average score, by section, in structure, content, and writing.....	47

LIST OF FIGURES

<u>FIGURE</u>	<u>PAGE</u>
Figure 1 – Example of a peer feedback badge on reddit.com	13
Figure 2 – Total score for structure, content, and writing in the outline out of 27	46
Figure 3 – Grade distribution by section.....	47

HEADING 1

INTRODUCTION: BADGING IN HIGHER EDUCATION

DECIDING ON STUDY OF BADGING AND MICRO-CREDENTIALS

During Summer 2019, I had an assistantship in the office of the Associate Provost for Academic Programs (APAP). Southern Illinois University Carbondale (SIU) created the office of the APAP to assist departments with program reviews, assessment, and accreditation by third-party accrediting agencies. Within the APAP office, a Director of Program Review and Assessment regularly oversees department reviews. The Illinois Board of Higher Education requires each degree program to be reviewed on an eight-year cycle. Internal and external reviewers are selected to review a self-study that the department conducts, assess the department, and provide a report to the APAP office with areas of opportunity for the department.

The 2019 institutional review of the Department of Communication Studies suggested expansion of assessment of programs and student learning outcomes (SLOs) throughout the students' journey rather than upon graduation (Mitchell, Wienke, & McIntyre, 2019). Currently, assessment programs only measure the final performance of students completing the program. Therefore, students are not being provided formative feedback related to SLOs as they progress through the program. Neither students nor faculty receive feedback informing them of success markers. The reviewers recommended that faculty should continue to work on an online major program and be more engaged in the assessment of SLOs.

In 2019, SIU created a set of Institutional Learning Outcomes (ILOs) that should inform student learning outcomes in each degree program. The mission statement for

the university, which is meant to guide the ILOs, states,

SIU embraces a unique tradition of access and opportunity, inclusive excellence, innovation in research and creativity, and outstanding teaching focused on nurturing student success. As a nationally ranked public research university and regional economic catalyst, we create and exchange knowledge to shape future leaders, improve our communities, and transform lives. (“Mission Statement,” n.d.)

The institutional learning outcomes state the following: “SIU Carbondale is committed to ensuring that students graduate with the knowledge, experience, critical-thinking skills and cultural competencies they need to make a difference in our world. The following are the outcomes we seek for all of our students” (see Table 1).

Table 1

Southern Illinois University’s Institutional Learning Outcomes

ILO	Description
Civic and Global Engagement	SIU students are informed and engaged citizens who understand the interdependent nature of our society.
Diversity and Inclusivity	SIU students respect the social construction of difference and engage with diverse individuals and groups representing varied races, ethnicities, ages, genders, cultures, abilities, and family structures.
Creative and Critical Inquiry	SIU students apply creative and critical thinking skills to self-directed inquiry.
Communicative and Technical Literacy	SIU students demonstrate fluent communication and effective technology skills appropriate to a discipline.
Ethical Reasoning and Professional Integrity	SIU students demonstrate professional integrity and make informed judgments based on legal and ethical principles.
Disciplinary Knowledge and Application	SIU students apply an understanding of the principles, concepts, and methods within a discipline to issues of professional practice.
Emotional Intelligence and Teamwork	SIU students establish respectful and productive relationships while collaborating on teams to integrate knowledge, skills, and methods of inquiry to find solutions in global, economic, environmental, and/or social context.

Five of the seven ILOs require communication competency: Civic and Global Engagement, Diversity and Inclusivity, Ethical Reasoning and Professional Integrity, Communicative and Technical Literacy, and Emotional Intelligence and Teamwork. To ensure that the SLOs and ILOs were being met, we asked the following question: What does communication competency look like?

One method we discussed to assess and reach SLOs was badging and micro-credentialing. One faculty member, Dr. Craig Engstrom, has already introduced gamification in many of his classes. As a student in classes using gamification, I found myself increasingly motivated and invested in the class. Dr. Engstrom was also working to establish a “Professional Communicator Credential,” which led to identifying which classes in the curriculum would benefit students as they entered the workforce. Faculty decided that four classes would cover the SLOs for professional communication. Each of the classes matched the ILOs defined by SIU (See Table 2).

- The basic oral communication course, Introduction to Oral Communication: Speech, Self, and Society (CMST 101)
- The introductory Interpersonal Communication course (CMST 262)
- The introductory Business and Professional Communication course (CMST 280)
- Interviewing (CMST 383)

The goal then became identifying what communication competency looked like in each of those courses. It is with this goal in mind that I devised the study in this report.

Table 2*Course Descriptions for the Courses Required for the Professional Communicator**Credential*

Course	Description
CMST101 - Introduction to Oral Communication: Speech, Self and Society	This course provides theory and practical application relevant to students' development of basic oral communication competencies appropriate to a variety of contexts as situated in a culturally diverse world.
CMST262 - Interpersonal Communication	"Theoretical approaches and contemporary research on patterns of interpersonal communication in romantic, friendship, family, and work relationships. Emphasis on developing skills for analyzing interpersonal processes through close description and interpretation."
CMST280 - Business & Professional Communication	A competency-based learning course focused on essential communication skills needed to succeed in business and professional settings, including the workplace. Topics include interpersonal communication and emotional intelligence, business writing style, advanced public speaking and presentation techniques, and (pre-) employment processes and documents
CMST383 - Interviewing	Planning, conducting, and analyzing interviews with emphasis on roles of interviewer and respondent in professional and organizational communication settings. Study of factors affecting accuracy, openness, and goal attainment in use of interview methods for evaluation and research. Individual and small group projects with selected aspects of interviewing.

The introductory course, CMST 101, is a part of the Core Curriculum of the university. It is one of three classes that every undergraduate student at SIU must take. MA and Ph.D. students in the Communication Studies department teach approximately 60 sections per academic year (Mitchell, Wienke, & McIntyre, 2019). An Introductory Course Director and a graduate student assistant oversee the graduate instructors.

The introductory Interpersonal course, CMST 262, is required for all Communication Studies students, and counts as a Writing Across the Curriculum

(WAC) elective for Liberal Arts students. A WAC course is an elective that students in Liberal Arts can take to satisfy requirements for writing heavy classes. Two to three sections are offered every semester, typically taught by faculty or Ph.D. students.

The introductory Business and Professional Communication course, CMST 280, is required for all Communication Studies undergraduates. The class is also required for some other majors on campus, including Agribusiness Economics and Sport Administration. The class has recently been revamped to keep up with a changing business environment, and to increase accessibility to students. For example, lectures are delivered online, with one lab section a week consisting of activities and clarification of lecture content. A new online-only section was piloted in fall 2019 with eight students, and a full, 22-student section was launched in spring 2020. One hybrid and one online-only section are offered each semester, taught by faculty or graduate students.

Each of these courses assist students in learning communication competency. These essential skills, sometimes referred to as soft skills, but preferably called core skills, include emotional intelligence, persuasiveness, leadership, critical thinking, and interpersonal and small group communication skills. Core skills are essential for students entering the workforce. Employers look for these core skills in employees (Hurrell, 2016; Robles, 2012). We need to learn what competency in these skills looks like, and how we can create a system to allow students to show potential employers that they have learned and honed these skills through our courses. Digital badging and micro-credentials can serve as an innovative way to give us the tools to assess competency in essential skills while at the same time giving students a means to showcase their skills for potential employers.

In this report, I will first examine the history of badging and how badging is used in higher education. Second, I will discuss ways to digitally assess communication competency. Third, I will discuss a small-scale study on the effects of badging on students in the introduction to oral communication course by collecting data to see the effects badging has on SLOs in two sections of CMST 101. Finally, I will outline how to assess a possible multi-course Professional Communicator Credential program for future study.

HEADING 2

LITERATURE REVIEW

HISTORY OF BADGING

Although the concept of badging is gaining popularity in higher education, humans have used badges and symbols to denote achievements since the beginning of recorded history (Robinson, 2009, p. 5). A badge is an easy way to demonstrate that someone has completed a task, learned or demonstrated a skill, or holds certain values (Halavais, 2012). Badges-as-accomplishments are found everywhere: in schools, in hospitals, in the military, and in any social function that awards or recognizes membership, achievement, or ability.

Halavais (2012) discusses in detail how badges have a long and deep history in social organizations. He has created a comprehensive history of badges, which is outlined in the oft-cited article “A Genealogy of Badges: Inherited Meaning and Monstrous Moral Hybrids.” This article has framed the discussion about digital badges in higher education. As Halavais notes, badges have historically functioned to mark authority, skill, experience, and identity. Badges that require a sacrifice of time, money, or effort and produce no direct economic return create a rapport and trust among group members. Difficult-to-earn badges, which require effort and commitment to maintain, carry an intrinsic social value that does not diminish over time so long as they are institutionally supported. We can compare the marking of skill and experience, the sacrifice of time and money, and the intrinsic social value to the journey towards a degree in higher education (Gibson, Coleman, & Irving, 2016).

Badges mark honors, authority, and may come with certain privileges (Halavais,

2012). Badges mark honor, such as receiving a gold medal in the Olympics. They may also mark dishonor, such as the yellow Stars of David and the pink triangles used during the Holocaust to mark Jews and queer people. If we look at the word “badge” itself, it is a symbol for the police in U.S.-American culture. We see slogans, such as “Back the Badge,” that are meant to support police officers. The badge represents the state power that is given to officers of the law. Officers, when on duty and wearing a badge, can legally carry firearms, speed in vehicles, break into dwellings, arrest individuals, and use lethal force. These privileges are backed by the state upon successful acquisition of the badge.

Badges are awarded to those who complete rare tasks or excel at the top of their field. Badges are given as rewards to those who show great effort in reaching a goal, meeting qualifications, and partaking in certain experiences. To better understand the role of badges, let’s consider three cases that highlight common and recognizable uses of badges and the organizational, social, and cultural advantages of each.

For the first case, let’s examine how badges for marksmanship changed over time (Halavais, 2012). First, the badges were given to those who won competitions. But interest waned in this form of badging because not everyone could compete at an elite level. Badges then shifted to being awarded to those who had gone through training and demonstration of skill in different weapons. As more weapons were introduced, it became costly to get a badge for each, so badging was adapted to cover specific skills common among weapons. Throughout these changes, the badges maintained a stable meaning, skill at marksmanship, though they adapted to the needs of the user and changes in technology. We can see a parallel in higher education. We are interested in

students' broad abilities rather than their specific tasks. In analogy, we might ask the following question: What skills and competencies do students need to demonstrate to be awarded a badge?

For the second case, we can look at the creation of belts to recognize skills in martial arts. Students were discouraged that they were not seeing progress, as they could not compete until they gained mastery. Colored belts were created by a trainer with a pedagogical background to keep students motivated (Halavais, 2012). 10 ranks were created up to mastery, and then 10 ranks were created after mastery to motivate students to keep learning if they did not see immediate results in their overall skills, even though they gained smaller sets of useful skills. Six Sigma, a popular methodology to improve business processes, uses terminology from martial arts to mark those who have completed certain levels of training. Someone who has completed training to be a part of a Six Sigma team is referred to as a Green Belt, while those who have gone through a more thorough training to lead a team and completed a capstone project to show their expertise are referred to as a Black Belt (Peterka, 2008).

As shown above, we see cross-over in badging systems and language. In martial arts, the belts are assessed by demonstrating specific abilities like breaking boards and knowledge of moves. In Six Sigma, belts are assessed by demonstration of methodologies and leading teams. Thus, in education we may analogously ask the following questions: What aspects of these other programs could carry over through badging and assessment? Should different colored belts be awarded for communication competence to give a sense of familiarity for students, or should we create our own symbols to create novelty for students?

In the final case, we can look at changes in Boy Scout badges. Boy Scout merit badges were originally explicitly structured, with scouts completing specific badges to earn their ranks (Ostashewski, & Reid, 2015). However, not all Scouts wanted or needed the badges on the path to upper ranks, and lost interest before gaining higher ranks. The path was then changed to allow Scouts to pick from sets of skills to show their progress. Today, Scouts can choose a diverse set of skills to help them rather than be on a set path. In gameful pedagogy, this is known as *autonomy* (Ryan & Deci, 2000)—giving choice to students. Scouts are rewarded with badges to show their progress towards more significant achievements. Different pathways can reach a goal, just as different classes can fulfill specific requirements towards a degree in higher education. The system of scouting badges fits educational contexts exceptionally well. Thus, we can ask the following question based on this analogy: Should higher education review how credits—and similarly degrees—are awarded to students?

In the above three cases we can see organizational advantages to making skills immediately visible through badges and their analogous parallels with higher education. Not only do badges keep learners motivated, but they also allow people to quickly recognize skills others possess. For example, if you need someone to start a fire, you could ask a Boy Scout; those with the designated fire badge—the one that looks like a campfire—will certainly know how to do it. This Boy Scout has, as marked by the badge, demonstrated fire-starting competence to the organization. Analogously, employers can search for people who have demonstrated competence in specific skillsets during the hiring process—if a badge for the skill exists—ensuring that the applicant is the right person for the right job. What is more, students who achieve these badges are further

motivated, according to self-determination theory (Ryan & Deci, 2000), because being recognized for skills increases confidence to learn more skills.

There are other ways in which badges function. For example, badges also mark experiences and expression. Pilgrims would receive badges upon the successful completion of a pilgrimage to specific sites (Halavais, 2012). These types of badges had multiple functions. One function was to link pilgrims to a community of other pilgrims who had visited the sites. Pilgrimage badges also represented the time and resources that had been spent to make an arduous journey. Specific pilgrimage badges represented the values of the saint of the site, and that the pilgrim was an adherent to those values. Finally, pilgrimage badges were a mark of honor that was met with benefits, including receiving aid and hospitality when traveling. These kinds of badges—those related to values—are appropriate in higher education due to higher education being focused on more than just a transference of skills, but a transference of value consistent with democratic engagement. They also reflect what Ryan and Deci (2000) describe as *relatedness* in self-determination theory, a predominant theory of gameful pedagogy.

Military campaign badges are a form of badges to denote experience in a certain battle or event. Soldiers are marked that they contributed in a campaign, regardless of if they have anything else to show for it. Campaign badges encourage continued service, as people want to receive more badges. Blanc recognized this fact in 1844 when he wrote, “Incited by the promise of a bit of ribbon, to be stuck in the button-holes of the bravest by their emperor, whole armies of Napoleon’s soldiers rushed on to meet death” (pp. 555–556). Thus, badges earned in military service serve a dual purpose. First,

those who are in the military can recognize the specific experiences and skills of other military members. Second, those who are not familiar with the specific badges will recognize that the military member has a lot of experience and has been honored for service. In terms of higher education, a parallel is participation in a class. Students may only do the minimum requirements in a class to earn the grade they prefer. This is especially true in core classes outside of students' area of interest. However, giving badges for participation in the classes would show that the student has competency in an area and has been honored for being a part of the class.

Now that I have shown how badging is a common institutional practice, with many organizational advantages, I will now look at how badging evolved from physical markers to digital icons.

BADGING IN DIGITAL & ONLINE SPACES

Halavais (2012) writes that one of the earliest digital badges featured online was an image of a blue ribbon to promote free speech on the internet. The Electronic Frontier Foundation urged people to post their blue-ribbon badge—which linked back to their website—to resist the passage of the Communications Decency Act in the United States. The badges were widely adopted on business and personal webpages, leading to the Electronic Frontier Foundation being the most linked-to page on the web at the time.

Later, Myspace, one of the first social media sites, introduced badging to identify relationships to causes, brands, and classifications (Halavais, 2012, p. 356). Many of these badges carried over into other social media platforms, such as profile picture filters on Twitter and Facebook. Many community sites feature badges for users doing a

task or providing peer feedback. Twitter users who verify their identity, and that their account is of public interest—e.g., many followers, famous, influencer—receive a blue verified badge (“About Verified Accounts,” n.d.). Community discussion boards often have a system where posts can be upvoted, and users who receive significant upvotes receive a badge that may bestow special privileges, like responding to more posts, moderating users, and so on.

Reddit, for example, has a peer feedback system called Reddit Premium (formerly Reddit Gold), where especially helpful, pertinent, or funny posts can be awarded with silver, gold, or platinum awards which bestow varying levels of privilege (see Figure 1). Gold and platinum rewards allow the user to then award a badge to someone else for their content.



Figure 1

Example of a Peer Feedback Badge on Reddit.com

Jakobsson (2011) writes that video game company Activision included badges in their Atari 2600 and Commodore games in the early 1980s. Booklets included with their

games offered challenges to complete. Players who completed the challenges could take a picture of their television screens, mail them in, and receive iron-on patches. MSN Games featured digital badges for some of their games in the mid-1990s, which were some of the earliest digital badges. The same studio was involved in developing Xbox Live and Xbox 360 achievements, ushering in the current era of video gaming achievements. This is analogous to gamification in higher education. Pilot studies introducing gamification and virtual rewards to students in university classes indicate that these methods are at least as effective as traditional pedagogical methods with the benefit of greater student control and satisfaction in their courses (O'Connor & Cardona, 2019).

As video games became more popular, badges took new forms but maintained the same meanings, like the Marksmen badges. McDaniel (2016) writes that after the Gamerscore achievement system was released in 2005 on the Xbox 360 most other large gaming companies followed suit. Steam, PlayStation Network, Android's Google Play, and iOS Game Center released achievement systems within the next three years. Players receive badges for items as small as completing a tutorial or as large as exploring 100% of a massive digital continent. Since 2005, most U.S.–Americans have been using badging systems on every platform that they game on. Thus, the idea of gamified classrooms with badges is not foreign to students and may make students feel more in control of their education. This is known as *autonomy* in gameful pedagogy (Brühlmann, 2013; Ryan & Deci, 2000).

Marczewski (2015) discusses how gamification techniques affect neurotransmitters in the brains of those playing video games. Because of the

techniques used in games, the brains of many people are wired to react positively to gamification. Of note in this discussion are endorphins and serotonin. Endorphins are released when presented with a challenge, either physically or mentally. They produce a feeling of euphoria to give someone a second wind to push through obstacles. When presented with challenges in a video game, endorphins are released. Serotonin is released when someone feels wanted, important, or proud. It triggers a feeling of happiness and fulfillment. Two ways to trigger a release of serotonin is thanking someone or marking an achievement that required effort. When given a challenge in the classroom, we would expect student endorphins to increase. When badges are awarded by an instructor for completing those challenges, we would expect student serotonin to increase. Thus, there is a scientifically proven reason to use digital badging. A key practical question to ask, then, is as follows: What can instructors do to increase students' learning outcomes? What forms of gamification and badging can be used that will appeal to students?

BADGING IN HIGHER EDUCATION

Diplomas exist as a proxy for skills and knowledge. The diploma only shows that someone has given just enough to achieve a specific goal—finishing coursework to gain a diploma. Unfortunately, the diploma does not give much information on the specific skills gained in specific classes. Two students with a degree in Communication Studies, for example, may have a wildly different set of skills upon graduation. One student may have specialized in performance, another student may have specialized in public relations. One student may have graduated with honors, another with a 2.0-grade point average. The diploma awarded shows that an experience was had, but not what the

experience gave the student. This makes academia vulnerable to de-legitimation, especially in the current climate where employers are looking for specific skill sets in their employees rather than just a diploma (Casner & Barrington, 2006).

Mah, Bellin-Mularski, and Ifenthaler (2016) note that one incredibly important aspect of badging in higher education is that to maintain meaning, badges must be earned and not just given as a proxy, like grades and diplomas. Stakeholders must also see and understand the purpose of badges. Students and stakeholders alike view digital badges as holding high value if they are an integral part of assessment in higher education and have a clear meaning. If the meaning of a badge is not clear, or if badges are given without work done to achieve them, their value is lost.

Ellis, Nunn, and Avella (2016) write that badging and micro-credentials can be used to fill in the specific skill and knowledge information not provided with a diploma. In the example above, the students with different specializations would have the same degree. But the former could also have a micro-credential in staging, one in screenwriting, and one in performance critique; while the latter could have a micro-credential in press release writing, one in social media posting, and one in interviewing. Nevertheless, both would have taken similar courses based on the current curriculum. Thus, both would need to be tested for public speaking and interpersonal communication skills along the learning path and awarded badges for demonstration of each skill.

Various digital badging programs are being tested in universities and colleges across the world (Ellis, Nunn, & Avella, 2016). These digital badging programs range from integrating digital badges into existing structures—like certificates and minors—to

creating a new system of micro-credentials to replace traditional degree programs. The Open University—A university in the UK that was created to open access to higher education to all—is conducting a long-term study on the effects of badges on student motivation and an increase in the employability of its students (Law, Perryman, & Law, 2018). Illinois State University rolled out digital badges in 2015 through the Credly badging platform, awarding over 7,400 badges to honors students in the first year (Fain, 2016).

Kelly (2018) notes that to meet the demands of students, Pearson PLC, a British publicly traded company, offers services for universities seeking to use digital badging, including Growth, Resilience, Instinct, and Tenacity (GRIT) badges. These GRIT badges, which assess core skills, often referred to as “soft skills,” require three levels of completion (GRIT Digital Credentials, n.d.). The first level—GRIT Gauge Completion—requires learners to complete a series of lessons and exercises introducing them to the components of GRIT, their meaning, and their value in their lives. This first level also creates a profile indicating the levels of GRIT the student has. The second level—GRIT Quantitative Achievement—is revisiting these lessons, and assessing growth in the GRIT areas, requiring an aggregate growth of at least 10 points to earn the badge. The third level—GRIT Experiential Achievement—requires students to complete two academic artifacts that exhibit their growth in the GRIT areas and provide evidence of their achievement. The GRIT program has seen tremendous success, as employers can easily determine a candidate’s suitability for a position by visually scanning digital badges. Badges provide a meaningful way to represent non-technical skills that employers are seeking in employees, such as emotional intelligence, persuasiveness,

leadership, critical thinking, and interpersonal and small group communication skills. Skills that our Communication Studies department teaches through its curriculum. The GRIT badging system is very similar to ideas for the Professional Communicator Credential and serves as an example of what the credential could look like.

Gibson, Coleman, and Irving (2016) discuss different ways that badging and micro-credentials can be implemented in higher education to enhance learning and create new opportunities for underserved populations. Streater (2018) notes that digital badges may be the next “great leap forward” in professional development, learning, and assessment. Implementation of digital badges can drive a paradigm shift in education and industry. This raises the question: Should SIU work to be a leader in this paradigm shift, or wait until a framework is fully established before implementing digital badges?

Now that I have described the current use of digital badges in higher education, let’s look at the state of digital badges in industry.

BADGING IN INDUSTRY

Employers spend \$590 billion annually on postsecondary education and training for employees due to a lack of communication skills (Carnevale, Strohl, & Gulish, 2015, p. 3). \$177 billion is spent specifically on formal training—training done in a classroom-type setting. Barrington (2017) writes that 40% of employers in the UK spend over £10,000 re-hiring staff after finding that new hires are not properly qualified, while 10% spend over £40,000. Often prospective employees seem qualified because of their degree, but in practice do not have the skills needed for jobs. There is a significant lack of methods to check qualifications and skills for applicants for jobs. Raish and Rimland (2016) write that employers want more specific representations—like the colored belts

in martial arts and Six Sigma—of skills or abilities to evaluate college graduates for potential jobs. When presented with a visual representation of a badge and a brief explanation of the process, 33% of employers were interested in using digital badges to evaluate potential employees; an additional 62% said they would be open to the idea but needed to learn more.

In 2014, IBM developed a platform for online learning called “Big Data University”—now called Cognitive Class—to provide free technical training developed by top developers and data scientists (Leaser, 2019). Student engagement was lacking, and while there was significant initial participation with the site, students were not finishing their courses. In 2015, IBM therefore developed a digital badge program to attempt to encourage engagement with students. Within weeks, enrollments increased by 129%, retention increased by 226%, and course completion increased by 694% compared to the six-weeks leading up to the digital badge pilot. Following up with the students who took the classes and received the digital badges, IBM found increased performance in employee engagement, sales, and motivation to increase skills for the company. This highlights that something as simple as a digital badge can increase retention and completion rates as well as improve outcomes after completion.

Microsoft recently changed its certification system from specific programs and technologies—e.g. Microsoft Office Suite or Azure Cloud Server—to specific roles—e.g. Web developer, consultant, administrator (Aucoin, 2019). Microsoft found that the focus of digital badging should be on skills and competencies needed for certain positions, rather than the ability to pass a test about specific programs. There is a gap between the knowledge required to earn certifications and the competence and knowledge

needed to perform job tasks, analogous to the gap between earning a diploma as a proxy and earning badges and micro-credentials by demonstrating skills and knowledge.

Organizations like HubSpot Academy (n.d.) offer online courses to marketing, sales, and customer service professionals. After completing a course, users will receive a certification badge that can be shared on social media sites such as LinkedIn. Dr. Engstrom has integrated HubSpot Academy certification, as well as other Massive Online Open Courses (MOOCs) into his curriculum to ensure students can show these badges to employers. Students have generally had a favorable reaction to this form of teaching.

Clearly, digital badging in online learning, as the examples above demonstrate, are effective. Next, I explain how badges can be used to assess competency in higher education.

BADGING AND COMPETENCY IN HIGHER EDUCATION

Higher education is currently trying to meet the needs of students demanding narrow, specific skill sets who also need competence in generally broad categories that apply across a range of different jobs or entrepreneurial activities. Kelly (2018) details how digital badges, prior learning credits, and competency-based learning can help universities adapt to the changing needs of students.

Many students—especially non-traditional students and first-generation students—come to higher education with prior skills and learning that are on par with—or surpass—learning obtained in a classroom setting. Prior learning credits can give those students an advantage while assisting them in completing a degree much faster

in higher education. Gibson, Coleman, & Irving, L. (2016) outline different pathways for students to receive a higher education degree. Prior learning credits can bridge informal and formal learning.

Companies like McDonald's offer transcripts of the trainings that their employees have received through their management program, which teaches many desirable skills (Transfer Your Credits, n.d.) that employers desire. Massive Open Online Courses (MOOCs) are available to learners for free or low cost and can provide skills and knowledge to those without access to higher education. For example, the University of Illinois offers an MBA via Coursera that is about 80% less expensive than the traditional, on-campus MBA. People who are not able to afford a four-year degree from a university may be able to bring these varying credits and badges from outside learning to a university, who could then create a learning plan to award a degree in a much shorter time—and at a much lower cost—than they would have paid otherwise.

The ability to earn non-university badges on their own time, that transfer to credits at a higher education institution, can provide access to higher education to populations that would otherwise never step foot on a campus. Students who bring in non-university credits would still pay tuition and fees for the classes that they need to take to finish the degree. Even if students only take one year of classes, it will provide tuition and fees to universities that are struggling to recruit and retain students.

Addressing prior learning credits in detail is outside the scope of this report but should be a future area of research. I mentioned them because they are an important future step for badging and micro-credentials. SIU should investigate accepting non-university badges as university credits as a way to recruit individuals who are not interested in a

full four-year program but may be interested in an accelerated one- or two-year program. For example, a student can bring in badges from professional organizations, badges from prior learning, and badges from Massive Open Online Courses (MOOC) to fulfill credit requirements towards a degree (Bull, 2015). Previous learning can lead to full semesters of courses that a student wouldn't need to take, letting them get a degree more quickly than having to retake courses with content that they have already learned from outside.

Competency-based learning exists in certain contexts in higher education. The College Level Examination Program (CLEP) allows students to show competence in 34 subject areas through competence exams, leading to credit for many undergraduate programs (CLEP, n.d.). The Council for Adult and Experiential Learning guides institutions towards better SLOs by awarding credit for learning rather than forcing "seat time" or time spent in class (Kelly, 2018). Students who receive prior-learning credits through competency-based learning are 2.5 times more likely to graduate.

Many universities are examining digital badges to keep up with students' needs, and to combat recruitment and retention problems. Now I will look at what SIU has done concerning badging.

BADGING AT SIU AND COMMUNICATION STUDIES

There is very little work being done to institute badging and micro-credentialing at SIU. Single professors have started to integrate badging into their classes, but their badges don't have the full institutional backing of SIU. Some professors have also started to integrate external badging programs, like HubSpot and Coursera. At the beginning of this project I spoke with various professors and administrators who gave

me leads on people working on badging through different departments. Unfortunately, most of those leads were dead ends. One lead was that there was an initiative to create digital badging in the Core Curriculum, however, the project was brought up and then dropped once the director of the program changed. I attempted to reach out to the director of the Center for Teaching Excellence, but I received no response to numerous emails.

Christensen and Eyring (2011) wrote that as many as half of U.S. universities will fail partly from online education undermining traditional university business models. Universities that want to continue to exist need to find innovative ways to meet the needs of students. SIU is facing low retention, persistence, and graduation rates, especially among their first-generation students—who comprise nearly 50% of the undergraduate population (Franca, Habib, and Duncan, in press). Creating competency-based learning programs through the university is one path to increased learning outcomes for our students.

Badging and micro-credentials potentially align well with SIU's mission of access, opportunity, inclusion, and innovation. The university's institutional learning outcomes, along with student learning outcomes in classes, can be guidelines to create communication-competency badges, which students can share with potential employers increasing their ability to be hired. The department of Communication Studies is in a unique position to have classes that already teach communication competency skills which employers are seeking in prospective employees. Some professors in the department have already introduced badging and micro-credentials to students, which would allow the department to easily expand badging into other courses in the

curriculum. Because Communication Studies teaches core skills, their courses are an ideal way to introduce an internal credentialing system, like the GRIT system, to increase student learning outcomes, increase recruitment and retention, and increase the ability of our students to be hired for internships and after graduation.

Based on my review of the literature, and considering the institutional challenges noted in the introduction, the following questions arise:

- What are the markers of communication competency, and how can they be assessed?
- What skills and competencies do communication students need to demonstrate to be awarded a badge?
- Should we use language from other badging systems—e.g. badges, colored belts, achievements, trophies?
- Should higher education review how credits—and similarly degrees—are awarded to students?
- How can we, as instructors, effectively use gamification and badging to increase learning outcomes with our students?
- Should SIU be a leader in the digital badging paradigm shift in higher education, or should we wait until the framework is fully established?

Since answering all these questions is not possible in this report, I have narrowed my focus to badging within the Department of Communication Studies. The first step to answering those questions is determining the efficacy of badging in Communication Studies classes. Drawing from the questions above, I therefore focus a case study on the following question: How does an explicitly designed badging system

based on communication competency improve student outcomes?

To answer this question, I will conduct a case study on introducing badges into a section of CMST 101.

HEADING 3
CASE STUDY
SELECTION OF COURSES FOR THE PROFESSIONAL COMMUNICATOR
CURRICULA

As Eicholtz and Baglia (2013) note, “a case study is both a product and a process” (p. 30). Case studies conceptualize what has happened, as well as produce a report that summarizes the efforts and results. Stake (1998), identifies a six-step process, which Eicholtz and Baglia use in an analysis of the communication studies curricula and is therefore a useful model for this report, to complete a case study.

- 1) Define the parameters and identify what is of interest
- 2) Select an issue to explore which becomes the research question
- 3) Look for patterns in the data
- 4) Find overlaps in data and methods to allow for interpretation
- 5) Conceptualize alternative interpretations
- 6) Make claims based on the interpretations

In consideration of what data are needed when creating a Professional Communicator Credential, let’s define the parameters and identify what is of interest first. Which Communication Studies courses best match the ILOs for SIU?

CMST 101: Introduction to Oral Communication: Speech, Self and Society. All instructors use the same syllabus. In the Competent Speaker Speech Evaluation Form, created for the National Communication Association (NCA), Morreale, Moore, Surges-Tatum, & Webster (2007) identify eight competencies for public speaking, four of which more or less match the SLOs listed in the CMST 101 syllabus:

- Chooses and narrows a topic appropriately for the audience and occasion
- Communicates the thesis/specific purpose in a manner appropriate for the audience and occasion
- Provides supporting material appropriate for the audience and occasion
- Uses an organizational pattern appropriate to the topic, audience, occasion, and purpose

The form defines three levels for each competency—unsatisfactory, satisfactory, and excellent. While the details for rating each competency is beyond the scope of this report, these competencies can each be easily tracked and graded for large numbers of students. Specifically, each of the competencies can be measured in writing with the use of a specific rubric that can measure all students equally.

CMST 262: Interpersonal Communication. In *The Conversational Skills Rating Scale: An Instructional Assessment of Interpersonal Competence*, created for NCA, Spitzberg and Adams (2007) identify four categories of interpersonal competence.

- Attentiveness
- Composure
- Expressiveness
- Coordination

Each of these categories has seven behaviors that are rated. Appendix A includes a list of these behaviors. Assessment of these qualities requires interacting in person or watching a video of people interacting. At the time of this report, the coronavirus pandemic has restricted the ability to measure face-to-face interpersonal communication. An assessment of CMST 262 and its competencies is not possible at

this time. However, future research should determine how we can assess competencies in CMST 262, and how to best integrate digital badging into the course.

CMST 280: Business and Professional Communication. This class covers four main competencies:

- Interpersonal Communication
- Business Writing
- Public Speaking
- Career Development

Dr. Craig Engstrom redesigned the course to match these competencies based upon best practices for Business Communication courses and what hiring managers were looking for in college graduates (Addams & Allred, 2015; Clokie & Flourie, 2016; Engstrom, 2019; & Knight, 1999). Because CMST 280 is a hybrid course, it is easy to implement digital badges into the curriculum because of the online format. Dr. Engstrom has created numerous digital badges in the class, and students have responded positively.

In a previous semester, I worked to create a badging system for CMST 280 which would integrate into the Professional Communicator Credential. However, in spring 2020 there is only one hybrid and one online-only section of CMST 280. Because of the differences between the hybrid class and the online-only class, I wasn't able to assess the effect of the badges on students between sections. I have included this system in Appendix A and would recommend integrating it into the class starting Fall 2020.

CMST 383: Interviewing. This class teaches students about different types of

interviews and gives students experience as an interviewer and an interviewee in each type. Because each type of interview requires different competencies, it is difficult to list the assessment of those competencies in this report. However, two of the main competencies for any type of interviewing are oral and written communication competencies as well as listening competency, from which we can draw upon the previous courses. This course brings together competencies from CMST 101, 262, and 280 and serves as the practice of those skills. Because the competencies in Interviewing require face-to-face interaction, like CMST 262, it is currently not possible to assess them at this time.

We know that the competencies learned in these courses are what employers are looking for when identifying potential employees. As previously mentioned, the diploma that a student receives when they graduate is only a proxy letting employers know that the students took the courses. The diploma doesn't tell employers that students learned, and demonstrated competence, in these specific skills. However, as I discussed previously, badges can be a way to show employers that students were assessed, and demonstrated the skills needed to acquire the badge.

So, the question becomes how do we design a badging system based on communication competency?

ASSESSING COMPETENCY AND BADGING

How do we create a system to assess communication competency in Introduction to Oral Communication, Interpersonal Communication, Business and Professional Communication, and Interviewing? Eicholtz and Baglia (2013) followed the efforts of Eastern Illinois University in the university's attempts to establish and maintain

an assessment program of their Basic Oral Communication course. Some of the challenges that the faculty at Eastern Illinois University faced mirror the challenges faced at SIU, so it makes sense to study assessment in the Basic Oral Communication course (CMST 101).

The biggest challenge is consistency. CMST 101 is taught by graduate students. There is a common workbook and recommended course calendar. Since all students are using the same workbook and have a similar syllabus, some consistency is maintained. There is a supervisor, in the form of an Introductory Course Director; however, each instructor has a unique style and a variety of delivery methods, which leads to an inconsistent focus on concepts. Each instructor can and does choose what they focus on in a variety of areas. Thus, badging may provide a rationale for further standardizing the curriculum. This would also likely align with state standards for the course in Illinois.

The Illinois Board of Higher Education has the Illinois Articulation Initiative (IAI) that facilitates credit transfer among Illinois universities. IAI has a set of guidelines for the introductory course to assure students are meeting certain competencies in the course to ensure that students can transfer the credits among state universities (Illinois Articulation Initiative, 2015). The requirements for the course include three substantive speeches—with at least one informative and one persuasive—at least five minutes in length, which require significant attention to invention and organization. At least one speech must have multiple credible sources that are verbally cited. The oral communication aspects must be at least 50% of the grade. For the CMST 101 course students are required to create an outline for each of their speeches. Instructors are

encouraged to use standardized rubrics in the workbook for their speeches (See Appendix A). Using these specific guidelines, along with the list of competencies we will discuss later, I recommend standardization of the CMST 101 curriculum to ensure SLOs are being met.

While there is standardization around a few assignments in CMST 101, because coursework is so varied, it's difficult to assess competency among numerous instructors. In this study, because of time constraints, we used the first outline that students create to test communication competencies in two sections of CMST 101 taught by the same instructor. I used the outline for the first speech to assess two communication competencies:

- Provides supporting material appropriate for the audience and occasion
- Uses an organizational pattern appropriate to the topic, audience, occasion, and purpose

SELECTION OF CMST 101 FOR CASE STUDY

In this case study, I am exploring the effects of introducing digital badges into the CMST 101 curriculum. As previously noted, SIU is facing problems with recruitment, retention, and persistence. Over the past decade, student enrollment has declined by half at the university. Since CMST 101 is a course that most students take as first-year or second-year students, we can use it to assess how students react to badging in light of the literature review that indicated badging has positive outcomes.

I collected data during the spring 2020 semester at SIU. After consideration of how to assess competency with little intrusion into the class, I decided to assess the first outline that students turn in—for an informative speech—and compare the results

among two classes.

CREATING THE TARGETS FOR BADGES



To assess the efficacy of digital badging and its effect on student learning outcomes, students in two sections of CMST 101, with the same instructor, were given the same assignments and syllabi. I created five targets for these students:

- Have a 100% attendance score for the first four weeks in class;
- Turn in one of the assignments in the first two units of the class early;
- Participate in the classroom at least five times;
- Posting on a discussion board in the class online learning management system shell, D2L; and
- Getting a 90% or higher score on a full-sentence outline created for the first substantial speech given in class

Students in the control section (n = 21) did not receive digital badges for these five targets. Students in the experimental section (n = 21) had digital badges awarded to them for the successful completion of each the five targets. The instructor told students in both classes what was expected of them regarding each of the five targets. The instructor told students in the experimental section about each badge—and how to earn the badge—during the first week of the semester, reminded students of the badges weekly. The instructor of the class was given examples of badges used across various badging platforms, and I worked with them to create badges for the students (see Table 3).

Table 3

The badges awarded to students for meeting the five targets.

Badge	Badge Image	Badge Description
Badge #1 Perfect Attendance		This badge is awarded for attending each class in the first four weeks of the course.
Badge #2 Early Turn-In		This badge is awarded for turning in an assignment before the due date.
Badge #3 Participated in Class		This badge is awarded for raising a hand and participating in discussion at least five times.
Badge #4 Discussion Board		This badge is awarded for making an extra-credit discussion board post on D2L.
Badge #5 Informed Your Audience		This badge is awarded for being scored 90% or higher on an informative speech outline.

I designed the first four targets to require some effort but be easily obtainable for most students. Cheng, Watson, and Newby (2018) write that there are four mechanisms to creating goals or targets. The first mechanism is goals directing attention towards goal-setting activities. The second is that higher goals trigger greater effort. The third is goals affect persistence. Finally, goals indirectly affect actions by triggering the application of task-relevant knowledge and strategies. Abramovich, Schunn, and Higashi (2013) note that at least a portion of badges should provide formative feedback to students, or else badges may distract students from learning goals rather than reinforce learning goals.

I designed the first target—100% attendance in the first four weeks of—to give an easy badge to students and introduce them to the badging system. This first badge is analogous to the military campaign badges, marking participation in an event or events. Attendance is mandatory for all students. While students are allowed one week of absences before missing class affects their grade, the nature of a communication course highly encourages attendance and participation. Attendance is a significant factor in student grades, GPA, and success after graduation (Van Blerkom, 2001). Students who show better attendance early in the semester have better outcomes throughout the entire semester. Students who miss classes in the first quarter of the semester often have poor performance because of the absences (Allensworth & Easton, 2007). Poor performance leads to higher absences later in the semester, which affects performance in the entire course. Mandatory attendance policies increase student outcomes (Credé, Roch, & Kieszczynka, 2010). From that, I believe that incentivizing attendance early in the semester is imperative for students.

I designed the second target—turning in an assignment early—to be a little more difficult. Students have numerous assignments they can turn in early. It requires paying attention to due dates and working ahead of schedule. Due to the work that is involved in turning an assignment in early, this is a badge that rewards students for reaching a goal. Chang, Watson, and Newby (2018) note that a buildup in difficulty helps students map out their trajectory. As discussed before, providing challenges to students releases endorphins.

I designed the third target—participating in class—to provide a slightly more difficult challenge for students. Participating in class requires students to address communication anxiety. A badge for participation can help motivate students to face their communication apprehension, and in turn can assess a marker of communication competence. This badge is parallel to the pilgrimage badges that give no direct return but creates a rapport and trust among group members. This target starts to provide formative feedback by letting students know their participation is being noticed. Glover (2016) found that students appreciate the recognition of participation in activities.

I designed the fourth target—posting to a discussion board—as a way to assess mediated communication. Students need to navigate the online learning system, create a post, and respond to a classmate’s post. This badge is analogous to the pilgrimage badges, representing the time needed to navigate through the online learning management system to create a post. Mah, Bellin-Mularski, and Ifenthaler (2016) note that digital badges have a greater effect when integrated into technology used already in classrooms. This target creates a link between the learning management system that students are becoming familiar with, and the concept of digital badging.

I designed the final target—to get a score of 90% or higher on the written outline for the informational speech—to allow students to demonstrate competency. This badge is the first badge to measure a competency in the SLOs of the class. The instructor gave students clear explicit directions about what was required and expected of them on the outline, focusing on structure, writing, and content. This badge is analogous to the Boy Scout badges—students must demonstrate competency to be awarded the badge. Completion of this badge indicates that students have demonstrated skill in written communication. Students were able to demonstrate that:

- They can organize a message in a standard way
- They can write using standard English grammar
- They can reasonably demonstrate knowledge of a topic to inform an audience

Parallel to the Boy Scout Fire badge, employers who see this badge can be assured that students have competency in those three specific areas.

The instructor for the two sections of CMST 101 assigned outlines a number and removed identifying information. I assessed each of the outlines using the rubric in Appendix A. The outlines were then matched with their section number. In the following section, I will refer to the control section that did not receive badges as “Section A.” I will refer to the section that received badges as “Section B.”

LIMITATIONS

This study had many limitations which impacted the scope of data that I was able to collect—some of those unanticipated and some out of my control. First, I was only able to collect data during one semester of the course. That limited the number of

participants involved. I designed the study too late in the fall 2019 semester to integrate it into a class that semester. Second, the original instructor that I was working with had an assignment change, and I had to find and work with another instructor the week before their classes started to integrate badging into their class.

Now that I have described the case, let's examine and discuss findings from this study.

HEADING 4

FINDINGS

Students in Section B—the section that received badges—performed higher on all targets. Twenty students in Section B received at least one badge, while only 17 in Section A completed at least one task that would have received a badge (see Table 4). Ten students in Section B received all five badges. Only three students in Section A completed all the tasks that would have awarded them badges.

Table 4

Number of Students, by Section, who Completed Tasks

	Section A	Section A %	Section B	Section B %
All 5 Targets	3	14.3%	10	47.6%
At Least 1 Target	17	81.0%	20	95.2%

The instructor noted that students in Section B were much more engaged with the class—and the class content—than students in Section A. Students appeared to understand the content better and were able to communicate their thoughts more logically, which was supported by the assessment of the outlines. While not specifically tracked in this report, the ability to orally communicate their thoughts more logically among their peers is a demonstration of communication competency.

According to self-determination theory, to be intrinsically motivated students need (Ryan & Deci, 2000):

- autonomy, to be able to make meaningful choices over what they are doing;
- competency, to be challenged but feel like they can succeed; and

- belonging, to feel connected to those around them.

These are major elements of gameful pedagogy. The introduction of badges gave students choices in their classroom experience. None of the targets were explicitly required, but they were small challenges that students could succeed in. Recognition through badges served to help create a sense of belonging for students. As predicted, incorporating gameful pedagogy elements through badges increased their learning outcomes.

ATTENDANCE

For the first badge—perfect attendance for the first four weeks of class—20 students in Section B had perfect attendance during the first four weeks of class. Only 17 students in Section A had perfect attendance during the same period (see Table 5). These data suggest that the possibility of receiving this badge motivated students to attend class more often than those who did not receive a badge.

Table 5

Number of Students, by Section, with Perfect Attendance

Perfect Attendance	Section A	Section A %	Section B	Section B %
Weeks 1-4	17	81.0%	20	95.2%
Weeks 5-8	15	71.4%	19	90.5%

Although students only received badges for the first four weeks of attendance, attendance in the second four weeks was also higher in Section B than Section A. This finding supports previous studies (Allensworth & Easton, 2007) and is noteworthy because attendance in the first four weeks is crucial and affects the rest of the semester.

The instructor noted that students expressed that they appreciated having an acknowledgment of their attendance—and participation—other than a grade. Students in section B felt that their presence in the class was appreciated more than in other classes, and that they weren't just a random person filling a seat. This reflects the sense of relatedness that is an important part of self-determination theory (Ryan & Deci, 2000), and is parallel to military participation badges—students showed up to class to receive the badge.

I should note that nothing changed in the attendance policy other than students received a badge for perfect attendance. However, the instructor noted that, as predicted, students who had perfect attendance performed better in class across all targets than students who missed one or more class period.

TURNING ASSIGNMENT IN EARLY

For the second badge—turning in an assignment early—10 students in Section B turned in an assignment early, while only 3 students in Section A turned in an assignment early (see Table 6). Of note is that all the students in Section B who received this badge also received the perfect attendance badge.

Table 6

Number of Students, by Section, who Turned Assignments in Early

Early Turn-In	Section A	Section A %	Section B	Section B %
Once	3	14.3%	10	47.6%
Multiple	0	0.0%	8	38.1%

Nearly half of the students in Section B turned in at least one assignment early.

The instructor noted that eight of the students in Section B worked to turn in multiple assignments early, although the badge was only awarded in the first instance. Both classes were asked to turn in assignments early, with the benefit of receiving feedback from the assignment early. Because the only difference in benefits was a badge, we can assume that students were motivated to put in extra effort just for the badge. These data suggest that giving badges for actions that increase performance, but are not necessarily graded, will increase the likelihood that students will perform an action. This is parallel to military campaign badges—students will participate just for the badge. Creating a badge for something like filling out a study guide or reading optional articles and chapters could increase learning outcomes by motivating students to put in the extra work.

PARTICIPATION

For the third badge—participating in the class at least five times—17 students in Section B showed participation, while only 12 students in Section A showed extensive participation (see Table 7).

Table 7

Number of Students, by Section, who Participated in Class at Least 5 Times

	Section A	Section A %	Section B	Section B %
Participation	12	57.1%	17	81.0%

Participation counts as 5% of the grade in CMST 101 but is difficult to assess because students participate in different ways. One specific way to participate is by raising a hand and speaking during a discussion. The instructor only counted hand raising as participation for this badge. Students in Section A only had their grades as

motivation to participate, while students in Section B had their grades and a badge.

Upon learning that there was a badge for participation, students in Section B started to participate regularly in class. Students continued to participate even after receiving the badge. Students in Section A were less likely to participate, even though their grade depended on it. This is analogous to the military badges—people are more likely to participate if they are receiving a badge for it. This also suggests that the idea of a grade is not the same as a specific badge being awarded, as students who received badges performed better than students who only participated for the grade.

When a guest speaker was invited into the classroom, the instructor told the students in Section B that participating during that session would count for all of the instances of participation for the badge, and told students in Section A that participating in the session would count for the entirety of their grade in participation up until that point. Most students in Section B had already received the badge, but still participated more than students in Section A during the session with the guest speaker.

DISCUSSION BOARD

For the fourth badge—posting on a discussion board—20 students in Section B posted, while only 11 students in section A posted (see Table 8).

Table 8

Number of Students, by Section, who Participated in a Discussion Board Post

	Section A	Section A %	Section B	Section B %
Discussion Board	11	52.4%	20	95.2%

The discussion board post was an extra-credit assignment for students. Students

in Section A only posted for extra credit, while students in Section B also received a badge. Even though students in Section A needed the extra credit more, due to a lower average grade based on attendance and participation, only half of the students participated. Students in Section B—who had higher grades already based on attendance and participation—nearly all participated in the discussion board post. All students who participated in the extra-credit discussion board post also received the badge for perfect attendance.

Many students are not familiar with posting to discussion boards on D2L. In order to post to the discussion board, students needed to put in extra effort to learn how to navigate D2L. Because students in Section B did not need the extra credit as much as students in Section A, these data suggest that badging motivates students to put in extra work more than extra credit. As noted in the section about turning in work early, badges can be attached to optional items that will increase student learning outcomes to motivate students to put in the extra work required to do better in a specific area.

GRADE ON OUTLINE

For the final badge—getting a 90% or higher on a full-sentence outline—17 students in Section B received a 90% or higher on the outline, while only 12 students in Section A received a 90% or higher (see Table 9).

Table 9

Number of Students, by Section, who Received 90% or Higher

	Section A	Section A %	Section B	Section B %
Score of 90%+	12	57.1%	17	81.0%

Using grades to assess competency is problematic; however, for this report the data on grades were the only useful proxy available. In future studies, I will include much more qualitative data to help determine competency in each area.

I graded outlines using a rubric, available in Appendix A, to determine competency in structure, writing, and content. Each section measures one of the three SLOs mentioned above. I graded competency criteria on a four-point scale, with 0 representing not present or too poor to grade, 1 representing present but poor quality, 2 representing average quality that met all requirements, and 3 representing exceptional work demonstrating attention to detail.

- SLO 1: Structure. To develop inventional, organizational, and expressive skills.
 - Outline included required elements for speeches – an attention-getter, topic stated, a thesis statement, and a preview of main points
 - Each main point in the body of the outline had at least one sub-point
 - The outline included a conclusion that restated the thesis statement, reviewed the main points, and had a memorable closing
- SLO 2: Content. To develop and apply understanding and acceptance of communication ethics
 - Student demonstrated knowledge of the speech topic
 - Outline provided sources and a logical thought process
 - Speech was given to inform and not persuade an audience
- SLO 3: Writing. To practice communication behaviors that reflect each of the goals above.

- Outline was proofread with fewer than 10 mechanical, grammatical, and stylistic errors
- Outline was formatted to requirements in the assignment prompt, including full sentences and sources cited
- Outline contained a properly formatted sources page

I compared data between sections to determine if awarding digital badges affected student's learning outcomes, such as improvement in assignments or final grades. The data provided the expected results: *Students demonstrated better communication competency on average in the class section that was awarded badges for the five targets.*

For the total score, students in Section B, which were given badges, received nearly twice as many perfect scores than Section A (15 vs. 8). The mean score for Section B was 2.6 points higher than Section A (23.7 vs. 21.1). These data suggest that students who received badges were better able to demonstrate competency in written communication, specifically looking at structure, writing, and content than students who did not receive badges. In Section B, the scores were clustered together closer versus the wider spread of Section A (see Figure 2). Badging produced less variability in the scores among students. These data suggest that not only did more students receive a perfect score, but students as a whole were more likely to demonstrate competency in their outlines.

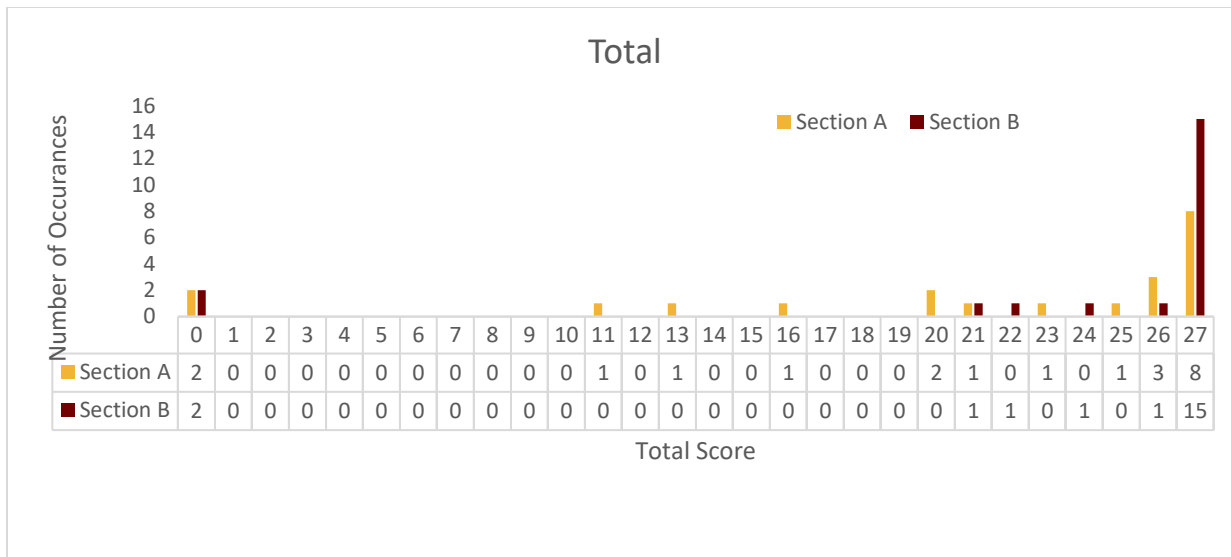
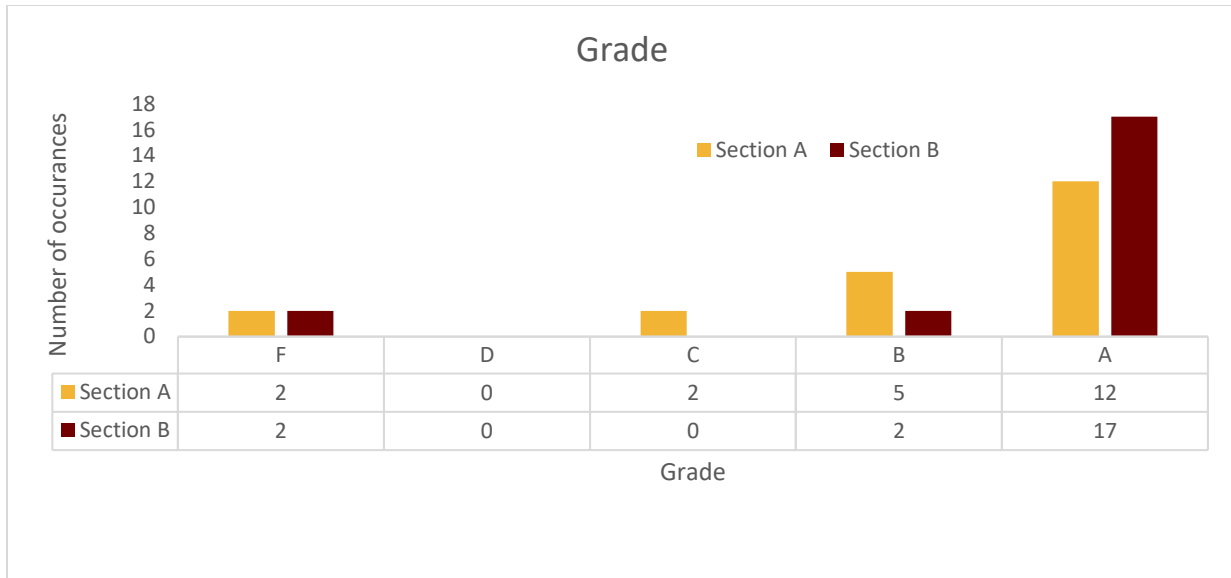


Figure 2

Total Score for Structure, Content, and Writing in the Outline out of 27

Perhaps the most striking difference between sections is the grade distribution (see Figure 3). In Section A, 57.1% of students received an A, 23.8% received a B, and 19.1% of students received a C or lower. In Section B, 80.9% of students received an A, 9.5% of students received a B, and only 9.6% of students received a C or lower. As previously noted, using grades to assess competency is problematic. However, the data in this pilot study support a larger-scale study of badging and competency that may ultimately support the following hypothesis: Badging improves student learning outcomes based on communication competency. A more comprehensive study will need to be conducted to validate this hypothesis.

**Figure 3***Grade Distribution by Section*

The mean scores for each of the three SLO areas—structure, content, and writing—were all higher in Section B (see Table 10). The largest difference was in writing, with a 1.57-point difference between sections.

Table 10*Average Score by Section in Structure, Content, and Writing*

	Section A		Section B	
	Section A Mean	Standard Dev.	Section B Mean	Standard Dev.
Structure	7.19	2.994	7.71	2.714
Content	7.62	2.906	8.14	2.707
Writing	6.29	3.068	7.86	2.762

HEADING 5

CONCLUSION

Overall, this small case study on the effect of badging showed that badges led to better student outcomes. Students demonstrated competency with written communication. Students who received badges were more likely to be able to demonstrate the ability to do the following:

- structure writing with an introduction, main body, and conclusion;
- include previews, transitions, and a thesis;
- write using correct English grammar;
- format a report using specific guidelines;
- write a properly formatted sources page;
- properly reference sources;
- demonstrate knowledge in a topic; and
- inform an audience without persuading them

Students who received badges were also more likely to meet or exceed expectations in the classroom, including attending class, turning in work early, participating in classroom activities, and participating in online discussions.

The instructor of the two courses in the study decided to implement badging in every future course that they teach. They noted that badges gave students an acknowledgment that they appreciated the value of their hard work. After this report, I have also decided to include badging in every class that I teach.

As I discussed before, higher education must adapt to the changing needs and expectations of students and employers. The Department of Communication Studies

has been considering a Professional Communicator Credential and using digital badging to help assess competency within the credential. With the data collected in this report, I recommend that the department moves forward with this plan.

While badges seem like an external motivator, they more closely resemble facilitators to intrinsic motivation. Badges facilitated the three conditions that students need for intrinsic motivation: autonomy, competency, and belonging (Ryan & Deci, 2000). Students were given the choice to participate in badges to facilitate autonomy—it did not affect their grades directly if they did not get the badges. The final badge was used to assess competency, requiring students to reach competency to be awarded the badge. Badges also promoted participation between students to facilitate a sense of belonging. Even though students were able to finish the badges early, they continued performing better across the targets than the section that did not receive badges. By facilitating intrinsic motivation early in the course, we saw students continue to be intrinsically motivated after badges.

Students not only performed better in each target but were more likely to demonstrate competency when they received badges. There was less variability between students in the class that received badges. Marsh, Trautwein, Lüdtke, and Köller (2008) detail how students' academic self-confidence is based upon their academic performance compared to their peers' academic performance. By reducing the variability, students will have more academic self-confidence, which in turn increases their performance in class and increases their learning outcomes. As Ryan and Deci (2000) note, according to self-determination theory, skills being recognized leads to higher confidence to learn more skills. Improved confidence in Communication

Studies classes will lead to more students enrolling in a minor and attempting the Professional Communicator Credential or changing their major to Communication Studies.

If we explicitly design badges to measure specific competencies, we can expect students to work harder to gain the skills to demonstrate their competence. With the Professional Communicator Credential, as demonstrated in this report, we can explicitly design badges to ensure that students can demonstrate communication competency. Students will also be able to gauge how well they are demonstrating competency by receiving badges along the way that will provide formative feedback and show their progress.

Implementing the Professional Communicator Credential will require changes in the curriculum. These changes will lead to better SLOs and will serve to better meet students' needs and expectations. These changes will also make our classes more appealing to students and give them institutionally backed badges that they can show employers to improve their ability to be hired.

The biggest change—and challenge—will be to standardize CMST 101. There will be pushback from faculty and graduate students when standardizing CMST 101, because instructors are currently given a lot of control over much of the curriculum. While it gives graduate students the ability to develop their personal pedagogy, it can cause numerous problems. The first problem is that not all graduate students are comfortable being given such a wide berth in teaching. The amount of freedom can be overwhelming for some instructors and can lead to negative outcomes for them as graduate students, as well as the students taking their class. Standardization will help

guide them through teaching the course. Graduate students and faculty will need to become better acquainted with D2L and using technology

The second problem with an unstandardized CMST 101 is that it is much harder to assess which competencies students are learning in the class, and therefore how well they are meeting the SLOs in the class which are based off the ILOs of the university. Two different students can be learning fundamentally different information and skills depending on how the instructor sets up their class. Standardization of the curriculum allows badging to be implemented in each CMST 101 classroom. Badging would help ensure that students can demonstrate the competencies expected by the department, as well as the university and the state.

If CMST 101 is not standardized, there will need to be a single standardized section for people who would like to earn the Professional Communicator Credential. A single standardized version of CMST 101 would be difficult because students may not know about the credential when they take CMST 101. Students generally take CMST 101 as first-year or second-year students. If an additional class is added at the end of the credential to assess students' competency, the class could have the option to earn the badges that would have been earned in CMST 101.

The second change would be to design a badging system for CMST 101 as well as Interpersonal Communication, Business and Professional Communication, and Interviewing. As I mentioned before, I have worked with Dr. Engstrom to design a badging system for Business and Professional communication, a course that explicitly promotes and assesses communication competency. In the future, the department ought to work with instructors to design a badging system that is similar in structure to

provide consistency between the classes in the Professional Communicator curriculum.

As previously noted, this was a very small-scale study with only data from two sections of CMST 101 over the first half of one semester. As a result, the differences between sections may be by chance. The differences may also have been caused by the time of day, students signing up with friends, or students being in a First-Year Interest Group. The instructor may have also experienced priming bias, teaching section B differently because the badges were being given. However, the results matched my prediction, and these data suggest that future research on badging is warranted. Moving forward I will give suggestions on the design, implementation, and assessment of the Professional Communicator Credential.

First, the department needs to explicitly design badges to promote the SLOs in each course, while maintaining consistency across the board. Faculty supervisors and instructors need to work together to identify the most important competencies in each course, create a way to assess the competencies, and create badges that relate to those competencies. Second, faculty need to implement badging into their courses, which may require some training on how to use certain features in D2L for those instructors who may not use it in their courses. Finally, data must be collected to ensure that students are benefitting from the badging process.

University-wide efforts to help turn around recruitment numbers were starting to finally have an effect before the COVID-19 pandemic. With the pandemic, all universities will likely experience a decline in student recruitment; therefore, it is imperative that student retention increases until recruitment numbers increase. As a department, Communication Studies does not have control over the university-wide

recruitment and retention numbers. However, Communication Studies enrollment has suffered less than many departments due to recent innovations in the curriculum. To ensure that we can retain every student we can, we should continue to wisely use innovative technology to make students' coursework as effective and engrossing as possible.

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APPENDIX

RUBRIC TO EVALUATE SPEECH OUTLINE

Evaluation – Used by Instructor in Course

Points	Structure
0 1 2 3	Includes introduction with attention getter, topic, thesis, and preview
0 1 2 3	Includes conclusion that restates thesis, reviews main points, and has a memorable closing
0 1 2 3	Each main point in the body has at least one sub point
	Total Points in Structure
Points	Writing
0 1 2 3	Carefully proofread with fewer than 10 mechanical, grammatical, and stylistic errors
0 1 2 3	Formatted to requirements specified in the assignment prompt, including full sentences and sources
0 1 2 3	Contains properly formatted sources page
	Total Points in Writing
Points	Content
0 1 2 3	Properly demonstrates knowledge of topic
0 1 2 3	Provides sources or a logical thought process
0 1 2 3	Content seeks to inform and not persuade audience
	Total Points in Content
Total Points (0-27)	Notes:
	Grade total: 27 = A 21 – 23 = B+ 12 – 14 = C+ 3 – 5 = D 24 – 26 = A- 18 – 20 = B 9 – 11 = C 0 – 2 = F 15 – 17 = B- 6 – 8 = C-

Note. Students can earn 0-3 points in each item, with up to 9 points in each category (Structure, Writing, Content). 0 points is not present or too poor to grade. 3 points is exceptional work.

INTERPERSONAL CONVERSATIONAL SKILLS

- Attentiveness
 - Leans towards partner
 - Nods head in response to partner
 - Involves partner as topic of conversation
 - Speaks about self
 - Encourages partner or agrees
 - Expresses personal opinion
 - Asks questions
- Composure
 - Speaks fluently
 - Vocal confidence
 - Volume
 - Posture
 - Shaking and nervous twitches
 - Unmotivated movements
 - Eye contact
- Expressiveness
 - Articulation
 - Vocal variety
 - Facial expressions
 - Gestures for emphasis
 - Use of humor

- Smiling and/or laughing
- Eye contact
- Coordination
 - Speaking rate
 - Asking questions
 - Initiating new topics
 - Maintenance of topics and follow up questions
 - Interruption of speaking turns
 - Use of time relative to partner

For the full list of evaluating each behavior, see *The Conversational Skills Rating Scale: An Instructional Assessment of Interpersonal Competence* (Spitzberg & Adams, 2007)

BUSINESS COMMUNICATION COMPETENCIES

From *Communication in a changing world: Contemporary perspectives on business communication competence*. (Waldeck, Durante, Helmuth, & Marcia, 2012).

- Relationship and interpersonal communication
 - Initiating, maintaining, or disengaging from interorganizational and external relationships
 - Civility
 - Conflict management
 - Small talk
 - Conversation management
 - Rapport building
- Mediated communication
 - Using communication technologies effectively and appropriately
 - Online interaction etiquette
 - Online social networking skills
 - Willingness and ability to engage in online training and learning
- Intergroup communication
 - Communicating within and across groups
 - Intergenerational communication
 - Intercultural sensitivity
- Communication of enthusiasm, creativity, and entrepreneurial spirit

- Expressing enthusiasm and passion for their jobs, companies, products, and ideas
 - Communicating a positive attitude
 - Creativity
 - Motivation
- Nonverbal Communication
 - Managing a diversity of nonverbal behaviors important in the workplace
 - Time management
 - Use of space
 - Dress
- Speaking and listening
 - Public presentation and active listening tasks in a business context
 - Facilitation
 - Public speaking
 - Listening to others' ideas

INFORMATIVE SPEECH RUBRIC

This is the informative speech rubric used in the *Introduction to oral communication workbook, 4th ed.* (Department of Communication Studies, 2019)

INFORMATIVE SPEECH RUBRIC

Speaker: _____ Topic: _____

Introduction

- | | |
|--|-----------|
| <input type="checkbox"/> Attention Getter | 1 2 3 4 5 |
| <input type="checkbox"/> Topic/Thesis Statement | 1 2 3 4 5 |
| <input type="checkbox"/> Credibility Established | 1 2 3 4 5 |
| <input type="checkbox"/> Preview of Main Points/Transition | 1 2 3 4 5 |

Body

- | | |
|---|-----------|
| <input type="checkbox"/> Organization of Speech | 1 2 3 4 5 |
| <input type="checkbox"/> Transitions Between Main Points | 1 2 3 4 5 |
| <input type="checkbox"/> Information Clear/Relevant | 1 2 3 4 5 |
| <input type="checkbox"/> Credible Information/Sources Cited | 1 2 3 4 5 |
| <input type="checkbox"/> Adapted to Audience | 1 2 3 4 5 |

Delivery

- | | |
|--|-----------|
| <input type="checkbox"/> Sustained Eye Contact/Scanning | 1 2 3 4 5 |
| <input type="checkbox"/> Engaging Energy | 1 2 3 4 5 |
| <input type="checkbox"/> Confident Tone/Volume | 1 2 3 4 5 |
| <input type="checkbox"/> Articulation/Avoiding Vocal Fillers | 1 2 3 4 5 |
| <input type="checkbox"/> Extemporaneous | 1 2 3 4 5 |
| <input type="checkbox"/> Body Language | 1 2 3 4 5 |

Conclusion

- | | |
|---|-----------|
| <input type="checkbox"/> Transition to Conclusion | 1 2 3 4 5 |
| <input type="checkbox"/> Thesis Reinforced | 1 2 3 4 5 |
| <input type="checkbox"/> Review Offered | 1 2 3 4 5 |
| <input type="checkbox"/> Reference to Intro | 1 2 3 4 5 |
| <input type="checkbox"/> Closing Statement | 1 2 3 4 5 |

Speaking Time: _____

Comments: _____

CMST 280 BADGING SYSTEM

Badge 1: Business Writing

- Project: Harvard Business Review Case Study Examination
 - Students will find examples of (poor) communication competency and emotional intelligence in a conversation between a manager and an employee
- Students will demonstrate:
 - Proficiency with Microsoft Word
 - Ability to follow written instructions
 - Ability to implement written feedback

Badge 2: Public Speaking

- Project: Business Tips Presentation
 - Students will write a manuscript and record a speech discussing tips relevant to those in the workforce
- Students will demonstrate:
 - Ability to write for the ear
 - Public speaking skills
 - Giving and receiving feedback

Badge 3: Business Presentation

- Project: Ignite Talk
 - Students will write and perform an Ignite Talk for a competitive tournament
- Students will demonstrate:
 - Proficiency in PowerPoint

- Writing and performing under time constraints
- Providing and implementing feedback on a visual presentation

Badge 4: Professional Development

- Project: Create a Tailored Resume
 - Students will create a resume tailored to a specific job or internship that they plan to apply for
- Students will demonstrate:
 - Proficiency in Word and concise writing
 - Ability to deliver and receive conversational feedback
 - Ability to present self in a professional manner

VITA

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Assessment of Digital Badges and Microcredentials on Student Learning

Outcomes in the Introductory Public Speaking Course

Major Professor: Craig L. Engstrom

Publications:

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Identifying barriers to academic success, retention, and graduation of first-generation students. *Southern Illinois University's Quality Initiative Report*. Higher Learning Commission.

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