

SPLH 660: Research methods in Speech-Language-Hearing

Fall 2012

Class Meetings: Tuesdays and Thursdays 11:00 to 12:15; Haworth 2046

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

Office hours: Tuesdays 1:00 and by appt. (T and Th best times). Dr. Brady's office is in 3008 Dole

Teaching Assistant: Yi-Chih Chan; ycchan@ku.edu

Office hour: Tuesdays 10:00 and by appt. Yi-Chih's office is 3005a Dole

Pre-/Co-requisites: none (but coursework in SPLH and basic statistics is helpful)

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?

Speech pathology and audiology are relatively new fields (much newer than psychology for example). You will come to learn that we are in dire need of more evidence to support the interventions that clinicians practice on a daily basis. Goals for this class include:

1. How to evaluate research, including:
 - a. identifying the parts of a research study
 - b. evaluating how well researchers planned and conducted the research
 - c. determining if the reported effects are significant?
 - d. determining if reported results are important (i.e., should they be used in clinical settings or to guide future research?)
2. How to read, summarize and describe research in a particular area.
3. How to plan a research study that will address a specific question or problem in communication disorders, including
 - a. formulating a specific testable hypothesis
 - b. designing a study to minimize threats to external and internal validity
 - c. describing methods in sufficient detail to facilitate replication
 - d. measuring reliability
 - e. communicating results in a clear concise manner

Course Materials:

Patten, M. (2009). *Understanding Research Methods*. Pycszak Publishing, Glendale, CA.

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, quizzes and additional readings and resources will be posted at the Blackboard site.
3. Writing assignments will be entered to the SWORD website:
<https://sites.google.com/site/swordlrdc/>

Further instruction on using SWORD will be forthcoming. A student manual for using SWoRD is available at the website, under How-to manuals. You will find this manual to be very helpful!

The course name in SWoRD is SPLH 660 Research Methods in Speech-language-Hearing Fall 12

The password that you will need for logging in is: SPLH660.

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.

Date	Topic	Readings	Assignment- note quizzes are to be completed before class
August 21	Course introduction	None	Complete interests survey
August 23	The Scientific method; importance of research	Patten pp. 1-10 BB reading by Silverman	Quiz 1 in Blackboard
August 28	Variables in experimental and nonexperimental studies	Patten pp. 11-14 How to Read a Research Article – on Blackboard	Quiz 2
August 30	Research hypotheses	15-16	Quiz 3
Sept 4	Operational Definitions How to read a research paper	17-18 Patten pp. 165-166 BB reading	Quiz 4
Sept 6	Quantitative vs. Qualitative research	19-22 “Facilitated Communication – what harm can it do” –on Blackboard	Quiz 5 In class discussion of Autism’s False Prophets pages xi – p. 60.

Sept 11	Surveys and Qualitative Research	Patten pp. 147-155 BB reading by Blessing	Quiz 6
Sept 13	Reviewing research -finding <i>good</i> articles	31-35 BB	Quiz 7
Sept 18	Writing literature reviews	37-42 185-188	Quiz 8 Writing project part 1 due by midnight
Sept 20	Ethical considerations	Pages 25-26; film; HSCL tutorial (http://www.rcr.ku.edu/~rcr/hsccl/tutorials.shtml)	Quiz 9
Sept 25	Sampling characteristics; Sampling demographics and sample size	45-52 53-58	Quiz 10
Sept 27	Validity	61-72	Quiz 11
Oct. 2	Reliability	73-80 plus BB reading	Quiz 12 Reviews of writing project part 1 due by 11:00 pm
Oct 4	Review for midterm and AFP discussion		n class discussion of Autism's False Prophets pages 61-129
Oct .11	Midterm exam		*In class midterm exam*
Oct. 16	Norm and criterion referenced tests and scales	81-82 and 85-86; Topics 34,35,36	Quiz 13 Back reviews due to SWORD by 11:00 pm
Oct. 18	Single Subject Designs-1	BB reading	Quiz 14
Oct 23	Single subject designs-2	BB reading	
Oct 25	Group experimental designs; threats to internal and external validity	89-94; 99-100	Quiz 15

Oct. 30	Understanding statistics & the null hypothesis Scales of measurement	103-106; 107-110	Quiz 16
Nov. 1	Chi Square tests; Shapes of distributions	111-114	Quiz 17 In class discussion of Autism's False Prophets pp. 130- 175
Nov. 6	Shapes of distributions; Measures of association (Pearson r)	115-122 123-124	Quiz 18 * Writing assignment parts 1 & 2 due by 11:00 p.m.*
Nov. 8	t tests	125-126	Quiz 19
Nov. 13	Anovas	127-130	Quiz 20
Nov. 15	More examples with t tests and ANOVAs		*Reviews of Writing assignment parts 1 & 2 due by 11:00 pm*
Nov. 20	Practical significance and effect size	131-140	Quiz 21 and Quiz 22 *Back reviews due by 11:00 pm
Nov 27	Building an evidence base in SPLH	BB reading by Meline & Paradiso (2003)	Quiz 23
Nov. 29	Meta analyses	141-146	Quiz 24 In class discussion of Autism's False Prophets pp. 176-247 * Revised Final project write up due - turn in via blackboard by midnight
Dec. 4	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. Available on BB	Quiz 25
Dec. 6	Catch up and review for final		
Monday Dec 10 10:30 a.m. to 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 23 needs to be completed prior to 11:00 on Aug 23. 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 an hour to take each quiz. Quizzes will worth 313 points- 12 % final grade

Midterm Exam: The midterm will be given in class. The midterm will test your ability to apply the material to actual research questions. Sample questions will be presented in class before the midterm. The questions will be primarily objective with some short answers. The midterm will be worth 14% your final grade

Final exam: The final will also be given in class. It will be similar to the midterm but will assess the cumulative information taught in this course. The final exam will be worth 17% 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 (a doctor's note) stating that there was a medical emergency that prevented completing the exam on the assigned date.

Written project (3 parts): During the first week of class you will complete a survey of your interests regarding age groups and types of communication disorders. I will read over your responses and then assign you to a particular area of emphasis within speech language pathology or audiology. Each of the following assignments will pertain to this area of interest. For example, if you are interested in interventions aimed at helping school-age children who stutter, you will focus each of these projects on school-age children who stutter. Each part of the paper will be worth 14% your final grade. .

1) Writing Assignment Part 1: Literature review--A brief review of literature relevant to your topic area. The review should be two pages maximum, double spaced with 11 or 12 point font and one inch margins at top, bottom, left and right. Review 4-6 articles. 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 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>. A suggested length for part 1 of the writing assignment is 3-4 double-spaced pages.

You will submit your paper to the SWORD 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 reviewed anonymously.

Peer reviews: Each student will review 5 papers from your fellow students. Your reviews will consist of numerical ratings of the papers and written comments on what the strengths and weaknesses are of the paper and how the author might improve their paper. You will be graded on the quality of your reviews in two ways. First, the consistency of your numerical grades that

you assign will be graded. For example, if you give grades 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 2 day grace period for emergencies, but reviews submitted during the grace period receive a 5 point 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 14% your total grade in the course.

2) Writing Assignment Part2: 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 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. Suggested length for Part 2 is 2-4 pages.

Peer reviews: You will review papers from the same 5 fellow students' that you reviewed for Part 1. The same grading criteria will be used in this round of peer reviews.

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 14% your total grade in the course.

3) Revised Final Paper that contains both the literature review and the methods and that 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. A grading rubric for the final paper is available on Blackboard. Dr. Brady's grade of your final paper is worth 14% 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. 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 participation: 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 20 points total are available. Discussion points are worth 15% final grade.

Extra Credit: There will be occasional opportunities to earn extra credit for in-class assignments. This is my way of making random attendance checks that translate into extra credit points. These opportunities will not be announced in advance.

Grades. 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:

<u>Grade</u>	<u>Percentage</u>	<u>Points</u>
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	

Accommodations

The staff of Services for Students with Disabilities (SSD), 135 Strong, 785-864-2620 (v/tty), coordinates accommodations and services for KU courses. If you have a disability for which you may request accommodation in KU classes and have not contacted them, please do so as soon as possible. Please also notify the instructor in writing (e-mail is acceptable) within one week of receiving this syllabus so that appropriate accommodations for this course can be discussed.

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