

Introduction to the Problem Space of Learning and Instructional Design

Unspoken Pedagogies: Revealing and
Exploring Pedagogical Assumptions

T-543 Session 1, Spring 2018

Top Photo: © Mike Zellers, Bottom Photo: © U.S. Fish and Wildlife Service

Announcements

- HGSE classes start at 10 minutes after the hour.
- Videotaping class
- Section meetings begin next week. Friday section at 8:00 so there is a break between class and section.
- Melanie Reeves is my admin. She is in Larsen 509.
- PPTs go up by the day after class/ sometimes before class.
Videos a few days later
- Website and syllabus
- Class and Section participation
- Forming Reading Discussion Groups
- Anyone interested/able to switch to Friday afternoon section?
- Screens and parallel processing
- Lunch with Tina after class starting next week

Preview of Class (A type of Advance Organizer)

- Additional Framing for the Semester
- Building Class Community/Discussions (groups; sharing on course site; headlines)
- Unpacking Some Ideas about Learning: A Series of Reflections (pairs/small groups; headlines)
- Mapping the Terrain of Knowledge (whole groups)
- Break
- A Focus on Three Pervasive Pedagogies (mini-lecture; reflection)
- Section (Coming Week): Introductions and Information about Final Project

Teaching Fellows....

- Megan Cuzzolino
- Jennifer Reilly

Sections and Your TF

- TF/Section assignment
 - Questions to Tina
- Your TF is the first person to turn to with questions, etc. but I am glad to answer anything that would benefit from my input, too.
- Contact information for TFs will be on the course website.

T543 is a journey!

- Conceptual change: Looking inward to make what is implicit more explicit.
- Large framing ideas earlier to orient concepts/help you frame your projects.
- Moving on to specific powerful concepts from cognitive science and how they interact with instructional design.
- Towards more detailed instructional moves.
- Geared towards instructional moves that work for most learners with some attention in the research to cultural differences.

Project-Based

- The design process will be iterative.
- Sections will offer support as you work on parts of your project all semester.
- Only the Final Project is graded.
- Rubrics will be discussed in section in first half of the course. You may propose modifications.
- Examples of all kinds!
- The last page of the syllabus has important dates!

Curriculum Development Opportunities:

- EcoXPT

- Learning and Assessment Designs for a
School

Projects and Collaboration...

- We'll use our friend's minds well...
- By arranging it with your TF and running it past Tina, you can do a collaborative project or even a project that fulfills requirements for two classes...
- But, please read and be clear on HGSE's rules academic honesty.
- Academics vs. Teaching
- If you aren't sure, ask! We'll help you figure out what is okay and what is not, ahead of time!

Tina's Availability:

- Fridays, 12-1; Have lunch with me after class, drop in basis.
- Email me to set up a time to meet in person, SKYPE, or have a phone conversation.
- My office is in 421 Longfellow Hall.
- Email just before class or even late Thursday night often does not get to me until after class.
- If your email is urgent, please mark it that way and I will prioritize it.

Building Class Community/Discussions

Considering Class Discussions

- How can we use class discussions to build our individual and collective understanding?
- What assumptions about learning are embedded in how we engage in discussion?
- How is question-asking (who does it and the types of questions) an important part of learning?
- How is responsibility for a good discussion shared amongst the class community?
- (What are some of the instructional implications that can be culled from the readings for your own work?)

A good discussion in which the diversity of the participants, their contributions, and modes of participation is honored.

In groups of three...

- ...take a few moments to learn about each other. (Where are you from? What are one or two things that will help others to know you?)
- ...then consider at least two of the questions about class discussions.
- At least one person in the group should take responsibility for adding points from the conversation to the on-line discussion.

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Considering Class Discussions

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Based on the conversation and the readings, do you have any revisions to the goals and advice that you have for yourself?

Write it in a place in your notes where you can revisit it periodically.

Different Kinds of Conversations

How Do We Map the Terrain of Knowledge and Understanding?

What you know you know (explicit knowledge)	What you don't know that you know (tacit knowledge)
What you know you don't know	What you don't know you don't know

Reflect as a learner and an educator:

- What are your assumptions about the relative magnitude of each quadrant for most learners?
- What feelings might be associated with the different types?
- Can you imagine ways that one's culture might interact with how comfortable one feels about each quadrant.
- How comfortable are you, personally, with each quadrant?
- What are some implications of each for learning?

Unpacking Your Own Implicit Pedagogies: A Series of Reflections

For each metaphor, ask yourself....

- What are some things that you believe about the process of learning that the metaphor captures?
- What are some implications about instructional design that follow from this metaphor?

How is the process of learning
like a geode?



When generating ideas...

- Push past your first ideas. The best ideas often come after a lull.
- Try to come up with non-obvious connections.
- Try to generate different kinds of connections (flexibility).
- Adopt different perspectives on the question.

How is the process of learning
like metamorphosis?



A Look at Three Pedagogies:
Each With it's Own Assumptions
About the Nature of Learners:

What Aspects of Each Have Permeated Your
Own Theories of Learning?

Take a moment to remind yourself of the readings that you did of the summary sheets on Behaviorism and Constructivism.

During this part of class or after, post any questions that you have about Behaviorism, Constructivism, or Didactic Teaching under the Discussion Section for Week 1 in Canvas.

Didactic Instruction

- Learner is typically viewed as a “collector of knowledge”
- Learner is typically passive (but doesn't have to be)
- Learner absorbs information
- Typically a recipient but can pursue understanding by asking questions, mentally processing, etc.
- Teacher gives answers to students' questions
- Teacher is a dispenser of information
- Teacher decides what order the information is best absorbed (Feynman Effect”)
- Focus is typically on what material has been covered



Didactic Teaching is often viewed negatively...

- Students don't have the opportunity to discover puzzles or gaps in their knowledge.
- Student motivation tends to be lower.
- Students are less likely to learn the ways of knowing in a discipline.

Didactic Teaching can be useful for certain aims...

- ...efficiency; conveying information quickly and straightforwardly.
- ...conveying information to large numbers of people.
- ...helping people manage steps that they will not need to use again or that can be quickly memorized and for which deeper understanding is not necessary.

However, even with didactic teaching it is possible...

- ...to have mindful engagement and active processing.
- ...to encourage students to reflect and discover gaps in their knowledge.
- ...to help students learn about the epistemic assumptions and tacit knowledge in a field.
- ...to scaffold learners towards expertise more efficiently.



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Constructivism



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- Learner is active
- Constructs meaning from experience
- Pursues understanding by reasoning about puzzles, gaps in knowledge, etc.
- Learner is viewed as a sense-maker/theory-builder
- Teacher is a guide
- Offers experiences from which students can further understanding.
- Draws students' awareness to puzzles or discrepancies
- Focuses on what sense students are making as opposed to covering material

Constructivism when it goes well...

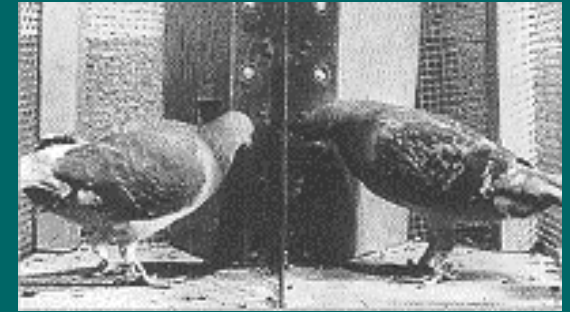
- Students can be active processors of information. It can be a mindful process.
- Students have the opportunity to discover puzzles or gaps in their knowledge.
- Students learn about how knowledge is generated in different disciplines (epistemology).
- Student motivation tends to be higher.
- Students own their learning.

Constructivism has its puzzles...

- Radical Constructivism- Students are expected to reconstruct the entire wealth of human knowledge
- Mindless Constructivism-Students are going through the motions but don't know why
- Overly Activity-Oriented-Students engage in activities with no mental processing of the activities
- Demands Incredibly Skilled Teachers- When teachers don't know the cognitive terrain, they can't help students traverse it.
- Some concepts involve information that is not perceptually available; are inferred; the result of human invention, etc.



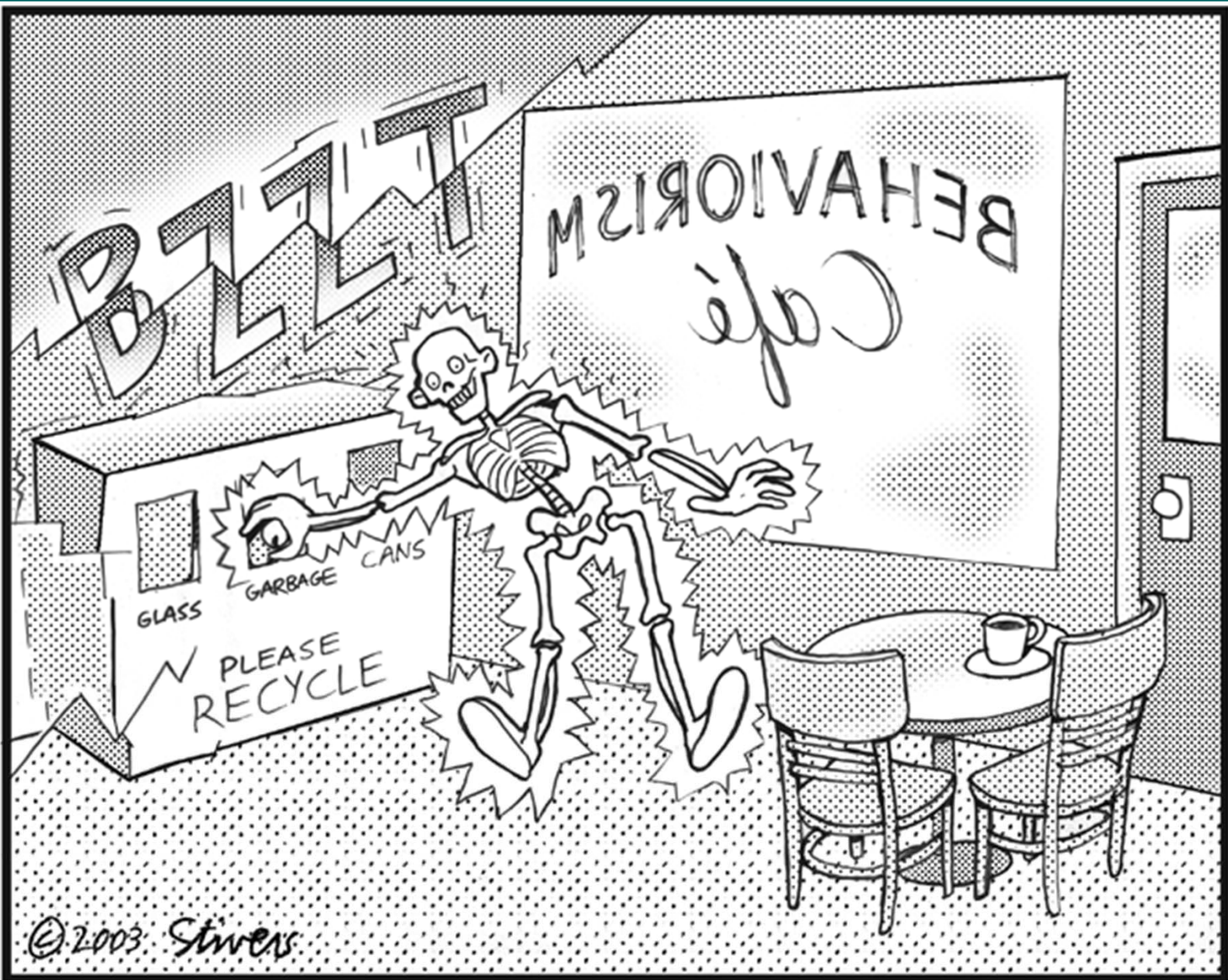
Behaviorism



- Learner responds to stimulus
- Behavior is shaped by what is reinforced
- Learner desires reinforcement (conditioned (ex: grades) or unconditioned (ex: food))
- Learning is viewed in terms of specific behaviors—the product
- Teacher decides what is important to learn
- Teacher breaks learning down into manageable pieces or learning tasks
- Reinforces desirable performance on learning tasks
- Focuses on whether students engage in behaviors/ reveals outcomes

Behavioral Reinforcers

- **Positive Reinforcement-** Rewards or stimuli that increase the probability of a response they have followed (*You eat your peas so you get a piece of cake; points in a video game*)
- **Negative Reinforcement-** Increasing the probability of a response by terminating or withdrawing an unpleasant stimulus upon completion of the response (*“You can get up now that you have eaten your peas.” (after an hour at the table in a hard wooden chair staring at them); You get out of prison in a videogame*)
- **Punishment-** The delivery of stimuli after a response that tends to reduce the probability of that response (*Getting a time out after you shoot your peas across the table; You make a wrong move/choice and lose your character in a videogame*)



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Improving Table Manners

RULE	POINTS
Used fork/spoon the whole time.	10
Kept all 4 chair legs on the floor.	10
Sat in seat the entire meal.	10
Asked to be excused every time.	10
Well behaved at dinner.	10
Brought plate to sink.	10
Ate most of the meal.	20

Total: **80**

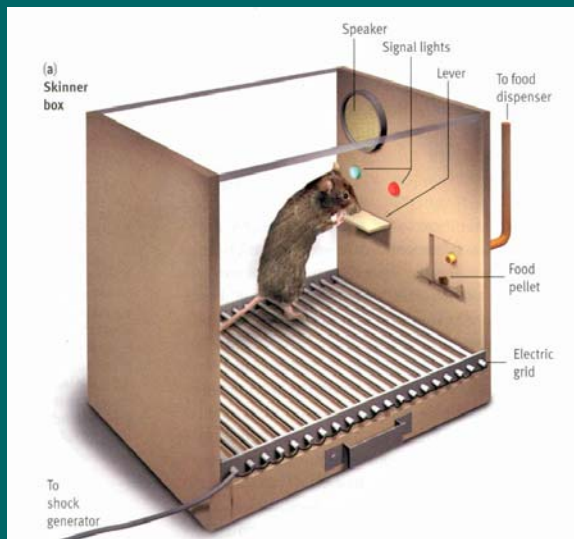
Must need 60 points for dessert.

The screenshot shows the 'YouEarnedIt' website interface. At the top, there is a search bar for 'Award points to someone' and navigation tabs for 'Points', 'Rewards', and 'Admin'. Below the navigation, there are tabs for 'ALL ACTIVITY (1)', 'RECEIVED (1)', 'GIVE (1)', and 'REDEMPTIONS (1)'. The main content area displays a list of activity items:

- Weped jayr:** awarded you **+1,000pts** (MAY 21). Message: "Thanks for putting the extra mile and get the report done by 8AM. You are always going over the top and I want you to know that I don't go unnoticed. I really appreciate your passion to get the job done and to get it done well. Keep on keeping on!"
- Carney Carol:** was awarded **250pts** by you (MAY 20). Message: "Be you the best! We love! Thanks for helping me out on Thursday. I couldn't have done it without you! You are always there for me when I need you. Always a star high five for all your hard work. Thanks again!"
- Milee:** was redeemed for **-500pts** (Pending **Carney Carol**).
 - MAY 20: Award delivered, Redemption Complete.
 - MAY 20: Request approved by administrator. This is the most popular way companies are using incentives. When companies will give their employees a certain budget of points each month or quarter that they can then use to reward and appreciate their colleagues.
 - MAY 20: Post redemption requested.

On the right side of the interface, there are two summary boxes:

- Introducing the New Points Page:** YouEarnedIt is happy to announce the latest changes to the Points Page. Here you will be able to see all your activity in one spot. [Read Full Update Details](#)
- Points to Redeem:** 32,000pts (View Rewards)
- Points to Award:** 32,000pts (Award Points)



Shaping

Changing the rules so that an animal or person is gradually trained to respond as you want



Behaviorism has not been viewed as a prevalent pedagogy in education recently...

- Replaced by cognitive psychology
- Considered mindless, manipulative, and mechanical
- Stereotyped Image of a Skinner Box (dehumanizing)

Not so simple! Concepts related to behaviorism have permeated our culture and education. It is alive and well in technology, schools, and so on...

Can you think of some examples?

Can you think of examples where it is used mindfully?



Reflection/Connecting Forward

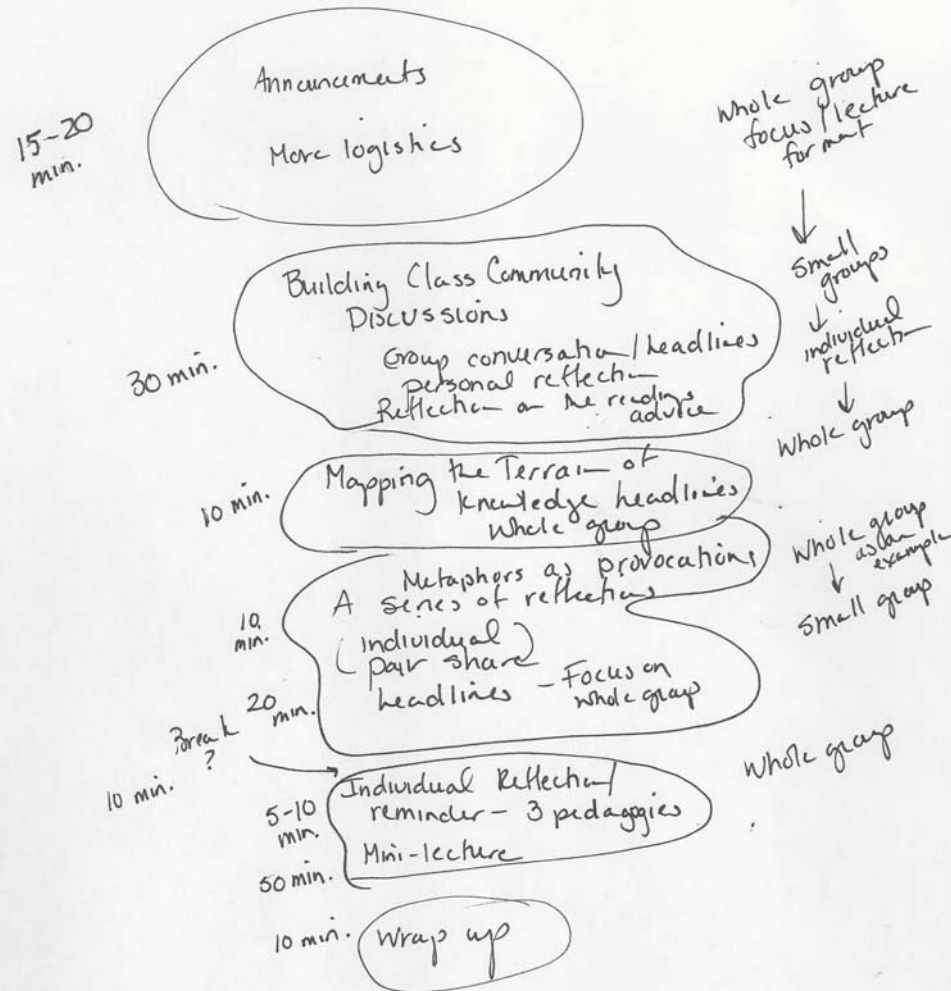
During the week...

- Notice times when your instruction (either as an educator or as a learner) has influences of constructivism, behaviorism, or didactic teaching.
- Reflect on the role that you assume as teacher/learner in each situation.
- Think about other metaphors that capture aspects of the learning process.

Unpacking Class Design Elements

- The class is based in a conceptual change framework. We started with provocations to reveal and encourage reflection on your current ideas and theories.
- The activities were designed to engage you in active processing of concepts and reflection.
- I used metaphor/analogy to lend different insights into the nature of learning as you map back and forth between target and base. Contrasting examples help to illuminate the features of each.
- I asked you to engage in forward-reaching connection-making (a transfer technique) to help you identify examples of different learning pedagogies in the world and to see how the examples live in your lives.
- To accommodate a class with ESLs and fair amount of cognitive load, I err on the side of more written information on my slides.

Thinking About the Class "Flow"



In Section Next Week:
Getting to Know Each Other and Framing the
Final Project (Prototype and Report)

- Prior to section, read the Project Overview/ Getting Started sheet (posted on the course website).
- Complete your Getting to Know You Sheet and email it to Tina and your TF.