

Badges

Computers for Learning CMSC 209

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Assessment

- Timely feedback helps learning
- Assessment is time-consuming
- Inaccurate assessment is counterproductive

Badge Systems

- Three types of badges
 - accomplishments (major vs minor)
 - participation badges
 - behaviors that generally lead to learning
- As with many things, there are both emotional and technical benefits.

Learner Motivation theory

- Mastery approach – mastery based on own interest
- Performance approach – desire to do better
- Performance avoidance – avoid perception of underperforming
- Mastery avoidance – no evidence it exists

Which correlated positively with academic outcomes?

Which correlated negatively with academic outcomes? (related theory?)

Major conclusions?

- Low-performing students earned badges towards performance, became more focused on how they were perceived

Major conclusions?

- Overall, students who used the cognitive tutor became less concerned about poor performance relative to other students and became more interested in math.
- Low-performing students:
 - Performance avoidance motivation decreased, interest in math increased
 - those with a higher desire to outperform other students earned more badges. However, the more badges earned by low-performing students also indicated less of an overall decrease in concern about their performance relative to other students.
 - **earning participatory badges correlated with an increase in performance avoidance motivation**
- High-performing students:
 - No changes in motivation
 - those who were less concerned about having poor performance relative to other students were the ones who earned more badges.
 - the number of skill badges earned was highly correlated with an increase in expectancy to do well at math

Essential Badge Elements

- Small, short-term goals
- Relationship between badge & how it was earned
- Display the badges publicly, worth something
- Correlated to the effort you made to earn it
 - Progress bar to show you how close you are

Is it important that there is a difference in how hard it is for some people to obtain?

- It is important that there be badges for different difficulties

Are very hard badges fair because low-performing students may not try for them?

- PhD as the “hard to get” badge
- Earning an A in a class graded on a traditional curve
- Student of the Week
 - Everyone can try for it
 - Not everyone gets it

Are badge systems all bad?

- The badge systems we’ve seen haven’t separated enough from traditional grade systems

- Achiever
- Competitor
- Collector
- Performer
- Artist – design the look of the badge, or buy outfits for your avatar
- Explorer – unlock interesting parts of the tutor
- Storyteller

Design a badge system for education

- Pre-college – choose age group
- Design for different “player types”
- Design for different skill levels
- Remember the motivational factors

Ideas

- Democratization of badge system
 - Have students decide the badges (teacher vetoes)
 - Different “player” types would argue for different badges
 - Teachers could identify “groups” of badges
 - Students decide subtasks
- Students part of process -> increases motivation
- They may choose things counter to learning
- More aggressive students control more

Ideas

- Achievement badge
 - Grades based on achievement, not limited
- Badges based on improvement, not absolute achievement
 - High achievers become teacher’s helpers
- Achievement badge each time you “level up” as opposed to the same bar for all
- Progress bar for each individual badge
 - Might discourage low-performing students
 - Scaffolding for the low-performing students

Ideas

- Harry Potter model
 - Teachers make up badges on the fly
 - Matches the random timing for rewards
 - Classrooms compete against each other

Essential Badge Elements

- Specific goals
- Self-evaluation of effort needed to attain goal
- Short-term goals tied to long-term goals
- Proper difficulty
- Focus on process, not just outcome
- Internal expectations
- External expectations
- Success models
- Agency