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New Directions in Assessment

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Curricular assessment

- *Research about academic programs and instructional innovations to evaluate and improve the student experience and learning*

Student assessment

- *Giving feedback to students:*
  - *Graded (e.g., tests, quizzes, papers)*
  - *Ungraded (e.g., faculty feedback to students)*
  - *Student self-assessment (e.g., "I need to improve in…)*

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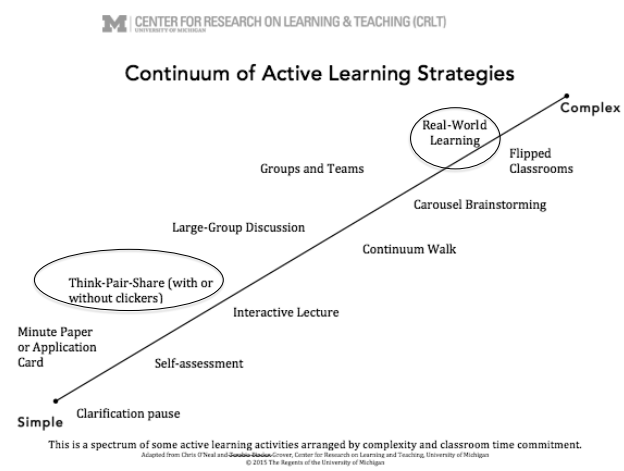
Agenda

1. University of Michigan trends
2. Assessment to promote learning
3. Authentic assessment
4. Gamification
5. Questions?



U-M Trends: Transformative Learning

$25 million initiative to promote:

- Creativity and innovation
- Intercultural and ethical intelligence
- Communication, collaboration & teamwork
- Leadership and civic engagement

How can assessment promote these goals?

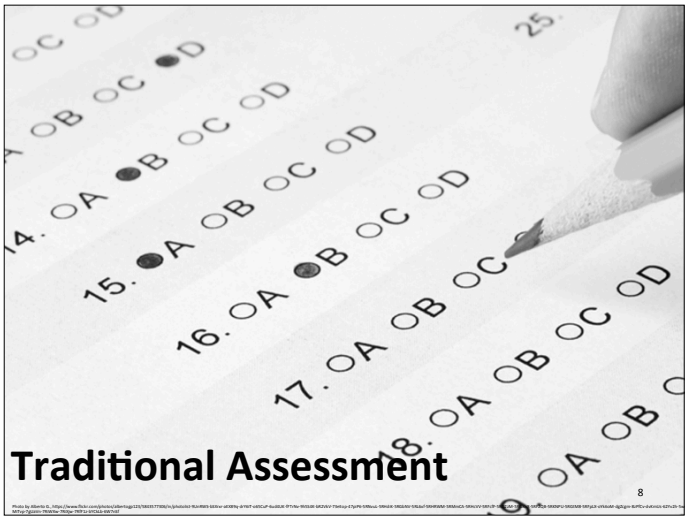
Universidad de los Andes
Principales Lineamientos Enstratégicos

- Los egresados de la Universidad de los Andes se distinguirán por ser:
  - Personas formadas interdisciplinariamente…
  - Personas formadas en las competencies claves requiridas para desempeñarse en el medio laboral actual.
  - Personas con actiutud de apertura, acogida y diálogo con los demás

Most Effective Learning Techniques

Technique	Description	Utility for Learning
Practice Testing	Self-testing or taking practice tests over to-be-learned materials	High
Distributed Practice	Implementing a schedule of practice that spreads out study activities over time	High
Interleaved practice	Implementing a schedule of practice that mixes different kinds of problems or material within a single study session	Moderate
Elaborative interrogation	Generating an explanation for why an explicitly stated fact or concept is true	Moderate
Self-explanation	Explaining how new information is related to known information or steps taken during problem-solving	Moderate
Keyword mnemonic	Using keywords to associate verbal materials	Low
Imagery	Forming mental images while reading or listening	Low
Rereading	Restudying text material again	Low
Summarization	Writing summaries of texts	Low
Highlighting/ underlining	Marking key portions of texts	Low

Summarized from Tables 1 and 4 of Dunlosky, J., et al. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest, 14*(1): 4-58.



Traditional Assessment

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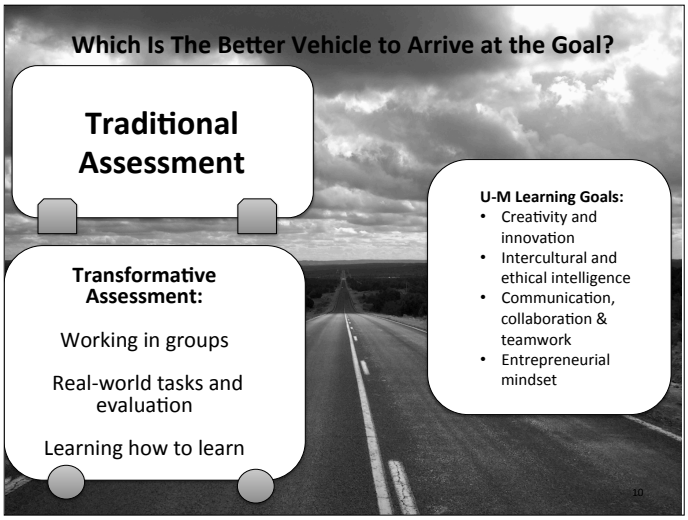
"They are not authentic; the way people make decisions in the real-world is forming the right answer in their minds, not finding it in a list. We want them to find that answer in their own minds based on their knowledge and understanding."

-Chancellor of CQ University, Australia



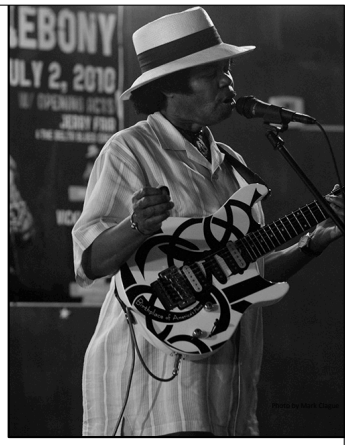
New Assessment Models

- Authentic assessment
- Gamification
  - Tournament approach to peer grading

Creative Commons image: The Friendly Fiend

Authentic Assessment

- Demonstrate application of skills, knowledge or attitudes
- Common characteristics:
  - Public
  - Involve some collaboration
  - Representative challenges of a field or subject
  - Ill-structured tasks



Grant Wiggins, "27 Characteristics of Authentic Assessment," Available: http://www.teachthought.com/learning/27-characteristics-of-authentic-assessment/

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Complex Example of Authentic Assessment

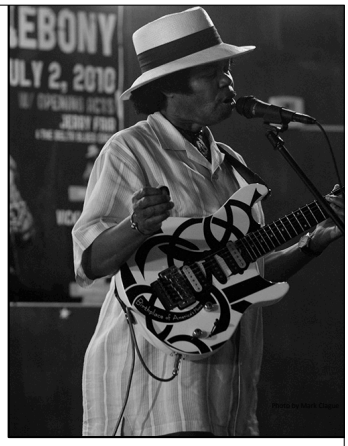
Bill Lovejoy, Ross School of Business and Stamps School of Art & Design

John Marshall, Stamps School of Art & Design and Architecture and Urban Planning

http://www.crlt.umich.edu/node/59257

Authentic Assessment

- Demonstrate application of skills, knowledge or attitudes
- Common characteristics:
  - Public
  - Involve some collaboration
  - Representative challenges of a field or subject
  - Ill-structured tasks



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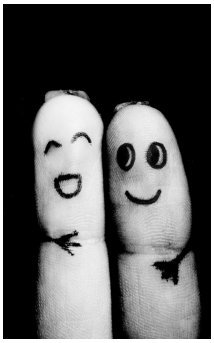
Simple Non-Graded Example *from Active Learning Continuum*



SHARE

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Think – Pair - Share

What is an assignment in your course that would lend itself well to authentic assessment?

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Agenda

①University of Michigan context
②Assessment to promote learning
③Authentic assessment
④Gamification
⑤Questions?

School is a Game

But is it a *good* game?

The Challenge We Face

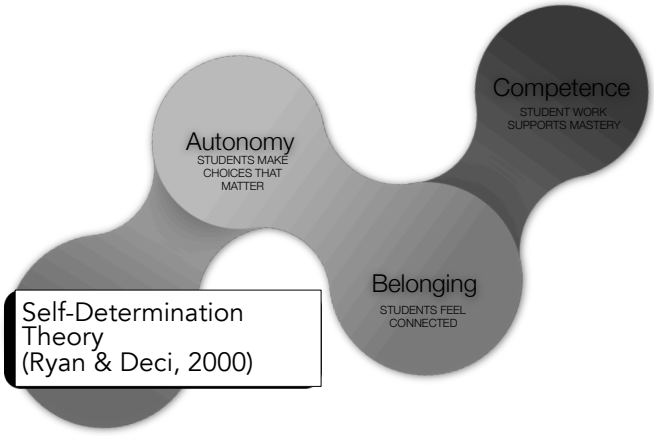
- We want students to:
  - be **deeply engaged** with subject matter
  - work hard and take on intellectual **challenges**
  - **take risks**
  - be **resilient** in the face of failure
- But the way our educational system is designed (including at Michigan) encourages exactly the **opposite behaviors**

Which Brings Us to…

- Games as models for learning environments
- **Well-designed** games:
  - Get players **engaged** early, and keep them engaged
  - Appeal to players' sense of **curiosity** (What will happen next?)
  - Encourage players to **take risks**
- People play well-designed games **BECAUSE THEY ARE CHALLENGING**, not despite the challenge

How can we make our courses into *better games?*

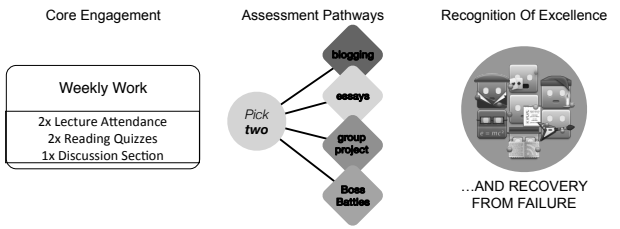
WHAT ARE THE **ATTRIBUTES** OF **GOOD GAMES/COURSES**?



THE **DESIGN** OF FOUR **GAMEFUL** COURSES

POLSCI 101: Intro to Political Theory

Emphasis: Personal Responsibility & Planning



Common foundation engaging all students with core materials.

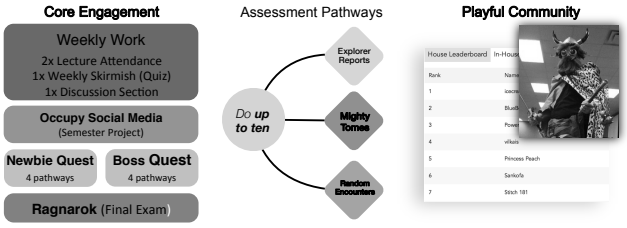
Students use self-knowledge to weight assignments in a way that allows for safe exploration.

Power-ups unlock new opportunities, recognize effort, and guide behavior.

THE **DESIGN** OF FOUR **GAMEFUL** COURSES

SI110: Intro to Information Studies

Emphasis: Exploration & Experience



Common foundation engaging with core materials, completing a semester-long project, and individual quests.

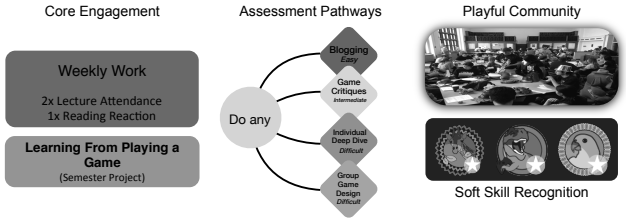
Students have autonomy to select additional coursework that matches their interests and timeline.

House Challenges and Leaderboards affirm competence and build a playful community.

THE **DESIGN** OF FOUR **GAMEFUL** COURSES

EDUC222: Videogames & Learning

Emphasis: Collaboration, Exploration, and Skill Development



Common foundation engaging with core materials and completing a semester-long project.

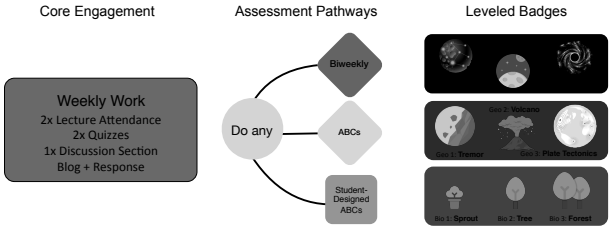
Students have autonomy to select additional coursework that matches their interests and timeline.

Team Challenges build a sense of community, while badges recognize extraordinary effort and accomplishment.

THE **DESIGN** OF FOUR **GAMEFUL** COURSES

HON242: Deep Time

Emphasis: Exploration & Specialization



Common foundation engaging all students with core materials.

Students have autonomy to work on topic areas that match their interests, as well as design custom assignments that explore core content.

Badges are awarded to recognize achievement in each primary content area.

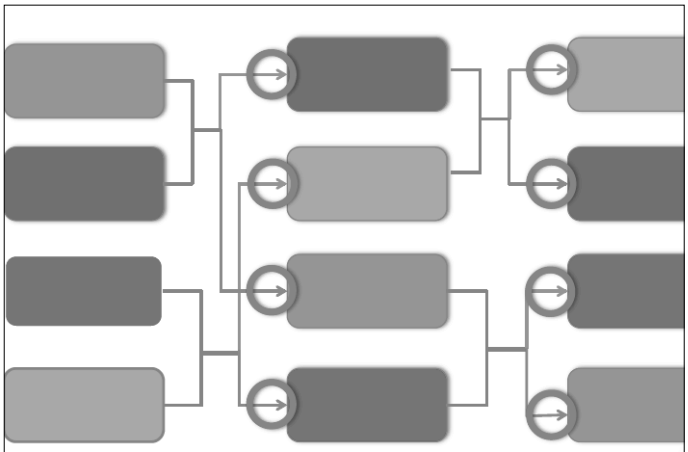
Tournament Approach to Peer Review

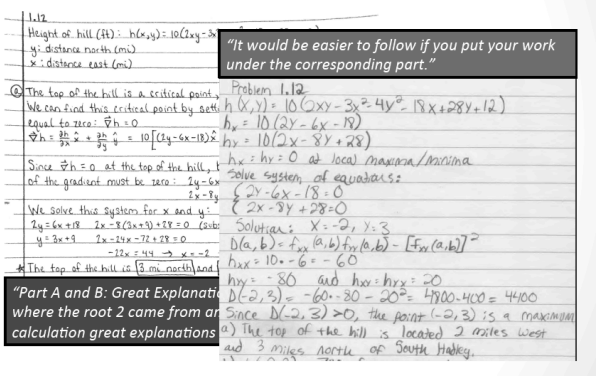
Physics: Intermediate Electricity and Magnetism

Dave Winn, Jared Tritz, Nicole Michelotti

Traditional Peer Review	**Tournament Approach**
Feedback for few students	Many students
Not anonymous	Anonymous
Often in person	Often online

Round 1 Round 2





Workshop at:
https://rebuild.lsa.umich.edu/psot/

Student Survey Feedback

- Benefits
  - Greater variety of solutions
  - Incentive to make solutions clear and to show work process
- Drawbacks
  - Could learn incorrect answers
  - Students could pick neatest answers

"I believe I learned more from them than if they were traditionally graded."

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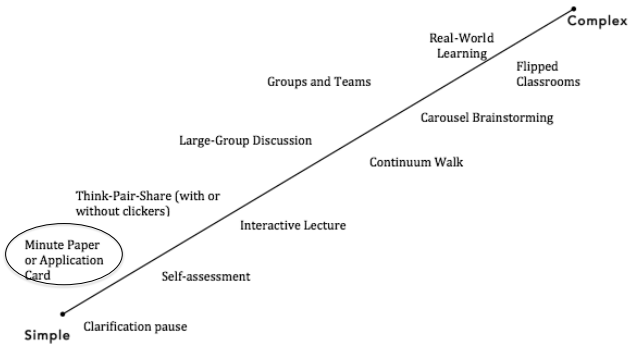
Continuum of Active Learning Strategies



This is a spectrum of some active learning activities arranged by complexity and classroom time commitment.

Adapted from Chris O'Neal and ~~Sundee Sisson~~ Grover, Center for Research on Learning and Teaching, University of Michigan

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Application Card

① *Department*

② *What is one idea from the workshop today that you could use or adapt in your own classroom?*