Course Title: Motor Learning

Course No.: PHE 265

Location: Normal 106

Time: TTh 8-9:15 AM

Instructor: Marston

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Office hours: by appointment

Prerequisites: none

Text: *Motor Learning and Control for Practitioners* by Cheryl A. Coker 2\textsuperscript{nd} ed Holcomb Hathaway, 2009

Attendance: Attendance to lectures is not mandatory; however, there will be no make-up quizzes (these will take place during the lecture.) Materials covered in missed classes will be available from the instructor only to students with legitimate excuses as determined by the instructor.

Evaluation:

- 2 hourly exams 50%
- Final exam 33.4%
- Written assignments 16.6%

Course description: Motor development and learning as it relates to Physical Education, and explaining how changes in motor development impacts the learning of motor skills. Various motor learning theories are explored with application of these theories to Physical Education and coaching.

Student objectives: legend for relevant standards (Conceptual framework, Maine Teacher Standards, Maine Learning Results) *found at end of syllabus*
Student Objectives

Students will be able to:

1) Describe and define the different phases of learning a motor skill. (knowledge)
2) Identify and apply various motor control theories. (knowledge)
3) Define and apply the elements of information processing (knowledge)
4) Understand and describe various performance characteristics and the affects on the performance of motor skills. (knowledge)
5) Understand the characteristics of transfer of learning and the application to the acquisition of motor skills. (knowledge)
6) Understand how feedback and practice can affect skill acquisition (knowledge)
7) Learn to detect performance errors and how to change behavior to improve motor performance (knowledge)

Content

1. Introduction to Motor learning and motor control (1)
   - Nature of motor skills
   - Individual differences

2. Information processing (2)
   - Reaction Time
   - Attention
   - Arousal

3. Behavioral Theories of Motor control (3)
   - Coordination and control
   - Motor program theories
   - Dynamic interaction theories

4. Neural Mechanisms (4)
   - Nervous system
   - Vision
   - Proprioception
   - Information transmission
   - Memory
**FIRST HOURLY EXAM**

5. Stages of Learning (5)
   - Models of Stages of learning
   - Inferring progress/learner and performance changes
   - Measuring progress

6. The learner; Pre-instruction considerations (6)
   - Learning Styles
   - Transfer of learning
   - Motivation

7. Skill Presentation (7)
   - Learner preparation
   - Verbal instruction
   - Demonstrations
   - Guided discovery

8. Principles of Practice design (8)
   - Breaking down skills
   - Psychological strategies

**SECOND HOURLY EXAM**

9. Practice schedules (9)
   - Practice context
   - Practice distribution

10. Diagnosing Errors (10)
    - Skill analysis
    - Determining cause of error and resolution

11. Correcting errors (11)
    - Feedback
    - Augmented feedback

**COMPREHENSIVE FINAL**
Tentative Schedule

September 4-6  Chapter 1 – intro to Motor Learning
September 11-13  Chapter 2 – Informational Processing
September 18-20  Chapter 3 – Behavioral Theories of Motor Control
September 25  Lab
September 27-Oct 2  Chapter 4 – Neural Mechanisms
October 4  First Exam
October 11-16  Chapter 5 – Stages of Learning
October 18  Lab
October 23-25  Chapter 6 – Pre-instruction Considerations
October 30 –Nov. 1  Chapter 7 – Skill Presentation
November 6-8  Chapter 8 – Principles of Practice Design
November 13  Lab
November 15  Review
November 20  Second Exam
November 27  Chapter 9 – Practice schedules
November 29-Dec 4  Chapter 10 – diagnosing errors
December 6-11  Chapter 11- Correcting errors
December 13  Review
Tuesday, December 18  8 AM  Comprehensive Final Exam
The Conceptual Framework of the College of Education (CoE) is borne of our shared vision: Learning Together, wherein faculty and students acquire knowledge through implementation of a variety of approaches based on a multiplicity of learning theories. Learning occurs through social interaction, interaction with the environment, through knowledge or skills acquired by study, and through exploration and experience. Our holistic pedagogical approach to learning is driven by the 5 dimensions of our conceptual framework: knowledge, instructional strategies, diversity, reflection, and dispositions.

**KNOWLEDGE** Knowledge is the assimilation and accommodation of the various areas of study in becoming a teacher and an educated person.

There lies in knowledge an intrinsic value that comes with profound understanding, such as the elegant logic in numbers, or the artful arrangement of words that captures the human spirit. It is this beauty that engages the emotions and hence the learner. The intrinsic nature of bodies of knowledge including elaboration and organization of those areas of study are crucial in the development of a teacher. The focus of the content understandings implies attaining a depth of knowledge and this deep understanding is necessary to develop a capability to invent and evaluate concepts in the process of teaching. To achieve a depth of understanding requires the application of thinking processes such as scientific thinking, critical thinking, creative thinking and other forms of reasoning.

Thinking processes are connected to content knowledge and this process-product connection is reflected through in-depth understandings. Further, the content must be reflected in authentic situations for classroom application. The teacher must have the depth of knowledge which facilitates multiple interpretations of content. Attaining an in-depth authentic knowledge is accomplished through an ongoing process as students and professionals work together toward the goal of expert knowledge. The depth of knowledge acquired empowers the teacher and results in empowering students.
INSTRUCTIONAL STRATEGIES Instructional strategies reflect the art and science of pedagogy. Effective instruction facilitates student learning and provides a foundation for future achievement in the classroom.

Effective teachers are the instruction leaders in the classroom. Decisions and actions made by teachers are critical to student learning. Instructional leaders should accept responsibility for student learning and exhaust all efforts to facilitate student’s progress. Assessment of learning provides the data by which teachers make informed instructional decisions.

Diverse academic disciplines may necessitate unique classroom instructional strategies. CoE faculty employ research-based practices in varied classroom settings and with diverse student populations. Faculty embrace the challenges and opportunities at all teaching levels and disciplines. Believing that all students can learn, but not in the same place or in the same way is a critically important premise for instructional leaders. COE faculty support an holistic view of human potential.

DIVERSITY Diversity is the recognition and acceptance of differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language, religion, sexual orientation, and geographical area.

The CoE recognizes the importance of designing and implementing curricula that supports student teachers’ awareness and appreciation of differences that exist in the society at large, and in educational settings. An inclusive approach to education is stressed in coursework and field experiences emphasizing differentiated instruction, working with culturally diverse families, and cooperative learning. The CoE provides classroom and field experiences for prospective educators to grow both professionally and personally, and to acquire the knowledge, skills, and professional dispositions necessary for working with heterogeneous people. Candidates are assessed on their ability to work with students form a broad range of diverse groups. These experiences are intended to improve practice and to modify the CoE’s programs when necessary.

REFLECTION Reflection is integrated into leaning together and professional growth. We promote and encourage our students to become skilled reflective thinkers and devoted self-reflective practitioner.

Being a reflective thinker is the main dynamic behind learning and an outcome of learning together. Piaget’s notion of reflective abstraction is applied in everyday classroom learning as we develop new ideas and make sense of new information. Thinking reflectively implies a willingness to review, reexamine, evaluate and rethink concepts and processes and abstract and refine ideas from learning experience and social interaction.

An educator is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others and who actively seeks opportunities to grow professionally. Reflection not only occurs during the technical aspects of teaching – such as planning, teaching, assessing, evaluating, and revising – but encompasses social and ethical considerations. Effective teachers engage in on-going constructive analysis and critical reflection.
**DISPOSITIONS** Professional attitudes, values, and beliefs demonstrated through both verbal and non-verbal behaviors as educators interact with students, families, colleagues, and communities. These positive behaviors support student learning and development.

In addition to assessing content knowledge and pedagogical skills of pre-service teachers, the CoE identifies, evaluates, and develops students’ attitudinal behaviors, or dispositions. Dispositions are the human interface between teaching and student learning and are an increasingly important component of the TE program. How professional educators are disposed toward students, colleagues, administrators, curriculum, families, and communities, directly impacts student learning. Through modeling, curriculum integration, discussions, written documents, actions, and observations, students are expected to internalize the influences of dispositions.

**WORKS CITED**


(http://www.ncate.org).


Professional Standards for the Accreditation of Schools, Colleges, and Departments of Education: 2002 Edition, p.53


Maine Teaching Standards

1. Demonstrate knowledge of the central concepts, tools of inquiry, and structures of the discipline(s) s/he teaches and can create learning experiences that make these aspects of subject matter meaningful to students.

2. Demonstrate the ability to integrate the concepts, tools of inquiry, and structures among the disciplines.

3. Demonstrate knowledge of the diverse ways in which students learn and develop by providing learning opportunities that support their intellectual, physical, emotional, and social development.

4. Plan instruction based upon knowledge of subject matter, students, and curriculum goals.

5. Understand and use a variety of instructional strategies and appropriate technologies.

6. Create and maintain a classroom environment which supports and encourages learning.

7. Demonstrate the ability to support students' learning and well-being by engaging students, home, school, colleagues, and community.

8. Understand and use a variety of formal and informal assessment strategies to evaluate and support the development of the learner.

9. Demonstrate an awareness of and commitment to ethical and legal responsibilities of a teacher.

10. Demonstrate a strong professional ethic and a desire to contribute to the education profession