SPLH 660: Research methods in Speech-Language-Hearing

Fall 2016

Class Meetings: Tuesdays and Thursdays 11:00 to 12:15; Dole 2094

Class Instructor: Nancy Brady, Ph.D.; nbrady@ku.edu; 785-864-0762

Office hours: by appt.

Contact Policy: I will make every attempt to respond to your email messages within 24 hours. If I do not respond within 24 hours, feel free to re-send your message. I get hundreds of emails a day and sometimes a message will get lost.

Graduate Teaching Assistant: Shadi Pir Hosseinloo; s571p882@ku.edu

Pre-/Co-requisites: English 102 and 9 credits of SPLH coursework

Course Description:
This course is about the methods used to conduct, describe and evaluate science in communication disorders. The fields of speech pathology and audiology are built upon notions of science and objectivity. Current practices are based on previous studies that have addressed questions such as: Is someone's communication difference a disorder or just a difference that would be considered within normal variation? What types of interventions have been proven to benefit individuals with various types of communication disorders? How much improvement should I expect with a given treatment? Who is likely to respond to a specific type of treatment? Which treatment is best for a particular type of disorder? Is there an association between certain illnesses or disorders and communication disorders?

An important emphasis of this course is how to use your knowledge of research methods to evaluate current or proposed interventions in communication disorders. You will practice summarizing research results in order to present these results to consumers.

Cell Phone Policy: There will be activities in class that require use of smart phones/cell phones or a computer application. There will also be some in-class time devoted to literature searches that will require use of computer search engines. Outside of these activities, **please do not text or check facebook or shop during class because these activities are very distracting to myself and other students**. In addition, these activities are negatively correlated with class performance.

Note taking policy: Pursuant to the University of Kansas' Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in SPLH 660 Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation Under the ADA, is not the same as commercial note-taking and is not covered under this policy.

The emphasis of this class is on how research can lead to better clinical services. Goals for this class include:

1. To evaluate research, including:
- Identifying the parts of a research study
- Evaluating how well researchers planned and conducted research
- Determining if the reported effects are significant
- Determining if reported results are important (e.g., should they be used in clinical settings or to guide future research?)
- Examine diversity and equity variables in research

2. To summarize and describe research in a particular area, including:
- Finding research for a literature review
- Synthesizing research for a literature review
- Communicating research to others including patients, parents, insurance companies, or other relevant stakeholders.

3. To plan a research study that will address a specific question or problem in communication disorders, including:
- Formulating a specific testable hypothesis
- Designing a study to minimize threats to external and internal validity
- Describing methods in sufficient detail to facilitate replication
- Gathering data that can be used to inform clinical decisions
- Following ethical practices
- Measuring reliability
- Communicating results in a clear concise manner

Course Materials:
Patten, M. (2009). *Understanding Research Methods.* Pyrczak Publishing, Glendale, CA. The page numbers in the syllabus correspond to the 9th edition, but there is little variation between editions so you can use edition 8, 9, or 10, just match up the topics (italicized page numbers correspond to the 8th edition).

Offit, P. 2008). *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure.* Columbia University Press, New York.

On-line Resources:
1.   Blackboard course website at http://courseware.ku.edu
2.   Readings, recorded lectures, quizzes and additional readings and resources will be posted at the Blackboard site.
3.   Writing assignments will be entered to the Peerceptive website: http://www.peerceptiv.com/
      Course name in Peerceptive is: SPLH 660 F 16
      The class code that you will need for logging in is: field82
      There is a one time $5.00 charge for accessing Peerceptiv so please have your credit cards available when you log in.
      Answers to Frequently Asked Questions by Students are available at the website: http://www.peerceptiv.com/wordpress/help/
      Further instruction on using Peerceptiv will be forthcoming

Course Content: The following calendar represents the planned course of events, but we may need to shift some dates as the course progresses. Any changes will be posted on blackboard and announced in class. The regular text corresponds to the 9the edition of Understanding Research Methods and the *italicized* text corresponds to the 8th edition.

Date	Topic	Readings and Recorded Lectures	Assignment- note quizzes are to be completed before class
August 23	Course introduction	None	None
August 25	The Scientific Method; Experimental vs. nonexperimental research	Patten pp. 1-10 *pp. 1-10* Recorded lecture: experimental and nonexperimental research	Complete interests and pre-course knowledge surveys Quiz 1 in Blackboard
August 30	Variables in experimental and nonexperimental studies	Patten pp. 11-14 *pp. 11-14* *Class attendance optional*	Quiz 2 BB worksheet on paper topic *Homework from recorded lecture-5 pt.*
Sept 1	Research hypotheses	Patten pp.15-18 *pp.15-18* Recorded lecture on hypotheses	Quiz 3 Submit paper topic on BB by 11:00 p.m. *In class experiment on variables and hypotheses (paper airplanes)-10 pts.*
September 6	Operational Definitions	Patten pp. 17-18 *pp. 17-18* BB reading: "How to Read a Research Article" Recorded lecture: How to Read a Research Article Choose 1 of the articles in BB and complete the worksheet on the article before class	Quiz 4 *Homework answering questions about research article in BB -10 pts.*
September 8	Reviewing research -finding *good* articles	Patten pp. 31-35 *pp. 31-35*	Quiz 5 **Class meets in Clark Instructional Center, Watson library**
Sept 13	In class discussion of Autism's False Prophets	Autism's False Prophets pp. xi-82 "Facilitated Communication – what harm can it do" –on Blackboard	No quiz due today **In class discussion of Autism's False Prophets pages xi – p. 82. Complete Discussion Questions before class**
Sept 15	Writing literature reviews	Patten pp. 35-42 *pp. 35-42* Patten pp. 185-188 *pp. 175-178*	Quiz 6 *In class activity on organizing a literature review – 5 pts.*

		Organizing a literature review	
Sept 20	Survey Research	BB reading: Blessing (2013). Survey Research BB reading: Blood, et al., (2010) Written language disorders… Recorded lecture	Quiz 7 **Writing project part 1 due by midnight to SWoRD** *In-class activity, "The teacup Olympics" 5 pts.*
Sept 22	Qualitative Research	Patten pp. 19-22 *pp. 19-22* Quantitative vs. qualitative research; BB reading: Yorkston (2001). Communication in context	Quiz 8 Qualitative Research
Sept 27	Ethical considerations in research Peer reviewing	Patten pp. 25-26 *pp. 25-26* www.peerceptiv.com Go to help, then Be a good reviewer, also see the video on peer reviewing HSCL tutorial	Quiz 9 Ethics video shown in class

Sept 29	Sampling characteristics;
	Sampling demographics and sample size
		Patten pp. 55-64- sampling
		      pp. 45-54
		Patten pp. 65-68
		      pp. 55-58
			Quiz 10
			Undergraduate advising
			In-class sampling activity: the luck of the Irish- 5 pts.

October 4	Validity	Patten pp. 71-77 *pp. 61-67* BB reading: Lincoln et al., Social validity of a stuttering intervention Recorded lecture. *Class attendance is optional*	Quiz 11 **Peer Reviews of writing project part 1 due by midnight** *Homework: summary of Lincoln et al. article due by 11:00 am Oct 4 – 5 pts.*
October 6	Reliability	Patten pp. 83-90 *pp. 73-80* BB reading: Sigafoos, et al. 2003	Quiz 12 *In-class activity on reliability- 5 pts.*
October 13	AFP discussion Review for midterm	Autism's False Prophets pages 83-164	No quiz due today. **In class discussion of Autism's False Prophets pages 83-164**
October 18	In-class group assignment on conducting an experiment- part 1	Review notes and reading materials up through 10/18	**Back reviews due to Peerveptiv by midnight October 18** *In-class group experiment assignment part 1*
October 20	In-class group assignment on conducting an		*In-class group experiment assignment part 2 – 20 points for parts 1 and 2*

	experiment- part 2		
October 25	Single Subject Designs-1	BB reading: Cardon & Azuma (2011)	
October 27	Single subject designs-2	BB reading: Koegel & Koegel, (1986); Kern et al., (2005) Sample figure graphs	Quiz 13 *In-class post-test for single subject research designs – 10 pts.*
Nov 1	Group experimental designs; threats to internal and external validity	Patten pp. 99-104 pp. 89-94	Quiz 14 *In-class activity Finding Threats to validity – 5 pts.*
Nov 3	Revising your writing Understanding statistics & the null hypothesis Scales of measurement	Patten pp. 101-110	Quiz 15 *Homework: describe measures in SPLH that are 1)nominal 2) ordinal 3) interval and 4)ratio 5 pts.*
Nov 8	Chi Square tests; Shapes of distributions	Patten pp 115-122 *pp. 105-110*	Quiz 16 *** Writing assignment parts 1 & 2 due by midnight***
Nov 10	Autism False Prophets in class discussion	Autism's False Prophets pp. 130- 175	**In class discussion of Autism's False Prophets pp. 165-247**
Nov 15	Measures of association (Pearson r) Correlations	Patten pp. 133-135 *pp. 123-125* BB reading: Tomblin et al., 2003 BB recorded lecture	Quiz 17 *In class assessment of correlations – 5 pts.*
Nov 17	No class- ASHA convention		
Nov 22	t tests	Patten pp 135-136 *pp. 125-126* BB reading: Bastian et al., 2014	Quiz 18 *In class experiment-choc. Chips – 5 pts.* ***Reviews of Writing assignment parts 1 & 2 by midnight***
Nov 29	ANOVAs	Patten pp. 137-140 *pp. 127-130*	Quiz 19 *In-class experiment-gummy bears 5 pts.*

Dec 1	Practical significance and effect size Building an evidence base in SPLH	Patten pp. 141-150 *pp. 131-140* BB reading: Nippold BB reading by Meline & Paradiso (2003) BB reading by Sapir et al. (2007) BB recorded lecture	Quiz 20 and Quiz 21 ***Back reviews due by midnight*** *In-class project on evaluating assessments and treatments-part 1*
Dec 6	Meta analyses	Patten pp. 151-156 *pp. 141-146* BB: Sample group project Gillam, S. and Gillam, R. (2006). Making evidence-based decisions about child language intervention in schools. BB: recorded lecture	Quiz 22 & 23 *In-class group project on evaluating assessments and treatments-part 2*
Dec 8	Evaluating research in speech path and audiology/ Review for Final	Gillam, S. and Gillam, R. (2006). Making evidence-based decisions about child language intervention in schools.	*In-class group project on evaluating assessments and treatments- part 3, class presentations and 1 page info sheet due- 25 pts.* *** Revised Final project write up due turn in via blackboard by midnight**
Friday December 16 10:30-1:00 p.m.	Final Exam	Final Exam	Final Exam

Graded Assignments:

Quizzes. There will be 25 short quizzes available on Blackboard, approximately one per class meeting. The quizzes will be available and must be completed *before* the class meeting. For example, the quiz for August 25 needs to be completed prior to 11:00 on August 25.. This is to ensure that each student is familiar with the topics before class. In addition, quizzes will include material from the previous class, to ensure that topics are understood before moving on to another topic. The quizzes can be taken twice and the best score is entered. You will have up to 30 minutes to take each quiz. Quizzes will worth 10% of your final grade

In class assignments and homework: There will be assignments during most classes and occasional graded homework assignments. In-cass assignments must be completed during class time. Cumulatively these are worth 20% of your grade.

Final exam: The final will also be given in class. It will consist of problems and assess the cumulative information taught in this course. The final exam will be worth 10% your final grade.

Make up exams: A make-up exam will only be given if the student contacts the teacher prior to the exam. The student must provide proof (e.g., a doctor's note) stating that there was a medical emergency that prevented completing the exam on the assigned date.

Written project (3 parts):

1) Writing Assignment Part 1: Literature review—A brief review of literature relevant to your topic area. Double-spaced with 11 or 12-point font, and one inch margins at the top, bottom, left and right of the page. Review 4 - 6 articles (**note**: you will have to at least skim through many articles to find 4 - 6 articles that work for your topic). The goal is to integrate information from these 4 - 6 articles into a summary with one or two main points. Examples are provided in Appendix B of Patten, and on Blackboard. Additional examples and grading criteria will be provided in class. The last sentence or two of your literature review should describe a research question or hypothesis (Option A) or the proposed treatment trial (Option B) that logically flows from your review. References should be typed using APA style guide, available at http://www.writing.ku.edu/~writing/guides/apa.shtml. The suggested length for part 1 of the writing assignment is 3 - 4 double-spaced pages. Use 11 or 12 point font, and one inch margins at top, bottom, left and right.

You will submit your paper to the Peerceptiv website (more info to follow). **It is critical to submit papers on time**. Late papers will not be accepted or graded. All the papers will be peer-reviewed anonymously.

Peer reviews: Each student will review 3 papers from your fellow students. Your reviews will consist of numerical ratings, as well as written comments on what the strengths and weaknesses are for each paper, including how the author might improve his or her paper. You will be graded on the quality of your reviews in two ways. First, the consistency of the numerical ratings that you assign will be graded. For example, if you give ratings that are all too high or all too low, or if you don't seem to be able to tell the difference between good papers and poor papers, then you will get a low review grade. Second, you will be graded on how helpful your written comments are to the authors. This will be through a process of **back reviews.** You will each have a chance to tell your peer reviewers how helpful you found their reviews through the back review process. Reviews must be completed by the due date. There is a 1-day grace period for emergencies, but reviews submitted during the grace period receive a 5% reduction. Reviews will not be accepted after the grace period.

Your grade for the first part of the writing assignment is made up of the score you are given for the draft of the paper you write **plus** your reviewing grade **plus** your back reviews **minus** any points deducted for being late. **This combined grade is worth 15% your total grade in the course**.

2) Writing Assignment Part 2: **Literature review plus methods (participants, instrumentation, Procedure, reliability measurement plan, data analysis).** You will revise part 1 of your writing assignment based on peer reviewer's feedback and **add a Methods section** describing the participants, instrumentation, procedures and data analysis (design) to address the research question/treatment proposal that you created at the end of your literature review (writing assignment part 1). Sufficient detail should be provided that someone could implement the methods you describe. Your fellow students (peer reviewers) will be judging how well they could carry out the methods you describe. The suggested length for Part 2 is 2 - 4 double-spaced pages.

Peer reviews: You will review papers from 3 fellow students as you did for Part 1. The same grading criteria will be used in this round of peer reviews along with new criteria specific to the Methods section.

Your grade for the second part of the writing assignment is made up of the score you are given for the draft of the paper you write based on peer reviews **plus** your reviewing grade **plus** your back reviews **minus** any points deducted for being late. **This combined grade is worth 15% your total grade in the course.**

3) Revised Final Paper that contains both the literature review and the methods and is responsive to peer reviews. After receiving feedback from peer reviews you will have an opportunity to make additional revisions, and turn a final copy of your paper in to Dr. Brady via Blackboard. A grading rubric for the final paper is available on Blackboard. Dr. Brady's grade of **your final paper is worth 15% of your total grade in the course**.

A note about plagiarism: Plagiarism involves any copying of text from a source without proper citation. All papers will be checked for plagiarism using Safe Assign. If plagiarism is detected you will receive a score of 0 on the assignment and cited for academic misconduct according to the University's code of academic misconduct:
http://www.writing.ku.edu/instructors/guides/academic_misconduct.shtml

Class Discussion: Discussion guides will be provided to students before each discussion session of Autism's False Prophets. Participation points will be provided to students that complete these guides, bring them to class and participate in discussions. **5** points per session or **15** points total are available. **Discussion points are worth 15% final grade**.

Grading Summary:

Quizzes	10%
Final Exam	10%
Writing project part 1	15%
Writing project part 2	15%
Writing project part 3	15%
Class Discussion of Autism's False Prophets	15%
In-class graded assignments and homework	20%
Total	100%

A plus/minus grading system is used based on the % total points earned in the course. At the end of the course I will weight the points for quizzes, midterm, final, discussion and each part of the paper as described above and add these weighted scores. The following scale will be used to determine a final grade:

Letter grade percentage range:

Grade	Percentage Points
A	93.50 and above
A–	90.00–93.49
B+	86.50–89.99
B	83.50–86.49
B–	80.00–83.49
C+	76.50–79.99
C	73.50–76.49

C–	70.00–73.49
D+	66.50–69.99
D	63.50–66.49
D–	60.00–63.49
F	59.99 and below

How to calculate your grade at any point in the class: You can follow the instructions on this wiki to determine your current weighted grade, using the information provided in BB: http://www.wikihow.com/Calculate-Weighted-Average

Accommodations
"The Academic Achievement and Access Center (AAAC) coordinates academic accommodations and services for all eligible KU students with disabilities. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. They are located in 22 Strong Hall and can be reached at 785-864-4064 (V/TTY). Information about their services can be found at http://www.disability.ku.edu. Please contact me privately in regard to your needs in this course."

If a scheduled exam, lab exercise, or quiz is in conflict with a mandated religious observance, you must notify the instructor in writing (e-mail is acceptable) within one week of receiving this syllabus so that an alternative arrangement can be made in advance of the scheduled requirement.