Teaching and Learning: Context Matters

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1. go to www.socrative.com
2. click on student login
3. input course code HAAVE8720
Where are you from?

A. Alberta
B. Canada
C. North America
D. South America
E. Overseas

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What are you studying?

A. Sciences
B. Arts
C. Professional (e.g. engineering, medicine, law)
D. Other

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Learning outcomes for this session

• Connect our learning experiences with our approach to learning
• Apply critical reflection to our own teaching (& learning)
• Explain the role of context
  – Determines degree of instructor talk vs active learning
Consider your learning experiences

• What was your best?
  – Describe it
  – Explain why it was your best learning experience

OR

• What was your worst?
  – Describe it
  – Explain why it was your worst
Now consider your teaching experiences

• What was your best?
  – Describe it
  – Explain why it was your best teaching experience

OR

• What was your worst?
  – Describe it
  – Explain why it was your worst
Is there any link between your best/worst learning/teaching experiences?
What are your goals for your students’ learning?

• What do you want your students to know/do as a result of your teaching?
  – Link this to the courses you teach

• Why is this important to you?
  – Why do you want your students to be able to do these skills or know this body of knowledge?
How do you achieve the learning goals of your students in your courses?

• Your wrote down the learning outcomes for your students on the previous slide
  – What teaching strategies do you use that enable your students to achieve these learning outcomes?
  – Are they informed by your best & worst learning and teaching experiences?
  – If the answer is no – why is that?
Why do you use the teaching strategies you use? Why not other strategies?

• What is your evidence that these particular teaching and learning strategies are effective for your students?

• Does the evidence come from your experience?
  – Do you have quantitative data?
    • E.g. impact on course marks.

• Are you able to link that experience with pedagogical research?
  – Do you have reflective data?
    • Do you reflect on your experience in light of educational theory?
Let your experiences inform your teaching

• Embed your teaching in how you understand learning to work
• Use your best learning and teaching experiences to guide what you wish to achieve and avoid
• Link your teaching and learning strategies to the pedagogical research
  – Just because a particular learning strategy worked for you does not mean it will work for all students
• Become a scholarly teacher – become a critically reflective teacher
  – Teaching is a scholarly activity
  – SoTL: the scholarship of teaching and learning

We do not learn from experience… we learn from reflecting on experience.

~ a paraphrase from John Dewey
The lenses of critical reflection

• Experience (e.g. best & worst)
• Students (e.g. USRIs; mid-course feedback)
• Colleagues (e.g. workshops; supervisors; fellow grad students; Deanna & John)
• Literature (e.g. educational theory and published evidence)

Books that have impacted my understanding of learning…1


Books that have impacted my understanding of learning…2


The science of teaching

*Which class would you rather be in: red or blue?*

**A** – red classes

**B** – blue classes

**C** – panel A red class, panel B blue class

**D** – panel A blue class, panel B red class

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The science of teaching: impact of active learning

If the experiments analyzed here had been conducted as randomized controlled trials of medical interventions, they may have been stopped for benefit—meaning that enrolling patients in the control condition might be discontinued because the treatment being tested was clearly more beneficial.

~ Freeman et al. 2014.

What are some examples of active learning?

• Personal response systems
• Drawing
• In-class problems
• Peer-peer discussions – social pedagogy
• Anything that promotes deep processing
  – see Chew 2014

How many of your undergraduate courses incorporated active learning on a regular basis?

A. many (> 75%)
B. most (50 - 75%)
C. a few (25 - 50%)
D. a couple (< 25%)
E. none

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So, why don’t more instructors implement active learning strategies?
Is active learning like broccoli? Student perceptions of active learning in large lecture classes

C. Veronica Smith¹ and LeeAnn Cardaciotto²

Abstract: Although research suggests that active learning is associated with positive outcomes (e.g., memory, test performance), use of such techniques can be difficult to implement in large lecture-based classes. In the current study, 1,091 students completed out-of-class group exercises to complement course material in an Introductory Psychology class. Students were assigned either active learning or content review activities. Students in the active learning condition reported greater retention of and engagement with the course material but not greater enjoyment when compared to students in the content review condition. The importance of choosing pedagogical methods that promote the construction of knowledge rather than just behavioral activity is discussed.

Discrepancies between student perception and achievement of learning outcomes in a flipped classroom

Jenna Van Sickle¹

Abstract: In a college algebra course that used flipped/inverted pedagogy, students achieved learning outcomes at a significantly higher rate, as evidenced by results on the final exam. At the same time, student perception on a number of measures decreased significantly, including how interested students were in the course and whether the instructor effectively facilitated learning. This article will draw on a variety of research to suggest reasons for these discrepancies and possible solutions to help improve student perception in learner-centered instruction.
Why the student misperception?

- *Engaging in the hard, messy work of learning*
- First experience with learner-centered instruction
  - incongruent with student learning culture
- Lack of preparation outside class
  - in-class faced with what students do not know which may make them feel like they are learning less in class
- Student-student & student-teacher relationships
  - traditional is more equitable
  - learner-centered relies more on peer learning
- Class culture: is it okay to be wrong?


What things can be done to alleviate student resistance?

- Explain reasons at the beginning & during the course
  - Share the data/studies/literature
- Link the teaching strategies with post-college life
  - Ask students which skills they think they may need
- Give students a voice in expressing concern over you and their peers
  - Mid-course feedback for both the instructor and their team-mates
- Scaffold independent learning
  - This is tricky: it is critically situational & context dependent

How are these implemented in a particular class context?

The Perry Scheme of Intellectual Development


The art of teaching

- instructor experience
- learner maturity

Staged self-directed learning

• Zone of proximal development
  (Lev Vygotsky, 1896-1934)

• Scaffold opportunities to practice independent learning
  • Across the curriculum
  • Across the term
  • Within a learning module
  • Within a class

What can teachers do?

Learning results from what the student does and thinks and only from what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn.

~ Herbert A. Simon
(1916 –2001)
Nobel Laureate
Co-founder of Cognitive Science
Professor, Carnegie Mellon University
