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To Badge or Not to Badge: An Action Research of Badge Integration

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To Badge or Not To Badge

An Action Research of Badge Integration in Online and F2F Classes

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SoTL Commons Conference, March 26, 2015
Savannah, Georgia
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Associate Professor

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- Department of Organization Learning and Development
- College of Education, Leadership, and Counseling
- University of St. Thomas

ccchou@stthomas.edu
University of St. Thomas
Quick Facts

- Minneapolis/St. Paul campuses
- Catholic University
- Liberal Arts, comprehensive university
- Founded in 1885
- 10,299 students
- Student-Faculty ratio 15:1
- Average class size: 21
- Minnesota’s largest independent college or university
- Accredited by Higher Learning Commission
College of Education, Counseling, and Leadership

Two Schools
• School of Education
• Graduate School of Professional Psychology
• Accredited programs
• 1,500 students
• M.A. Program in Learning Performance, and Technology
Outline

- Definitions
- Theoretical Background
- Examples
- Background
- Data Analysis
- Recommendations
- Resources
A badge is a digital token that appears as icons or logos on a web page or other online venue to signify accomplishments such as completion of projects, mastery of skills, or marks of experiences. (Educause, 2012)

Digital badges are an assessment and credentialing mechanism that is housed and managed online. Badges are designed to make visible and validate learning in both formal and informal settings, and hold the potential to help transform where and how learning is valued. (MacArthur Foundation, 2015)

http://www.macfound.org/programs/digital-badges/
Please complete the poll: http://goo.gl/1limMn
Badges Allow Students to

Choose best progress to complement their goals and interests

Gain credits for the skills they acquire across college and their lifelong learning experiences

Share, combine and present their accomplishments to unlock new employment and education opportunities

Control and manage their own credentials

ACCLAIM, 2013
Open Badges help you share your skills & interests with the world:

- Chef School
- Online Learning
- Job Training
- Community Farm
- Volunteer Program

LEARNER

https://wiki.mozilla.org/Badges/About
Debate: Good Badges, Evil Badges

**Pro:** Superior to grades for evaluating student performance

**Con:** Stifle student’s intrinsic motivation and focus only on winning badges (OpenBadge, 2012)
Theoretical Background
Evolution

- Military
- Scouts
- Video-games
## Achievement Goal Theory (Elliot, 1999)

<table>
<thead>
<tr>
<th>Mastery approach goals indicate a desire to achieve mastery based on one’s own interest.</th>
<th>Performance approach goals reflect a desire to perform demonstrably better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery avoidance goals, in theory only, do not reflect real-world contexts.</td>
<td>Performance avoidance reflects the desire to avoid the appearance of underperforming.</td>
</tr>
</tbody>
</table>

Positive correlation between mastery learning and academic outcomes (Elliot et al., 2006)
## Achievement Goal Theory Examples

<table>
<thead>
<tr>
<th>Mastery approach goals: One of my goals this year is to master a lot of new skills in Math</th>
<th>Performance approach goal: It is important that I look smart compared to others in Math.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery avoidance goals</td>
<td>Performance avoidance: One of my goals in Math is to avoid looking like I have trouble doing the work.</td>
</tr>
</tbody>
</table>
Achievement Goal Theory (Elliot, 1999)

<table>
<thead>
<tr>
<th>Mastery approach</th>
<th>Performance approach</th>
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</thead>
<tbody>
<tr>
<td>Mastery avoidance</td>
<td>Performance avoidance</td>
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</table>

Negative correlation between performance avoidance and academic outcomes (Elliot et al., 2006)

Positive correlation between mastery goals and student use of cognitive strategies (Wolfters, 2004)

Positive correlation between performance approach goals and teacher-assigned grades (Wolfters, 2004)
Badges have both elements: Mastery and Performance.

Abramovich, Schunn, & Higashi, 2013
7th and 8th grade students worked on math cognitive tutor program 20 minutes a day for one month.

The impact varies among students with different ability. Low performing students show a high performance approach goal (i.e., earn more badges) at beginning. The more badges they earned, the students showed a decrease in performance avoidance goal.

The badges made little impact on high-performing students.

Badges as extrinsic motivators can have a negative influence on learning. The more badges a student earned, the less concerned they were about performance, especially low-performing students.

Abramovich, Schunn, & Higashi, 2013
Educational Badge Typology (EBT)

(Biles, Plass, & Homer, 2015)
Badge Player Profiles

(Biles, Plass, & Homer, 2015; Frye, 2013)
Study of Middle School Students

- Play Geometry game with badges and without badges
- No-badge group performed better in post-test
- No-badge group has higher mastery goal orientation
- Badges can help students with low mastery goal orientation but may hinder students with high goal orientation mastery

Noobs vs. Leets Geometry Game

(Biles, Plass, & Homer, 2015)
Good Examples of Badges
Mozilla's Open Badge

http://openbadges.org/

Earn badges

Issue badges

Display badges

Mozilla’s Open Badge

http://openbadges.org/
Who’s using Badges

Meteorite badges are common and easy to earn when just getting started.

Moon badges are uncommon and represent an investment in learning.

Earth badges are rare. They require a significant amount of learning.

Sun badges are epic. Earning them is a true challenge, and they require impressive dedication.

Black Hole badges are legendary and unknown. They are the rarest Khan Academy awards.

Challenge Patches are special awards for completing topic challenges.

https://www.khanacademy.org/
JavaScript

JavaScript is a programming language that grew out of a need to add interactivity to web sites within the browser. It has since evolved into an incredibly versatile language that is used for both client-side (within the browser) and server-side (code that serves web pages to users) applications.

- Introduction
- Functions
- Conditionals
- Review

Blackjack: Deal 'em Up
Challenge

Blackjack Part 2
Challenge

Blackjack Final
Challenge

100% Complete
100% Complete
100% Complete

Image: https://nevertrustuserinput.files.wordpress.com/2012/04/codeacademycomplete.png
Higher Education
Examples
Category-level Badges

[Diagram showing different badges related to skills, knowledge, honor, experience, and competence]

Badges for the SA&FS Competencies

UC Davis
Sustainable Agriculture & Food Systems Major
Module I:
INTERNET NAVIGATOR
Bloom's Taxonomy Levels I & II: Knowledge and Comprehension
Goal: Students develop conceptual knowledge and comprehension of using the internet.

Module II:
DIGITAL CITIZEN
Bloom's Taxonomy Levels II & III: Comprehension and Application
Goal: Students expand comprehension and practice application of skill sets necessary for using the internet.

Module III:
TECH-SAVVY AMBASSADOR
Bloom's Taxonomy Levels III & IV: Application and Analysis
Goal: Students apply and analyze mastered skills to think beyond the use of an application.

Module IV:
PRIME PROFESSIONAL STAGE
Bloom's Taxonomy Levels V & VI: Synthesis and Evaluation
Goal: Students develop a professional online portfolio to demonstrate their individual abilities and skill levels.
New Student Orientation

- Participating in Career Fair
- Attending speaker series
- Winning scavenger hunts

Seton Hall University

https://tltc.shu.edu/badges/index.php
Purdue’s Passport App

PASSPORT
Show what you know

More detailed than an academic transcript, Passport allows users to visually display their work as concrete evidence of their knowledge.

Available on the
APP STORE
Available on the
ANDROID MARKET
Launch
WEB APP

http://www.itap.purdue.edu/studio/passport/
Purdue's Passport Program

Challenge 1: Reflect...
An attitude of Intercultural Openness means you initiate and develop interactions with culturally

Challenge 2: Reflect...
An attitude of Intercultural Curiosity means you ask complex questions about other cultures and seek

Challenge 3: Reflect...
Knowledge of Cultural Self-Awareness means you articulate insights into your own cultural rules,

Challenge 4: Reflect...
Knowledge of Cultural Worldview demonstrates your sophisticated understanding of the

Challenge 5: Reflect...
Your skill of Intercultural Empathy interprets intercultural experience from the perspectives of

Challenge 6: Reflect...
Your skills of Intercultural Verbal and Nonverbal Communication articulate a complex understanding

https://www.openpassport.org/Badge/Openness/Criteria
edX from Harvard & MIT

Certificate of achievement
My Badge Experiment
Research Background

- Two K-12 technology integration courses in Fall 2014
- F2F: 12 weeks, 13 students (M: 3, F: 10)
- Online: 14 weeks, 17 students (M: 5, F: 12)
- Graduate students who are in-service and pre-service teachers
- Badges were issues for online discussion, assignment completion, knowledge contribution

Image: https://greendoorlabs.wordpress.com/2014/06/24/my-take-on-badges-and-gamification/
Progress Report

Acknowledgement

Participation

Motivation

Purposes
Knowledge Construction, Tech Tips

Goals

5

Assignment Postings

5

10

Peer Comments

Badges Implementation Take 1
Dr. Chou, we have a problem.

What badge is for what?
Open Badge Designer

An open-access image creator from MyKnowledgeMap to support all of your Open Badge building needs.

Build a badge!

Design Own Badges
Badges Implementation Take 2
<table>
<thead>
<tr>
<th>Introduction</th>
<th>Theories into</th>
<th>Google Apps</th>
<th>ISTE NETS</th>
<th>PBL</th>
<th>PLE</th>
<th>Mind Map</th>
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</table>

**Badges for Record Keeping**
<table>
<thead>
<tr>
<th>Final Grade</th>
<th>1:1 Learning Curriculum Upgrade</th>
<th>1:1 Learning</th>
<th>Flipped Learning Curriculum Upgrade</th>
<th>Flipped learning</th>
<th>MindMap curriculum upgrade</th>
<th>MindMap</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>COMPLETE/</td>
<td>-</td>
<td>COMPLETE/</td>
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Research Question

What are the impacts of badges on student participation, motivation, and peer interaction?
Data Collection

Action Research with Mixed Method Data

• Survey
• Instructor’s field notes
Please indicate your agreement or disagreement to the following statements: *

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The badge system helps me to monitor my progress in the course.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The badge system keeps me on track on completed assignments.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The badge system motivates me to complete tasks on time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The badge system is a factor that prompts me to provide peer comments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The badge system is a factor that prompts me to check peer projects online.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The badge system gives me a sense of accomplishment.</td>
<td></td>
<td></td>
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<tr>
<td>The badge system increases my productivity.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The badge system makes learning fun.</td>
<td></td>
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</tr>
</tbody>
</table>

What are the benefits of integrating badges in this graduate course?
How might the badge system have helped you in your learning?

What are the disadvantages of integrating badges in this graduate course?
How might the badge system not have helped you in your learning?

Additional comments
Data Analysis

- Survey Completion
  - Online: 4 out of 17 (24%)
  - F2F: 8 out of 13 (62%)
- Notes from conversation, email exchanges, and online postings
Monitor Progress

Disagree includes Strongly Disagree counts
Agree includes Strongly Agree counts

ALL
- Disagree: 17%
- Neutral: 17%
- Agree: 67%

Online
- Disagree: 25%
- Neutral: 25%
- Agree: 50%

F2F
- Disagree: 13%
- Neutral: 13%
- Agree: 75%
Check Assignment Completion

Disagree includes Strongly Disagree counts
Agree includes Strongly Agree counts

Online
- Disagree: 25%
- Neutral: 50%
- Agree: 25%

F2F
- Disagree: 13%
- Neutral: 75%
- Agree: 13%
Participation: Peer Project Review

- Disagree includes Strongly Disagree counts
- Agree includes Strongly Agree counts

**ALL**
- Disagree: 17%
- Neutral: 17%
- Agree: 67%

**Online**
- Disagree: 50%
- Neutral: 50%
- Agree: 0%

**F2F**
- Disagree: 0%
- Neutral: 25%
- Agree: 75%
Interaction: Peer Comments

Disagree includes Strongly Disagree counts
Agree includes Strongly Agree counts

75% Agree
17% Neutral
8% Disagree

Online
100%

F2F
63%
13%
25%

Motivation

Disagree includes Strongly Disagree counts
Agree includes Strongly Agree counts
Sense of Accomplishments

Disagree includes Strongly Disagree counts
Agree includes Strongly Agree counts

Online

Disagree: 25%
Neutral: 75%
Agree: 100%

F2F

Disagree: 38%
Neutral: 13%
Agree: 50%

All

Disagree: 17%
Neutral: 33%
Agree: 50%
Student Comments: Benefits

- Keep track of Progress
- Cool to get badges
- Like the challenges
- Alternative way of grading
- A motivator to complete tasks
- Give you some fun just like kids
- An indicator of good performance
Student Comments: Challenges

- Implement new badges too late
- Can't get their purposes
- A little slow in earning badges
- Need more consistently awarded (e.g., weekly)
- Can't keep track of progress and counts only certain assignments
Student Additional Comments

It kept me motivated and encouraged me to work hard.

I prefer the bar graph to show the overall progress of class work.

when maybe it is intended to be purely a fun way to reward positive activities. Is it supposed to be akin to a kindergarten teacher pasting stars on an assignment?
Conclusions

- Two types of student profiles:
  - Badges don’t matter (fun seekers & explorers)
  - Badges might matter (collectors, achievers, and socializers)
  - (Biles, Plass, and Homer, 2015)

- Overall positive experiences in encouraging class participation and interaction but did not increase interaction among peers

- Not a strong motivator for completing tasks on time

- Mixed reviews in overall experiences

- Need to budget time wisely

- Need to provide consistent and timely rewards

- No clear difference between online and f2f classes
Improvements

- Detailed Spreadsheet on all required assignments using Blackboard grade book
- Grade all submitted assignments within a week
- No badges in current courses
Recommendations

- Use badges only if a good system is in place
  - automatic issuing of badges for online comments and assignment completion
  - Good visual presentation of badges
  - Show all badges in a spreadsheet or chart. Use Bold or brighter color to indicate badges earned
  - A systematic alignment of badges with course objectives

- Proceed with caution

- Consider age groups

- May work better at program level: credentialing, achievements, competency-based, portfolio, etc.
Make Your Own Badges

- Open Badge Designer: [https://www.openbadges.me](https://www.openbadges.me)
- Photoshop tutorials
- Popular online icon, banner, badge generators
- ClassBadges (image credit)
Badge Award Systems

- Badges OS - Wordpress plug in for Badges
- Credly - A badge awarding platform
- Mozilla’s Open Badges platform
There are no evil badges or good badges. What matters is how we integrate them into the learning functions of an organization with sound pedagogy in mind.
Please complete the poll:
http://goo.gl/XT0xCV


Acknowledgement

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