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 exits

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

Design a badge system for education

• 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

• Pre-college – choose age group
• Design for different “player types”
• Design for different skill levels
• Remember the motivational factors
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| • Democraticization 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 |
| • 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 |
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| • Harry Potter model  
  – Teachers make up badges on the fly  
    • Matches the random timing for rewards  
  – Classrooms compete against each other |
| • 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 |