SYLLABUS

METACOGNITION
Jul 13-30, 2009

Course: CrCrTh696 **3 credits**

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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 us 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) to learn important principles of metacognition 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.

Other handout readings on metacognitive processes, as assigned.

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 or "instruments" of FIE, 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.

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

Five classification models of intellective abilities will be reviewed. Those include Thurstone, Guilford, Gardner, Steinberg, and Feuerstein. The discussion will include the theoretical, empirical, and applied aspects of these models.

D. Feuerstein's Analysis of 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 Instruments of the Instrumental Enrichment program, including the purpose of metacognition.

F. Develop and practice techniques for the remediation of learners who have challenges with particular cognitive strategies.

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 should demonstrate a high level of integration and reflection.

V. Assignments

Students will be responsible for the following assignments:

1. 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, July 27, with written outline to instructor.

2. 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 Wednesday, July 29.

3. Write a short paper (3 pages double-spaced, plus references) on the application of Feuerstein theory to the classroom in the context of analysis of a videotape of classroom episodes using Instrumental Enrichment; make reference to the 3 different phases of the Feuerstein Cognitive Functions List. Due Thursday, July 16.

4. Write one long paper (10 pages double-spaced, plus references) on the integration of all of the instruments explicated in this course in relation to the subject matter for which you are responsible in the classroom where you teach. Submit paper by Thursday, July 30.

Bibliography

Books

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Beyer, B. (1988). Developing a thinking skills program. Boston: Allyn and Bacon.

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Vygotsky, L.S. (1986). Thought and language (Rev. ed.). Cambridge, MA: MIT Press.

Journal Articles

Belmont, J.M. (1989). Cognitive strategies and strategic learning: The socio-instructional approach. American Psychologist, 44 (2), 142-148.

Beker, J. (1989). On the nature of modifying environments: A preview. Child and Youth Care Quarterly ,18(3), 159-160.

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Ferrara, R.A., Brown, A.L., & Campione, J.C. (1986). Children's learning and transfer of inductive reasoning rules: Studies of proximal development. Child Development,57, 1987-1999.

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Susan, L.M. (1992). Training 101. Training and Development, June.

VLS (2002). Cleveland High Schools rock in math: Increased test scores lead to program expansion. New Explorer, I (2), 1, published by Virtual Learning Systems.

Course Schedule:

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

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: Feuerstein, chapters 1 and 2

Session 3-- Criteria for selection of a thinking-strategies program for the classroom
The Cognitive Map, with emphasis on phases of cognitive functions
Strategy 2—orientation in personal and geographic space
READ: Feuerstein, chapters 3, 4, 5.

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
Strategy 3—comparison
Developing model lessons and teaching them
DUE: Short Paper about videotape—Thursday, July 16

Session 5—Sharing of First Short Papers
Strategies 4 and 5—Analysis and Creating Instructions
READ: Feuerstein, chapter 6 and pp. 125-275

Session 6—Strategy 6—Understanding Absurdity
Developing and sharing model lesson plans

Session 7-- Strategy 7—Categorization and its pre-requisites; metacognition and its place in categorization processes; Temporal Relations and Progressions.
Applications to all subject matter of the curriculum
READ: Feuerstein, pp. 175-238

Session 8-- Strategy 10—Understanding Hierarchies
Review of all strategies used thus far
Discussion of handouts on Metacognition

Session 9—Strategies 11 and 12—application of Logic
Developing and sharing model lessons
READ: Feuerstein, 248-256
DUE: Oral Summary of separate book reviewed, with written outline to instructor

Session 10—Strategy 13—Synthesis
Understanding how this strategy incorporates all others
World-wide research studies on cognitive mediation and metacognition
READ: Feuerstein, pp. 239-248; chapter 8

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
READ: Feuerstein, chapters 9 and 10
DUE: Presentation by groups of Lesson Plans

Session 12—Overview of cognitive education and the place of metacognition
Sharing term papers
Course evaluation
DUE: Final Paper