

**Ed Psy/Tch Ed 6030: Instruction, Learning, and Assessment**  
**Thursdays, 5:30-8:10pm, 202 South Campus Classroom Building**

**Instructor: Joseph L. Polman, Ph.D.**

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*A Note on this Syllabus*

This syllabus is subject to change based on the needs of the class as a learning community. Adjustments will be made that generally benefit the group's learning opportunities.

**Description**

This course uses learning as the basis for the design of classroom instruction. By applying learning theories, teachers can improve their own unit development, lessons plans, assessment strategies, and the use of technology for effective teaching. Deals with the impact of cognitive educational research on the subject content and what is known about how people learn. Teachers will learn to critically evaluate and improve their own educational practices, design principled and appropriate assessments based on their instructional goals, and to assess their own professional development.

**Objectives**

1. Develop bridges between instruction and learning theory. How does theory explain instructional outcomes? What does it imply for instructional design?
2. Critique and evaluate case studies of instructional activity and outcomes to improve instruction, assessment, and use of technology.
3. Examine the subject matter domains one teaches (for instance reading, writing, mathematics, history, science), and what it means to be expert at different levels.
4. Develop one's own perspective on how people learn and its relation to instructional strategies and models.
5. Demonstrate ability to integrate technology meaningfully in instructional plans.
6. Demonstrate ability to design principled, appropriate assessments based on learning goals.
7. Critique, evaluate and improve one's own educational practices—including uses of teaching strategies, use of technology and assessment practices—based on what we know about how people learn.

**Readings**

Bransford, J. D., Brown, A. L., and Cocking, R. R. (Eds.) (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.

Wiggins, G., and McTighe, J. (1998). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

Online and electronic articles as detailed within the schedule below.

**Required Activities and Grading**

There are 3 main activities associated with the course (% of final grade is included in parentheses; incremental grading will be used for final grades):

- a) Attending class weekly and actively participating in hands-on activities and discussion, as well as occasional online discussions between classes. (20%)

- b) Completion of 5 written assignments.
- #1: Analysis of Understandings in Jasper Woodbury (10%)
  - #2: Concept Map related to your teaching domain (10%)
  - #3: Analysis of Learning in Jasper Woodbury Experience (10%)
  - #4: Analysis of the design of an enacted curriculum—science, math, literacy, or social studies (10%)
  - #5: Unit Plan (25%)
- c) An in-class exam on readings and course concepts during week 12 (15%)

**Note**

*If anyone has a health condition or disability, which may require accommodations in order to effectively participate in this class, please contact me privately as well as the Disability Access Services Office in 144 Millennium Student Center at 516-6554. Information about your disability will be regarded as confidential.*

Class schedule

**Week 1. Introductory Class:**

*Class Activity on Jan 13*

- Intros & Goals
- Syllabus review
- MyGateway
- Overview/Review of cognitive theory related to education

**PART ONE: What is knowledge?**

**Week 2. Knowledge and expertise**

*Assignments to be completed **before** class this week*

- Read *How People Learn* Chapter 1 (Learning: From Speculation to Science) and Chapter 2 (How Experts Differ from Novices)
- Participate in online discussion (cognitive theory related to instructional episodes in your teaching/learning)

*Class Activity on Jan 20*

- Discuss readings
- Hand out and discuss Assignment #1: Analysis of Understandings in Jasper Woodbury
- Conduct *Adventures of Jasper Woodbury* "Rescue at Boone's Meadow" as a group in class, keeping track of your experience as directed in Assignment #1

**Week 3. Knowledge and understanding**

*Assignments to be completed **before** class this week*

- Read *Understanding by Design* Ch 1 (What is Backwards Design?) and Ch 2 (What Is a Matter of Understanding) and Ch 3 (Understanding Understanding)
- Complete Assignment #1: Analysis of Understandings in Jasper Woodbury

*Class Activity on Jan 27*

- Discuss readings about understanding
- Hand out Assignment #2: Concept Map
- Introduction to concept maps, including construction of a concept map of understandings in Jasper Woodbury

#### **Week 4. Knowledge and teaching**

*Assignments to be completed before class this week*

- Read Novak, J. The theory underlying concept maps and how to construct them. Available: <http://cmap.coginst.uwf.edu/info/>
- Begin Assignment #2 by developing draft ideas for a concept map in a knowledge domain of your choice. Bring your notes/sketches to class.
- Read Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57, 1-22.

*Class Activity on Feb 3 (class will meet today in the E. Desmond Lee TLC, 100 Marillac Hall)*

- Working on and collaborating on concept map in groups (perhaps using Inspiration software)
- Discuss readings

#### **Week 5. Knowledge across the curriculum**

*Assignments to be completed before class this week*

- Read Stodolsky, S. S. & Grossman, P. A. (1995). The impact of subject matter on curricular activity: An analysis of five academic subjects, *American Educational Research Journal*, 32 (2), 227-249.
- Read *Understanding by Design* Ch 4 (The Six Facets of Understanding)
- Finalize Assignment #2 (concept map and description) –bring a paper copy to class, and turn in an electronic copy in the Digital Drop Box (if you did the map digitally, save it as a JPEG image; if not, just turn in the description digitally)

*Class Activity on Feb 10*

- Discuss readings
- Present and discuss your concept maps

### **PART TWO: What is learning? How does learning happen? What is evidence of learning?**

#### **Week 6. What is learning and how does it happen?**

*Assignments to be completed before class this week*

- Read *How People Learn* Chapter 3 (Learning and Transfer)
- Read "Interaction between learning and development," from Vygotsky, L. S. (1978). *Mind in society*. Cambridge MA: Harvard University Press.
- Write out and bring to class a question about one of the readings: question the author or the ideas in it
- Participate in online discussion

*Class Activity on Feb 17*

- Discuss metaphors for learning
- Discuss readings
- Revisit learning and how it happened in Jasper experience
- Distribute assignments to "sides" for next week's in-class debate

#### **Week 7. How is learning situated?**

*Assignments to be completed before class this week*

- Read Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, January-February, 32-42. Available: <http://www.exploratorium.edu/IFI/resources/museumeducation/situated.html>
- Read Cole, M. and Wertsch, J. (1996). Beyond the individual-social antinomy in discussions of Piaget and Vygotsky. *Human Development*, 39 (5), 250-256. Available:

<http://www.prometheus.org.uk/Publishing/Journal/Papers/ColeAndWertschOnVygotsky/Main.htm>

- Participate in online discussion

*Class Activity on Feb 24*

- Discuss readings
- In-class debate on an issue

### **Week 8. Learning in Knowledge Domains**

*Assignments to be completed **before** class this week*

- Read *How People Learn* Ch 7 (Effective Teaching: Examples in History, Mathematics, and Science)
- Read Bereiter, C., and Scardamalia, M. (1998). Beyond Bloom's taxonomy: Rethinking knowledge for the knowledge age. In A. Hargreaves A. Lieberman, M. Fullan, & D. Hopkins (Eds.), *International Handbook of Educational Change* (pp. 675-692). Dordrecht: Kluwer.
- Participate in online discussion

*Class Activity on Mar 3*

- Discuss readings
- Hand out and discuss Assignment #3 (How did learning occur in our experience of Jasper Woodbury?); revisit Jasper experience with your original small group

### **Week 9. Assessment: What is evidence of learning?**

*Assignments to be completed **before** class this week*

- Read *Understanding by Design* Ch 5 (Thinking Like an Assessor) and Ch 6 (How is Understanding Assessed in Light of the Six Facets?)
- Complete Assignment #3 (How did learning happen in Boone's Meadow?).

*Class Activity on Mar 10*

- Discuss reading
- Discuss assessment issues in Boone's Meadow
- Discuss ideas from Assignment #3

### **PART THREE: What is teaching?**

#### **Week 10. Teaching as the Design of Learning Environments**

*Assignments to be completed **before** class this week*

- Read *How People Learn* Ch 6 (The Design of Learning Environments).
- Read Savery, J. R., and Duffy, T. M. (1995). Problem based learning: An instructional model and its constructivist framework. *Educational Technology*, 35, 31-38.
- Participate in online discussion

*Class Activity on Mar 17*

- Discuss readings
- Hand out Assignment #4 (Analysis of the design of an enacted curriculum)
- Introduction to learning environments: BGuILE (Biology Guided Inquiry Learning Environment - Science). Making Weighty Decisions (Math), Sourcer's Apprentice (History), Say Say Oh Playmate (early literacy)

*Spring Break is this week; no class meeting on Mar 24*

#### **Week 11.**

*Assignments to be completed **before** class this week*

- Read *Understanding by Design* Ch 7 (What is Uncoverage?) and Ch 8 (What the Facets Imply for Unit Design)
- Read Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *Journal of the Learning Sciences*, 2(2), 141-178.
- Complete Assignment #4 (Analysis of the design of an enacted curriculum)

*Class Activity on Mar 31*

- Discuss readings
- Discuss Assignment #4
- Distribute and discuss Assignment #5: Unit Plan

### **Week 12.**

*Assignments to be completed **before** class this week*

- Read *Understanding by Design* Ch 9 (Implications for Organizing Curriculum), Ch 10 (Implications for Teaching), and Ch 11 (Putting It All Together: A Design Template)
- Participate in online discussion
- Begin Assignment #5 by generating ideas for "Desired Results" in your Unit Plan

*Class Activity on Apr 7*

- In-class exam on course readings and concepts from Weeks 2-11
- Discuss readings
- Work in groups (of similar content areas) on "Desired Results" for your unit plan, and raise issues for the whole class

*I will be at a professional meeting the week of Apr 14; no class meeting. I strongly suggest you use the time to continue work on your final assignment*

### **Week 13.**

*Assignments to be completed **before** class this week*

- Continue Assignment #5 by generating ideas for "Acceptable Evidence" and "Learning Experiences and Instruction" in your unit plan

*Class Activity on Apr 21*

- Work in groups (of similar content areas) on "Acceptable Evidence" and "Learning Experiences and Instruction" for your unit plan, and raise issues for the whole class
- Begin summarizing discussion using Inspiration

### **Week 14. Final Class Meeting**

*Assignments to be completed **before** class this week*

- Complete Assignment #5

*Class Activity on Apr 28*

- Evaluations.
- Present and discuss projects
- Complete summarizing discussion using Inspiration

Final version of project due by the assigned time of the final exam, Thurs, May 5, at 5:30pm.