



**BI 698: Introduction to Educational
Research Methods
(1 graduate semester credit)
Spring-Summer 2015**

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Course Location:

- Online component (3 weeks prior to HAPS conference and 3 weeks after the HAPS conference)
- Either face-to-face component at the HAPS 2015 annual conference in San Antonio, TX, or online readings/assignments (in addition to the online component listed above).

Required Texts:

1. National Research Council. (2001) *How People Learn: Brain, Mind, Experience and School*, Washington, D.C.: National Academy Press (you may download a free PDF of the entire book at: <http://www.nap.edu/openbook.php?isbn=0309070368>)
2. Gurung, RAR and Schwartz B (2012) *Optimizing Teaching and Learning: Practicing Pedagogical Research*; Wiley-Blackwell. ISBN-13: 978-1118344668 (*this text may be purchased online at any of the various booksellers.*)

Computer Requirements:

- Participants must have access to Google Hangouts (a free download from Google).
- For synchronous online discussions, participants should have access to a computer with both a camera and a microphone (so the individual can project video and be heard in discussions).
- Participants should have a relatively fast internet connection (dial-up connections may be problematic) for online discussions and to access any additional online videos the instructor assigns.

Course Format: This is primarily an online course, with a face-to-face component at the HAPS 2015 annual meeting in San Antonio, TX. If you cannot attend the HAPS 2015 meetings, you will be required to read and comment on additional online readings written by the HAPS 2015 update speakers. The first part of the course will be online, and we will use the hapsconnect.org

website to access assigned readings and communicate with classmates. Weekly online synchronous video discussions will be held on Google hangouts. The second part of the course will be face-to-face instruction and will be held at the 2015 HAPS Conference in San Antonio, TX, from May 23-28, 2015. (For those individuals who cannot attend the HAPS conference, you will be assigned additional reading assignments authored by the update speakers at the conference, who will discuss some aspect of educational research.) The third part of the course will be online via the hapsconnect.org website. Final assignments will be peer reviewed, and both the peer review process and the submission of the final assignments will be done online via the hapsconnect.org website and Google hangouts.

Course Description: This course is for college level instructors who want to become more familiar with basic educational research methods. Participants will learn about metacognition, how people learn, the basics of quantitative versus qualitative educational research methods, how to search the educational literature database, the scholarship of teaching, and develop a foundation for implementing classroom research and assessment. Participants will learn the material through directed readings, online weekly synchronous discussion forums, and face-to-face instruction at the HAPS 2015 meetings (or additional online reading/assignment component, should the participant not be able to attend the HAPS 2015 conference). In addition, participants will apply the information they have learned in the independent development of an educational research question they want to examine in their own classroom.

Course Expectations: This is a graduate-level course, and participants should expect to be able to devote a significant amount of time in course work, which will include:

- Directed readings in educational research methods (~10 hours)
- Participation in weekly online discussion forums (through Google Hangouts) to discuss the educational research readings, speaker presentations, and final project (~5 hours)
- Attend and take notes at the 5 educational research update speaker presentations and the “How to Develop a SOTL project” workshop at the HAPS 2015 meetings, OR read and comment on assigned articles written by each of the HAPS 2015 update speakers (if participant cannot attend the HAPS 2015 conference) (~5-10 hours)
- Searching online databases for background literature about a specific anatomy and physiology educational research question (~at least 5-10 hours)
- Development and write-up of a 3-5 page proposal for an educational research project in your classroom(~5 hours)
- Peer evaluation of at least one other educational research project proposal of another HAPS-I participant (~2 hours)
- Incorporation of peer evaluation feedback into your final educational research project proposal (~2-3 hours)

Course Outcomes: Upon completion of this course, participants should be able to:

- Define the concept of metacognition and explain how an individual develops metacognitive skill
- Compare and contrast novice versus expert learners
- Explain how learning may be contextualized and may be affected by misconceptions
- Explain the basics of classroom research and the assessment techniques used in such research.

- Describe and evaluate the Scholarship of Teaching and classroom research literature that is most related to the issues the participant wants to explore.
- Search online databases for anatomy and physiology educational research literature
- Compare and contrast quantitative and qualitative educational research methods, and evaluate which method(s) are most appropriate for a specific research question
- Frame an educational research question that is clear, defined, assessable and meaningful
- Evaluate educational research studies regarding their research design and assessment methods
- Synthesize your knowledge by developing a proposal of an educational research question in the participant's classroom

Course Assessments and Grading Policy:

In order to pass this course, participants must earn 70% of the 200 total points assessed. Participants will be assessed in a variety of ways:

1. Participation in the synchronous discussion forums on Google Hangouts (50 points total): During 5 of the weeks of online instruction, participants will be expected to participate in weekly online discussion forums through Google hangouts. Participants will be expected discuss the online readings, ask questions related to the readings and educational research, and assist in answering student questions. Should a participant not be able to attend an online discussion session, an individual may make up online discussion points by submitting a 1 page summary of the week's online readings and list questions and ideas raised by the readings.

2. Attendance/participation at the HAPS-I update speaker sessions and the "How to Develop a Scholarship of Teaching Project" workshop at the HAPS 2015 meeting OR alternative online assignment (50 points total). There will be 5 update speakers at the HAPS 2015 meeting that will speak about some aspect of how students learn, metacognition, and educational research. Participants will be expected to attend these 5 update sessions, take notes, and formulate questions related to the topics of discussion in the sessions. In addition, participants will be expected to attend and participate in the workshop (held by the HAPS-I instructor) entitled "How to Develop a Scholarship of Teaching Project". Should an individual not be able to attend the HAPS 2015 meetings, alternative assignments must be completed (in the form of reading articles written by each of the update speakers and preparing written summaries/syntheses of these articles).

3. Final project (50 points): prepare a 3-5 page proposal about an educational research study designed by the participant: Following the HAPS conference, participants must submit a culminating project in the form of a 3-5 page proposal that outlines an original educational research question, is clearly defined, outlines appropriate methodology and assessment methods, and provides a review of relevant background literature. The project must be creatively and originally designed by the participant. Submissions will be peer-reviewed by classmates.

4. Peer review of a final project (20 points): Participants are required to write up a peer review of one of your classmates' educational research proposals. The peer review will include constructive criticism as described in the workshop session and related to the classroom readings, and should be approximately 1-2 pages long. Post the peer evaluation via email (and copy the instructor) and include information about whether the assessment methods are appropriate,

whether the participant developed a question that relates to the background literature, and whether the research question is well defined and assessable.

5. Submission of revised final educational research proposal (30 points): Read the peer review of the educational research proposal and incorporate the suggestions that are appropriate for your project and submit a revised proposal via email. In addition, participants should address all the peer review comments and how they were incorporated (or why they were not incorporated) in a separate document that is posted with the revised final project (much like when an author submits both a revised manuscript and a separate response to the journal editor about your revisions). Failure to turn in a timely peer review or failure to incorporate appropriate peer review comments will result in a partial or complete loss of these points.

Discussion Forum Participation	50 points
Attendance/participation at HAPS update speaker sessions and “How to SOTL” workshop OR reading and write-up of 5 articles written by the HAPS 2015 update speakers	50 points
3-5 page proposal of educational research project	50 points
Peer Review of Final Project (1-2 pages)	20 points
Revised educational research proposal that incorporates peer review feedback	30 points
TOTAL	200 points

Course Schedule:

Date	Topic	Reading or Class Assignment
Week 1: May 3rd	Introduction to Course, Metacognition, What is Pedagogical Research	How People Learn, Ch 1 Optimizing Teaching, ch 1
Week 2: May 10th	How to assess effective teaching, Expert vs. Novice Learners	How People Learn, Ch 2 Optimizing Teaching, Ch 2
Week 3: May 17 th	How to Assess effective learning, Learning and Transfer	How People Learn, Ch 3 Optimizing Teaching, Ch 3
Sunday May 24- Monday May 25	Quantitative vs. Qualitative Research Methods, How People Learn, Motivating	Optimizing Teaching, Ch 4 Attend 5 HAPS 2015 update seminars <i>(for those not attending the meeting, you will read 5 research papers written by the</i>

	Students	<i>update speakers)</i>
May 26 or May 27	How to Develop a Scholarship of Teaching Project	Attend HAPS 2015 Workshop O'Loughlin, How to Develop A Scholarship of Teaching Project, <i>Adv. Physiol. Ed.</i> , 2006 http://advan.physiology.org/content/30/2/83
Date	Topic	Reading or Class Assignment
Week 5: Jun 1st	Develop Educational Research Question	Educational Research Proposal due 5 pm EDT, Sunday, June 7
Week 6: Jun 8th	Peer Review of Educational Research Proposals	Peer Review due 5 pm EDT, Sunday, June 14
Week 7: Jun 15th	Modify, edit and finalize educational research proposal	Final educational research proposal due 5 pm EDT Sunday, June 21