Department of Teaching & Learning

Florida Atlantic University

College of Education

EME 6051: Models of Learning and Instruction
Fall 2010

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Office Hrs: By Appointment

CATALOG DESCRIPTION

An advanced investigation into a variety of learning models and the assumptions and implications inherent in applying such models. Explores the dissonance between opposing views of learning, and how mixed approaches can be effectively used to implement instruction in varying contexts. 3 Semester Hours

BOOK

There is no textbook for this class. This course will make extensive use of library and internet resources. Make sure that you have an Owl Card so that you can access the FAU library.

COURSE OVERVIEW

This course will provide an overview of various models of learning and instruction. We will begin by discussing some of the philosophical underpinning of research on learning. We will then consider definitions of learning and learning theories and examine multiple learning theories and models, including radical behaviorism; cognitive information processing; meaningful learning; schema theory; situated cognition; cognitive development; and biological bases of learning and memory. We also consider motivational factors in learning. Throughout the course we consider the instructional implications of the learning theories and models. The class will engage in hands-on experiences and participate in discussions that provide insights into the advantages, disadvantages, and limitations of learning theories. Students will also present instruction founded on learning theories. These experiences will prepare learners to acquire multiple perspectives on complex issues surrounding learning and instruction.

EXPECTED OUTCOMES

Roman numerals following the expected outcomes refer to ISTE / NCATE standards (http://cnets.iste.org/teachers/t_stands.html)**IV. GUIDELINES USED IN DEVELOPING COURSE OBJECTIVES**

Course Objectives/Outcomes - Standard - Assessment
(Roman numerals refer to ISTE / NCATE standards.) (http://cnets.iste.org/teachers/t_stands.html)

1. Define learning. (II, III, IV, VI)
2. Define instruction. (II, III, IV, VI)
3. Define learning theory (II)
4. Formulate a search strategy for discovering papers related to learning models. (I, V, VI)
5. Compare learning theories and models and consider their suitability for applying technology to learning. (I, II, III, IV, V, VI)

6. Differentiate between learning and instruction. (II)
7. Draw on learning theories, instructional design theories, and instructional methods to design and develop instruction. (II, III, IV)
8. Identify prominent learning theorists. (II)
9. Consider the social impact on student of instruction founded on various learning theories. (VI)
10. Discuss behaviorism and its implications for teachers and other designers of learning environments. (II, III)
11. Discuss cognitive information processing and its implications for teachers and other designers of learning environments. (II, III)
12. Discuss meaningful learning and schema theory and their implications for teachers and other designers of learning environments. (II, III)
13. Discuss situated cognition and its implications for teachers and other designers of learning environments. (II, III)
14. Discuss genetic epistemology and its implications for teachers and other designers of learning environments. (II, III)
15. Discuss motivation and its implications for teachers and other designers of learning environments. (II, III)
16. Discuss constructivism and its implications for teachers and other designers of learning environments. (II, III)
17. Discuss behaviorism and its implications for teachers and others who evaluate instruction. (IV)
18. Discuss cognitive information processing and its implications for teachers and others who evaluate instruction. (IV)
19. Discuss meaningful learning and schema theory and their implications for teachers and others who evaluate instruction. (IV)
20. Discuss situated cognition and its implications for teachers and others who evaluate instruction. (IV)
21. Discuss genetic epistemology and its implications for teachers and others who evaluate instruction. (IV)
22. Discuss biological bases of learning and memory and their implications for teachers and others who evaluate instruction. (IV)
23. Discuss motivation and its implications for teachers and others who evaluate instruction. (IV)
24. Discuss Gagné's theory of instruction and its implications for teachers and others who evaluate instruction. (IV)
25. Discuss constructivism and its implications for teachers and others who evaluate instruction. (IV)
26. Analyze positions on the incommensurability of competing learning paradigms and defend your position. (V, VI)

COURSE REQUIREMENTS

This course is divided into eight units that represent an investigation into the nature of learning and instruction. Each unit will be worth 20 points. Each unit will include specific assignments and assessments for obtaining points. Activities might include:

- Reading information on the web
- Accessing the FAU library (you need an Owl card for this!)
- Lab activities
- Quizzes
- Graded discussions
- Powerpoint presentations
- Podcasts
- …anything else I can think of

The course will begin by looking at the philosophical and historical roots of learning theory. We will then investigate contemporary views of learning theory and take a look at some prospects for its future. Each of the units will be available for about 2 weeks. All deadlines will be posted and must be strictly adhered to.

The units are:

	Unit	Topic	Points
Past	1	The Meaning of Meaning	20
	2	Our Behaviorist Roots	20
	3	Cognitive Psychology	20
Present	4	Constructivism & Project Based Learning	20
	5	Cognitive Science	20
Future	6	Artificial Intelligence	20
	7	Chaos & Complexity	20
		Total	140

In addition, each student will be assigned a specific topic to research. Details will be announces at the appropriate time during the semester. The results of your research will be presented to me as either a 20 page paper or a 20 slide Powerpoint presentation. This project will be worth 40 points. Again, details to follow.

Total Points Summary

Units 1 – 7	140
Project	60
Paper	25
Total	100

GRADING

Letter grades will be awarded based on a student's total point accumulation. The total points are divided by two and grades are assigned consistent with FAU's grading policy.

Grade	Points		Grade	Points		Grade	Points
			A	100-93		A-	92-90
B+	89-87		B	86-83		B-	82-80
C+	79-77		C	76-73		C-	72-70
D+	69-67		D	66-63		D-	62-60
F	59-0						

INCOMPLETES

Please review the FAU policy for incompletes. We follow this rule carefully. If you find yourself not keeping up with the work in the course, you will need to drop the course. Pay attention to the dates listed in the university calendar for withdrawing from, or dropping, a course.

ACADEMIC IRREGULARITIES

Plagiarism and cheating are serious offenses and may be punished by failure on quizzes, tutorials, cases, or Internet Assignments; failure in course; and or expulsion from the University. For more information refer to the "Academic Dishonesty" policy in the University Undergraduate Catalog.

XIV. NEED FOR ASSISTANCE

If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined, or which will require academic accommodations, please notify me as soon as possible.
I can be reached by email at cafolla@fau.edu or cafolla@comcast.net.

WRITING

A high standard of writing is expected in all graduate courses. Authors of ambiguous prose and text containing spelling and grammatical errors will be penalized. Clear, concise, and succinct expressions are expected. **APA format must be used.**

Contacting the Professor

I invite you to send me email at any time. I usually answer email messages within 24 hours, Monday to Friday (and usually on weekends). I will also be available online for "live" questions. Details will be explained. My personal cell phone number is 954-668-7528. Please only use it if it is important.

Bibliography

Bailey, J. (1996). After thought, Basic Books, New York, NY.

Briggs, J. & Peat, F. D. (1989). The turbulent mirror: An illustrated guide to chaos theory and the science of wholeness, Harper & Row Publishing Co. New York : NY.

Drexler, E. (1987). Engines of creation: The coming era of nanotechnology, Anchor Press/Doubleday: NY.

Fjermedal, G. (1986). The tomorrow makers: A brave new world of living-brain machines, Tempus/Microsoft, Redmond: WA

Gardner, H. (1985). The mind's new science: A history of the cognitive revolution, Basic Books, New York : NY.

Haywood, T. (1993). Adventures in virtual reality, Que Corporation, Carmel : IN.

Hamit, F. (1993). Virtual reality and the exploration of cyberspace, Sams Publishing, Carmel, IN.

Hofstadter, D. F. (1985). Metamagical themas: Questing for the essence of mind and pattern, Basic Books, New York : NY.

Hofstadter, D. F., & Dennett, D. C. (1979). The minds' I: Fantasies and reflections on self and soul, Bantam Books, New York : NY.

Hofstadter, D. F. (1979). Godel, Escher, Bach: An eternal golden braid, Vintage Press, New York : NY.

Krueger, M. W. (1991). Artificial reality II, Addison-Wesley Publishing, Reading, PA.

Levroff, N. (1992). Virtual reality playhouse, The Waite Group, Corte Madara : CA.

Levy, S. (1992). Artificial life: The quest for a new creation, Pantheon Books, New York: NY.

Levy, S. (1993). Artificial life: A report form the frontier where computers meet biology, Vintage Books, New York : NY.

Minsky, M. (1985). The society of mind, Simon and Schuster, New York : NY,

Naisbitt, J. (1994). Global paradox, William Morrow & Co., New York : NY.

Naisbitt, J. (1982). Megatrends: The new directions transforming our lives, Warner Books, New York, NY.

Negroponte, N. (1995). Being digital, Knopf Publishing, New York : NY.

Pagels, H. (1988). The dreams of reason: The computer and the rise of the sciences of complexity, Bantam Books: NY.

Prata, S. (1993). Artificial life playhouse: Evolution at your fingertips, The Waite Group, Corte Madara : CA.

Perelman, L. J. (1992). School's out: Hyperlearning, the new technology, and the end of education, William Morrow & Co., New York : NY.

Peat, D. F. (1985). Artificial intelligence: How machines think, Baen Computer Press, Simon & Schuster Publishing, New York : NY.

Poundstone, W. (1985). The recursive universe: Cosmic complexity and the limits of scientific knowledge, Contemporary Books: Chicago: IL.

Posner, M. (1973). Cognition: an introduction, Scott, Foresman and Co., Glenville: IL.

Rheingold, H. (1991). Virtual reality, Summit Books, New York : NY.

Schank, R. & Childers, P., (1984). The cognitive computer: On language, learning, and artificial intelligence, Addison-Wesley Publishing, Reading: MA.

Simons, G. L. (1984). Introducing artificial intelligence, NCC Publications, Manchester, England.

Sternberg, R. J. (1986). Intelligence applied: Understanding and increasing your intellectual skills, Harcourt, Brace, Jovanovich Publisher, San Diego : CA.

Waldrop, M. (1992). Complexity: The emerging science at the edge of chaos, Simon and Schuster: New York.

Winograd, T., & Flores, F. (1986). Understanding computers and cognition: A new foundation for design, Addison-Wesley Publishing, Reading: MA