I. Description

The primary goal of education is to stretch the mind, to increase each person’s ability to keep on learning on one’s own. This goal requires that educators understand theories of the nature and development of human abilities. They need to adopt a conceptual framework that explains the development of the important tools of learning and thinking and recognizes the propensity of all humans to acquire such tools. It also requires that teachers acquire a technology for the application of such theory in the classroom, integrate these practices in the school curriculum, and assess their effectiveness.

This course will make use of the Feuerstein/Vygotsky theoretical model of Mediated Learning (Feuerstein’s elaborate cognitive map and his empirically supported program, known as Feuerstein’s Instrumental Enrichment or FIE) to learn important principles of metacognition (thinking about thinking) as an essential mental tool for becoming an effective problem-solver. Included in the course are techniques and principles relating to: self-awareness, reflection, strategic planning, mental mapping, and inner dialogue.

Texts:

Feuerstein, R. et al. (2006). The Feuerstein Instrumental Enrichment Program. Glencoe (IL): International Renewal Institute, Inc. Order using attached order form (Avoid ordering through Amazon—they are far more expensive there than with the publisher). ISBN 965-7389-00-0. $60 plus shipping and tax.

Other required readings will be distributed in a packet, and on-line as well.

II. Objectives

During the course students will:

A. Become acquainted with theories of human cognitive development.

B. Become familiar with research on human cognitive development.

C. Be able to plan for classroom use of samples of the teaching materials of a cognitive-strategies program, which will include student strategies for acquiring and applying the strategies of: organization, orientation, comparison, analysis, synthesis, creating precise instructions, time relationships, hierarchies, and logic.

D. Be able to apply the transfer mechanism.

E. Be able to identify, analyze, and evaluate cognitive processes.
F. Be able to analyze tasks according to the cognitive processes they require, according to the Cognitive Map and how it relates to metacognition.

G. Demonstrate the verbal behaviors needed to encourage students' metacognitive behavior.

H. Become aware of one's own mental processes and how that awareness can lead to becoming a more effective problem-solver.

I. Construct and peer-teach model lessons which foster metacognition.

J. Use a working knowledge of the rationale for metacognition, its manifestations, and strategies for promoting it with learners.

III. Content Outline

A. The theory of Structural Cognitive Modifiability and survey of the research on human cognitive modifiability and metacognition.

Three characteristics of human structural cognitive modifiability will be discussed from both theoretical (Gestalt and constructivist) research and applied points of view. Those include:

- Permanence - endurance across time and space
- Persuasiveness - part affects whole and vice-versa
- Centrality - self-perpetuating, self-regulating

B. Cognitive Developmental and Learning Models

Socio-cultural theories (Vygotsky, Feuerstein) will be compared with the Piagetian model and the behavioral models of cognitive development. The implications for classroom teaching and metacognition will be discussed.

C. The Multidimensional and Multifaceted Nature of Cognition

Various classification models of intellective abilities will be reviewed. The discussion will include the theoretical, empirical, and applied aspects of these models.

D. Cognitive Functions (emphasis will include functions at the input, elaboration, and output phases).

Cognitive functions concerning the quality and quantity of data gathered by an individual in an attempt to solve problems that will be analyzed. These include: perceptual problems, impulsivity, impaired spatial and temporal orientation, lack of need for precision, deficient organization, and more.

E. Analysis and Hands-on Experience with samples of the cognitive tools used in a cognitive-strategies program, including the purpose of metacognition.

F. Discuss how the Theory of Mind fits with metacognitive awareness

G. Develop and practice techniques of metacognition and analyze its place in the problem-solving process.
IV. Evaluation

This course is an intensive, practical graduate course for professional development.

The following standards apply to all assignments and participation in this course:

Participation in classroom discussions and exercises should demonstrate the acquisition of the course content.

The required papers (see Assignments) should demonstrate a high level of integration and reflection, including mechanical accuracy.

V. Assignments

Students will be responsible for the following assignments:

1. Prepare a lesson plan which utilizes one of the instruments explained in this course, including topic, objective, activities, materials, adaptations for special-needs learners, and assessment techniques; teach the lesson to the rest of the class; after feedback, include the lesson as part of a professional portfolio. The lesson will include techniques of inducing metacognitive behavior in students, and will be presented to the group on Monday, October 24.

2. Read, summarize, critique, and present to the rest of the class a review of one of the books or three of the articles listed in the bibliography. Present the summary orally on Monday, November 14, with written outline to the instructor.

3. Complete an Observation Report of a classroom in action of your choice, describing the kinds of metacognitive activities and questions that the teacher organizes and their outcomes as you see them. Use the Observation Guidelines at the end of the syllabus. Prepare to summarize your observations and submit the Report on Monday, December 5 or before.

4. Write one long paper (10 pages double-spaced, plus references) on the theoretical rationale for metacognitive activities, followed by plans for how to integrate 5 different cognitive activities in relation to the subject matter for which you are responsible in the classroom where you teach (math, language, social studies, science, or other subject), together with at least two metacognitive questions that you would ask students for each of the 5 activities. Due Monday, Dec.12.

NOTE: This assignment may be included in the Reflective Practitioner’s Portfolio (http://cctrpp.wikispaces.umb.edu).
Required Readings (to be distributed electronically)

Metacognition and Cognitive Monitoring (Flavell)
Fact Sheet: Metacognitive Processes
What is Metacognition? (Martinez)
Metacognition
Metacognition (Wikipedia excerpt)
Metacognition (3 basic elements)
Metacognition—Thinking about Thinking (a skills list)
Metacognition: Strategies for Four Thought (Hanson)—to be sent electronically
Who Needs Metacognition More: Students or Teachers? (Kozulin)
Excerpts from Feuerstein and Rand, Instrumental Enrichment, 2006 – purchase, using order form

Bibliography (Select from non-asterisked items for required article/book review):


*=to be discussed in class sessions

School Cancellations. In the event of a school cancellation, we will resume class as usual on the next scheduled class day. Changes to the class schedule will be discussed during the first class meeting following the cancelled class.

Code of Conduct. The University's Student Code of Conduct (http://www.umb.edu/life_on_campus/policies/code) exists to maintain and protect an environment conducive to learning. It sets clear standards of respect for members of the University community and their property, as well as laying out the procedures for addressing unacceptable conduct. Students can expect faculty members and the Office of the Dean of Students to look after the welfare of the University community and, at the same time, to take an educational approach in which students violating the Code might learn from their mistakes and understand how their behavior affects others. It is your own responsibility to understand and abide by UMass's Student Code of Conduct, which includes the university’s academic honesty policy. Please note that failing to observe this policy can result in severe penalties ranging from a 0 on an assignment, to failing the course, to being expelled from the university.

Accommodations. Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center (287-7430). The student must present these recommendations to each professor within a reasonable period, preferably by the end of the Drop/Add period. Consult with the Ross Center for assistance.

Overview of Grading.  

<table>
<thead>
<tr>
<th>Grading Process</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Class participation: 25%</td>
<td>A: 95-100 points</td>
</tr>
<tr>
<td>Lesson Plan: 15%</td>
<td>A-: 90-94</td>
</tr>
<tr>
<td>Articles/Book Critique: 20%</td>
<td>B+: 86-89</td>
</tr>
<tr>
<td>Observation Report: 15%</td>
<td>B: 83-85</td>
</tr>
<tr>
<td>Final Paper: 25%</td>
<td>B-: 80-83</td>
</tr>
</tbody>
</table>
Course Schedule:

September 12
Session 1—Overview of the need for critical thinking and cognitive development
Review of the theories of cognitive development, with emphasis on Piaget, Vygotsky, and Bruner; key concepts of metacognition
Distribution of materials; a cognitive and metacognitive activity

September 19
Session 2—The theory and characteristics of mediated learned experience; the purposes and techniques of metacognition in the classroom
The history of cognitive mediation in cultural contexts
Strategy 1—projecting virtual relationships and being organized
READ: Milestones in the “Thinking Movement” (emailed)
Metacognition (description of a skill)
Flavell, Metacognition and Cognitive Monitoring
Fact Sheet: Metacognitive Processes

September 26—no class

Oct. 3
Session 3—Criteria for selection of a thinking-strategies program
A Memory activity
The Cognitive Map--phases of cognitive functions (emailed)
READ: What is Metacognition? (Martinez)
Metacognition (Thinking about Thinking)
Feuerstein (Theory of Mediated Learning)
Feuerstein, Chapters 1 and 2, and pp. 185-196

Oct. 10
Session 4—Planning a cognitive-education learning episode
Integration of cognitive strategies into the regular subject matter of the curriculum; the place of metacognition in an instructional sequence for problem-solving
Comparison as a universal cognitive strategy and theme
A Guide for Academic Writing (emailed)
A Memory activity revisited
Oct. 10 (cntd.)

READ: Metacognition (Wikipedia excerpt)
   Metacognition (3 basic elements)
   Feuerstein, pp. 242-250

Oct. 17
Session 5—Analysis of a cognitive-learning episode
   READ: Metacognition—Knowing How to Learn
   Metacognition: Strategies for Four Thought (Hanson)

Oct. 24
Session 6—Metacognition and its place in the Executive Functions List
   Developing and sharing model lesson plans
   Learning and the Brain Conference Summary (emailed)
   Magic and the Brain
   DUE: Lesson Plan

Oct. 31
Session 7--Categorization and its pre-requisites; metacognition
   and its place in categorization processes
   Applications to all subject matter of the curriculum
   Three types of Metacognition
   READ: Feuerstein, pp. 251-257
   Developing Minds excerpts (Ed., Costa)

Nov. 7
Session 8--Review of strategies used thus far
   Applications of research to studies on metacognition
   READ: Who Needs Metacognition More?, Kozulin (emailed)
   The Ladder of Metacognition
   Stages of Metacognition

Nov. 14
Session 9—The application of Logic—a higher-order cognitive strategy
   Share reports on articles and books
   READ: Feuerstein, 248-256
   DUE: Oral Summary of separate book or 3 articles reviewed, with
   written report to instructor
Nov. 21
Session 10—The Theory of Mind—expansion of applications
World-wide research studies on cognitive mediation and
Metacognition
Theory of Lawrence Kohlberg on stages of emotional development
Empathy and metacognition
READ: Handouts on Theory of Mind, on website to be given

Nov. 28
Session 11—The role of teacher education; how teaching
changes as a result of cognitive education
Evaluating student progress in the acquisition
of cognitive strategies and the promote of students’
metacognition
A summary activity for metacognition: Synthesis
How metacognition enhances success in group cognition
READ: Feuerstein, pp. 454-456; 297-304
Think Out Loud (excerpts from Wilson and Conyers)

Dec. 5
Session 12—Summary of cognitive education and the place of metacognition
Observation of students’ metacognitive behavior, using criteria
below; report on observations
DUE: Observation Report

Dec. 12
Session 13—Summation of classroom actions to be taken as next
steps in the implementation of consist metacognitive
activities in the classroom
Sharing term paper contents
Course evaluation—use the link http://bit.ly/CCTEval
DUE: Final Paper
GUIDELINES FOR OBSERVING METACOGNITIVE BEHAVIOR

Verbalizes the Problem
Discusses how to solve the Problem
Identifies what needs to be Known
Develops a plan of Action
Recognizes when the plan needs to Modified
Evaluates the success of the Strategies used
Reflects on the Processes used
Identifies new Contexts for application of similar processes

Due: December 5, 2016
GUIDELINES FOR LESSON PLAN

Purpose:

Expected Outcomes:

Materials and Media to be used;

Procedural Steps:

Accommodations for students with Special Needs:

Assessment Procedures:

Follow-up Steps:
Due: October 24, 2016
GUIDELINES FOR ARTICLES/BOOK CRITIQUE

Statement of Author(s) qualifications

Summary of articles/book key ideas

Critique of articles/book ideas and applications

Closing Commentary

Due: November 14, 2016
GUIDELINES FOR TERM PAPER
Title Page
Table of Contents
Introduction
Literature Review
Methods of application of metacognition to one specific subject matter (math, language, social studies, science, the arts, etc.)
Frequency of application of metacognitive activities and assessment techniques
Three sample lesson plans, one of which may be a revised version of the Lesson Plan submitted earlier
Factors in implementing metacognition: how to promote its importance to School administrators, required teacher professional development,
Follow-up ideas for working with teachers
Conclusion, including future directions for promoting the place of metacognition
References
Appendices
(Remember to check for mechanical accuracy: spelling, punctuation, grammar)
DUE: December 12, 2016