Psychology 710 – Training and Skill Acquisition
Tuesday 5:40 PM - 7:30 PM?
Room 205 - Poe Hall

INSTRUCTOR: Dr. Anne Collins McLaughlin
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OFFICE HOURS: By appointment
REQUIRED TEXTS: Set of readings available from Vista

COURSE OVERVIEW

The primary goal of this course is to explore general issues in skills, broadly defined, from both a methodological and a substantive perspective. We will cover skills in a variety of domains ranging from motor skills to complex cognitive skills. We will also discuss issues in expertise, automaticity, and training. Pedagogical tools for this class will include reading empirical studies and review articles, critically evaluating such papers, participating in group discussions, writing an integrative review paper, and learning by doing.

EVALUATION

Your course grade will be determined by:
(1) Learning by Doing (35%). You will acquire a skill this term. You must select an activity at which you are not already proficient. You will commit to practicing your skill 4-8 hours per week so you should select something you really want to learn. You must make your selection by January 22 because you need to start practicing and keeping a journal immediately. You also need to select metrics for performance assessment.

Ideas:

- Art (appreciation, painting, drawing)
- Board Game (Chess, Othello, Backgammon, Go)
- Bowling
- Candle making
- Calligraphy
- Computer Graphics
- Computer Programming
- Crossword Puzzles
- Dancing
- Fencing
- Film Making
- Foreign Language (including sign language)
- Juggling
- Knitting
- Magic
- Martial Arts
- Music (appreciation, playing, writing)
- Piloting
- Public Speaking
- Speed Reading
- Sports
- Typing
- Videogames
- Wine tasting
- Writing (haiku, poetry, limericks, stories)
- Yoga

(1a) Skill Acquisition Journal (20%). You are to keep a journal of your skill acquisition activities. You must start by developing some performance metrics so that you will be able to measure your baseline level of skill and monitor your performance from week-to-week. You must develop a system for training – how are you going to acquire this skill? What are your
performance goals? All of these initial activities and decisions should be documented in your journal. In addition, throughout the semester you should measure and track your performance, keep notes about quantitative and qualitative changes, errors, apparent plateaus, difficulties, frustrations, set-backs, and so on. You may want to introduce and assess variables such as massed versus distributed learning, retention intervals, or transfer to other activities. Keep your journal up to date – we will devote the first section of every class to discussion of skill development for class members (i.e., students will share their experiences so that we will all learn from everyone’s skill acquisition progress). You will turn your journal in on the last day of class.

(1b) Demonstration & Presentation (15%). On the last day of class you will demonstrate your skill to the class. If you have selected a skill that cannot be performed in class (e.g., playing the piano) or you do not wish to demonstrate in front of a live audience, you may videotape yourself performing the skill. You will also make a presentation of your journal – noteworthy transitions, graphics of performance improvements across time, classifications of errors, development of performance metrics, and so on. You will have a 10 minutes for your demonstration and presentation.

(2) Review Paper (30%). A 15-25 page review paper is due on April 15 at 4:30 PM. The paper will be an integrative review of the literature for the skill that you have chosen to acquire. You should review the literature for skill acquisition, transfer, and retention for that domain with consideration for accepted theories of training for that skill, measurement issues, controversies in the literature, and so on. Your paper should culminate in recommendations for optimizing skill acquisition and retention for that domain – based on the empirical literature. The paper should be in APA format for review papers. An outline (1-2 pages) of your paper is due at the beginning of class on February 12. The outline should provide the structure of the paper – the areas you are planning to cover, the sources you will be relying on for the different sections, areas of controversy, and so on. Thus you must have thought about your topic and done some reading by this time to be able to write a reasonable outline. I will provide feedback on your outline to ensure that you are covering all of the relevant areas.

NOTES:
- Remember what plagiarism is and how to avoid it (see next page).
- I will not read more than 25 pages (not including references)
- Papers will be penalized a full letter grade for each calendar day late.

(3) Discussion questions prepared for each class (25%). For each class you will prepare a one-page discussion of the readings (not a summary). You should extract the important issues of the readings, and, more importantly, propose discussion questions for class. The questions can be points of confusion, issues for further consideration, follow up research ideas, and so on. I will often ask you to read one of your questions for the class. These will be collected There is an example on Vista.

(4) Class participation (10%). You will be expected to participate in the class discussions by sharing your discussion questions and by participating in the general discussion of skill acquisition experiences.
Writing Papers on Topics in Psychology

1) Plagiarism

  "plagiarize: to steal and pass off (the ideas or words of another) as one's own; use (a created
  production) without crediting the source; to commit literary theft - present as new and
  original an idea or product derived from an existing source" (p. 898, emphasis added).

  present substantial portions or elements of another's work or data as their own, even if the
  other work or data source is cited occasionally" (p. 13).

2) Primary Sources

- ALWAYS go to the primary source, if available.

- In other words, don't trust anyone but yourself to interpret an article. If you are going to
  reference it, you should have read it.

- Exceptions - reference is in a foreign language; reference is a technical report that is not
  accessible (may be classified).

3) Use of References

- To support an assertion (e.g., "Distributed practice leads to better learning than massed
  practice." What research is this claim based on? A reference must be provided to support it).

- ALL references cited in the text MUST be listed in the reference list (in APA format - which
  includes the author(s), year, title, journal or book, volume, page numbers, and for books, the
  publisher).

- The ONLY references in the reference list are those that are referenced in the text. It doesn't
  matter if you read 30 other articles - if you didn't reference them in any way, they don't
  belong in the reference list.

- It is the author's responsibility to ensure that the references are complete and ACCURATE.
  It is therefore irresponsible not to double-check all of your references.
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<td>Historical Overview</td>
<td>James (1890); Bryan &amp; Harter (1899); Posner, DiGirolamo, &amp; Fernandez-Duque (1997)</td>
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<td>Models of Skills</td>
<td>Newell &amp; Rosenbloom (1981); Piroli (1999)</td>
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<td>Automaticity Theory &amp; Perceptual Skills</td>
<td>Shiffrin &amp; Dumas (1981); Schneider &amp; Chein (2003); Parr, Heatherbell, &amp; White (2002)</td>
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<td>ACT; ACT*; ACT-R</td>
<td>Anderson (1982); Anderson (1996); Taatgen &amp; Lee (1993)</td>
<td>Graphics – Bring examples (1-3 wks data)</td>
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<td>High Performance Skills</td>
<td>Mane &amp; Donchin (1989); Frederiksen &amp; White (1989); Kirlirk et al. (1998); Gopher (in press)</td>
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<td>Expertise</td>
<td>Ericsson &amp; Charness (1994); Gardner (1995); Ericsson &amp; Charness (1995); Eccles, Walsh, &amp; Ingledew (2002)</td>
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<td>Practice and the Brain</td>
<td>Chein &amp; Schneider (2005); Kelly Garavan (2005); Schumacher Hendricks D'Esposito (2005)</td>
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READING LIST

Week 1 – Welcome and Organization

Week 2 – Historical Overview

Week 3 – Training and Measurement Issues

Week 4 – Models of Skills

Week 5 – Psychomotor Skills

Week 6 – Automaticity Theory & Perceptual Skills

**Week 7 – ACT; ACT*; ACT-R**


**Week 9 – Memory/Cognitive Skills**


**Week 10 – High Performance Skills**


**Week 11 – Job Skills**


Week 12 – Expertise


Week 13 – Practice and the Brain


Week 14 – Dual Task Skills

