

Course Description and Philosophy

Office

Work Cell Office hours by
appointment

The course is online only from .
Though the course is online
only we will schedule optional
time to meet online.

Academic Vision of SPU

Seattle Pacific University seeks to
educate students to make a
difference in the world. Goals
include graduating
People of Competence,
People of Character
People of Wisdom
People of Grace.

School of Education Mission Statement

To prepare educators for
service and leadership
in schools and communities by
developing their professional
competence and character
within a framework of
Christian faith and values.

Graduate Student Goals

The School of Education seeks to
graduate educators who
demonstrate
Effective Leadership
Clear Communication
Analytical/Problem Solving Skills
Foundational Knowledge and
Skills
Positive Impact on Student
Learning
Professionalism

Welcome to EDU 6976 Interpreting and Applying Educational Research II. It may be helpful to begin this introduction by observing that educational research is one of the most important subject areas for educators (though all teachers feel this way about their subject). Nevertheless, the relevance of the topic is directly related to an increase in data collection and analysis, access to education research, policy that attempts to link research to accountability, and also a tone (somewhat diminished lately) of disparagement about educators in the U.S. (at least in my opinion). One result of these circumstances is ease in finding pundits and antagonists who cite research to influence the trajectory of education as a whole and also the specific practice of educators in schools or educational institutions. Reference to research may be done circumspectly and with good judgment or it may be manipulative and even subversive. Either way, educators need to comprehend education research, regardless of who they are hearing from and regardless of their role (instructional assistant, teacher, counselor, school psychologist, administrator, or superintendent).

Another result of these circumstances, immediately relatable to this class, is figuring out the right approach to teaching and learning educational research. Should it focus on concepts and critical analysis, or perhaps statistical calculations and statistical tests? One answer to this question is to teach and learn about education research by identifying the relevance of research, reviewing key concepts, recognizing common procedures applied in research, comprehending some basic and sophisticated models used for data analysis, and developing the ability to judge the quality of education research according to standards of practice. Moreover, and perhaps most important, we will come away with a set of skills useful for analyzing data (mostly quantitative but also some qualitative) that we can put to use where we work. In this class, we are going to address these topics, and I think we will achieve the specific course objectives, shown below, at a level of precision more than sufficient for comprehending or conducting education research and putting it to use for improving life in classrooms, schools, or any other educational environment where we may find ourselves.

As we begin class, please take a moment to read the remainder of this syllabus, noting especially the Course-at-a-Glance. Then, feel free to explore the Canvas site.

~ Dave

Objectives

The following objectives will guide our activities. Special emphasis has been given to aligning course objectives with evaluation criteria used in Washington State for educators and administrators, specifically *Exhibiting collaborative and collegial practices focused on improving instructional practice and student learning* and, *Creating a school culture that promotes the ongoing improvement of learning and teaching for students and staff*.

- * Describe a few reasons for acquiring additional knowledge and skill in relation to educational research. Recall some principles of research design, data collection, statistics, and statistical analyses.
- * Define principles of qualitative research. Describe qualitative methods, theoretical underpinnings, criteria for evaluating quality, and data analysis and presentation.
- * Recognize the normal distribution as the basis of descriptive statistics. Review characteristics and representations of a distribution such boxplots, outliers, histograms, etc.
- * Calculate key descriptive statistics and inferential statistics. Conceptualize how these statistics are applied in common statistical tests.
- * For the following statistical tests 1) independent samples t-test, 2) paired samples t-test, 3) ANOVA, 4) correlation, 5) regression, and 6) meta-analysis, be able to
 - Define the test and its key elements numerically and conceptually,
 - Analyze real-world data using the test and interpret results,
 - Apply the analysis and interpretation for making a decision to improve teaching and learning.
- * Describe a school-based scenario, initiative, or problem, where skills learned in class could be applied to provide insight through data analysis

Required Materials

Readings and other materials located on Canvas under Modules, also Bhattacharjee, A. (2012). *Social science research: Principles, methods, and practices* (2nd ed.). Available on Canvas as a PDF and Amazon for about \$12.

Microsoft Excel and SPSS - these programs are available to SPU students at <https://wiki.spu.edu/display/HKB/Student+Software+Installation>

Grading

Course grades are calculated from scores in three categories:

1) Quizzes	25%	} See Course-at-a-Glance for due dates.
2) Interactive Journal	40%	
3) ERSP OR SAP (not both)	35%	

Grade information, including feedback, will be shown in Canvas under the Grades link. Please familiarize yourself with the grade interface in Canvas. A goal of the course is to have assignments graded, with feedback, in about five business days after submission.

Letter grade percentage equivalents:

A = 96-100%	B+ = 87-90%	C+ = 77-80%	D+ = 67-70%
A- = 90-96%	B = 83-87%	C = 73-77%	D = 63-67%
	B- = 80-83%	C- = 70-73%	D- = 60-63%
E = 60% and below			

Assignments

Generally, assignments are due according to the date shown on the Course Schedule, by the end of the day (midnight), at the end of the week. Assignments are submitted to Canvas using the Submit Assignment > Browse button in the assignment field unless otherwise noted. Detailed assignment descriptions, submission guidelines, and performance criteria are shown in corresponding links on Canvas. Frequently submitting late assignments will result in a reduced final grade.

Quizzes. There will be a quiz for each module. Quiz questions will be aligned with module content. Quiz questions will provide an opportunity for some self-assessment of progress toward understanding terms, concepts, and procedures. Quizzes may be taken while referencing module readings and other materials.

Interactive Journal entries are for engaging course content through various writing activities and other exercises. Activities and exercises involve elaborating and clarifying, making connections, building on views, etc. Each entry is shared with a group for reference and feedback.

Students will choose either Evaluation of Research on Standards of Practice (ERSP) **OR** Statistical Analysis Portfolio (SAP), not both.

Evaluation of Research on Standards of Practice (ERSP) is a writing project that involves analysis of a research article according to standards of practice written by the American Education Research Association (AERA). The standards of practice provide a framework of expectations about what a report of empirical research (qualitative or quantitative) should address. One article is analyzed with respect to the standards of practice in areas such as problem formation, clear logic of inquiry, data collection, evidence that serves as warrant, and measurement, among others. Students may find an article on their own or use one from an existing list provided through this class for analysis.

Statistical Analysis Portfolio (SAP) involves analyzing data to run statistical tests and interpret results. A data set is provided. Statistical tests include independent samples t-test, paired samples t-tests, ANOVA, and simple regression. The portfolio will include explanation of results, SPSS tables and charts, and other responses. Portfolio items will be similar to activities practiced through Interactive Journal entries.

Course-at-a-Glance

Timeline	Topic	Assignments
Module 1	Review of Research Design	Module 1 and 2 Interactive Journal Module 1 Quiz
Module 2	Review of Qualitative and Quantitative Data Analysis	Module 1 and 2 Interactive Journal Module 2 Quiz
Module 3	Analyzing Data with Graphs	Module 3 and 4 Interactive Journal Module 3 Quiz
Module 4	Analyzing Data with Descriptive Statistics	Module 3 and 4 Interactive Journal Module 4 Quiz
Module 5	Comparing Two Groups Independent Samples t-Test	Module 5 and 7 Interactive Journal Module 5 Quiz
Module 6	Comparing One Group with Two	Draft ERSP OR Practice SAP

	Measures Paired Samples t-Test	Module 6 Quiz
Module 7	Comparing More than Two Groups ANOVA	Module 5 and 7 Interactive Journal Module 7 Quiz
Module 8	Analyzing Relationships: Correlation	Module 8 and 9 Interactive Journal Module 8 Quiz
Module 9	Making Predictions: Regression	Module 8 and 9 Interactive Journal Module 9 Quiz
Module 10	Summarizing Quantitative Research: Meta-Analysis	ERSP OR SAP due Module 10 Quiz

Additional Resources

American Psychological Association (2019). *Publication manual of the American Psychological Association* (7th ed.). Washington, DC: Author.

Bhattacharjee, A. (2012). *Social science research: Principles, Methods, and Practices* (2nd ed.).

BBC More or Less: Behind the Stats. (2018). Retrieved from <https://www.bbc.co.uk/programmes/p02nrss1/episodes/downloads?page=2>

Computer-Assisted Statistics Teaching CAST. (2017). Retrieved from <https://cast.idems.international/> (CAST is an Open Source project and can be used without charge under a GNU General Public Licence).

Easton, V. J., & McColl, J. H. (1997). *Statistics glossary*. Retrieved from <http://www.stats.gla.ac.uk/steps/glossary/index.html>

Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research* (7th ed.). New York, NY: Pearson.

Gapminder. (n.d.). Retrieved from <https://www.gapminder.org/about-gapminder/>

PSPP (2019). General Public License software, replacement for the proprietary program SPSS. Retrieved from <https://www.gnu.org/software/pspp/>

Tse-chi Hsu, (2005). Research methods and data analysis procedures used by educational researchers. *International Journal of Research & Method in Education*, (28)2, 109-133.

Krashen, S. D. (2015). A short, narrow and biased introduction to statistics. Retrieved from <http://www.sdkrashen.com>

McMillan, J. H. (2012). *Educational research: Fundamentals for the consumer* (6th ed.). Boston, MA: Pearson

Newby, P. (2014). *Research methods for education* (2nd ed.). London: Routledge.

NIST/SEMATECH e-Handbook of Statistical Methods. (2012). Retrieved from <https://www.itl.nist.gov/div898/handbook/index.htm>

StatSoft. (2018). *Electronic statistics textbook*. Retrieved from <http://www.statsoft.com/Textbook>

SticiGui Multivariate Statistics: Concepts, Models, and Applications. (2017). Retrieved from <https://www.stat.berkeley.edu/users/stark/SticiGui/index.htm>

The New Statistics <https://thenewstatistics.com/itns/>

Vogt, P. W., & Johnson, R. B. (2016). *The dictionary of statistics and methodology* (5th ed.). Los Angeles, CA: Sage.

Policy Notes

Academic integrity. The SPU Catalog describes the University's commitment to academic integrity, which is breached by academic dishonesty of various kinds. Among these is turning in another's work as your own and committing plagiarism, which is the copying of portions of another's words from a published or electronic source without acknowledgement of that source. The penalty for a breach of academic integrity is a failing grade for the work in question on the first offense and a failing grade for the course as a whole with repeated offenses.

Attendance. One-way learning occurs in community, specifically through participation in discussions, group work, and other activities. Students are expected to interact with instructor and peers in online activities according to the Course Content and Schedule and directions located in Canvas.

Assignment submission. Assignments are submitted through Canvas unless otherwise note on the Syllabus. Some assignments are submitted as Microsoft Office attachments (e.g. doc., .docx, .pptx) or Portable Document Format (.pdf) or website URLs (<https://docs.google.com/document/>).

Assignment Accommodation for a Religious Holiday. Students who would like to request an accommodation for a religious holiday (e.g. request that an exam scheduled for a religious holiday be rescheduled) should make a written request within the first two weeks of the course pursuant to SPU's Academic Schedule Religious Accommodation Policy. The policy is posted in the Graduate Student Handbook at <https://spu.edu/catalog/graduate/20190/student-life>.

Commitment. Part of the mission for faculty at Seattle Pacific University is to be faithful to the Christian message and the good news of Jesus Christ. Please feel free to join in conversations about spirituality and teaching as the instructor integrates faith along with the content of this course.

Communications. The course website will serve as the primary method for class communication. Progressing through the course at the correct pace requires frequent (daily, or every other day) interface with the course website (Canvas).

Contact and monitoring. The instructors will monitor student progress in the course across the week, through Canvas. Email is the best method if you need to contact instructors with questions. Along with the course website, please also check your university email each day.

Course evaluation. Please participate in an online evaluation of this course and its instructor in a thoughtful and constructive manner. The evaluation data is used to make improvements in the course, and your feedback is considered when selecting reading materials, designing teaching methods, and preparing assignments. Courses are evaluated using the Smart Evaluations in Canvas. All answers are completely confidential. Your name is not stored with your responses. Instructors do not see any results until final grades are submitted to the University.

Course website privacy. Only students and faculty enrolled in the course have access to course materials, such as discussion boards, etc.

Disability statement. In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, students with specific disabilities that qualify that student for academic accommodations should contact Disability Support Services (DSS) in the Center for Learning. DSS in turn will

send a Disability Verification Letter to the course instructor indicating what accommodations have been approved.

Diversity. The School of Education embraces and seeks the richness that diversity brings to our learning community. We acknowledge that all people bear the image of God regardless of race, gender, socioeconomic status, age, religion, political history, (dis)ability, sexual orientation, language and linguistic inheritance, country of origin, past participation outside of the culture of power. Our focus is to offer and enhance opportunities to all, including those who have traditionally been underserved by and underrepresented in the institutions of our society. Our commitment is to increase the diversity of our faculty, staff, and students and to foster a hospitable climate for a diverse community reconciling all people.

Due dates. Due dates are fixed; exceptions will be made for illness or family emergencies. Consistently submitting late work will have a negative effect on your final grade.

Emergency response. Information at <https://wiki.spu.edu/display/SOEGRAD/Emergency+Response+Information>

Flexibility. The key outcomes of this course are reflected in the University Handbook. In addition, this syllabus is a robust schedule of the content for each session. However, changes to the schedule, readings, and assignments may be made over the quarter to promote learning.

Interactions. Please proofread your writing. Discussion entries, reflections, and other public postings should promote constructive communication and a supportive class environment.

Incomplete coursework. Students may request an incomplete grade if they are unable to complete all course requirements by the end of the quarter given unexpected personal need and you have already completed at least 50% of the course requirements and assignments. Students must initiate this request for an incomplete grade before the first day of the 6th week of the quarter. Instructors are under no obligation to grant an incomplete and can require verification of the rationale behind the request (e.g. medical documentation). If an incomplete is offered, then a completion plan will also be written. If a student does not meet the completion plan by the end of finals week the following quarter, a grade will be calculated based upon the work completed. Once this grade has been submitted it cannot be changed, except by petition as outlined in the *University Catalog* under *Academic*.

Reference Desk. Seattle Pacific University's Front Desk, on the Library's main level, provides quick on-demand student support for software use, project advice, and technology questions. Contact the Front Desk at reference@spu.edu.

Workload. There will be approximately 1.5 hours of work per week for each credit of instruction, e.g. 1 credit = 1.5 hours to complete assignments, readings, etc.