Gerald and Deanne Gitner
Excellence in Teaching Award

Nomination Of:

Natalie Bolton
Assistant Professor
Educational Psychology, Research & Evaluation
462 Marillac Hall

Nominated By:
Faculty of the Educational Psychology, Research & Evaluation Department
405 Marillac Hall
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April 3rd, 2012

Review Committee
Gerald and Deanne Gitner
Excellence in Teaching Award
University of Missouri—St. Louis

Dear Review Committee,

We are the Department of Educational Psychology, Research and Evaluation, and we would all like to acknowledge the exceptional teaching accomplishments of our colleague, Dr. Natalie Bolton, as we nominate her for the Gerald and Deanne Gitner Excellence in Teaching Award. Dr. Bolton's reputation as an excellent teacher in the important areas of statistics, research design, and program evaluation is no secret in our department. All of the faculty in Educational Psychology, Research and Evaluation teach students that have taken Dr. Bolton's courses and all of these students speak so highly of Natalie's ability to make challenging material accessible and understandable. We are all highly appreciative of Dr. Bolton's excellence in teaching these challenging courses.

Thank you for your consideration of this nomination.

Sincerely,

Michael W. Knorr, Ph.D.
Associate Professor
Division Nomination Committee

Wolfgang Althof, Ph.D.
Teresa M. Fischer Professor of Citizenship Education

Lisa M. Dorner, Ph.D.
Assistant Professor

Clark J. Hickman, Ed.D.
Associate Research Professor

Matthew L. Keefe, Ph.D.
Associate Professor & Division Chair
Division Nomination Committee

Marvin W. Berkowitz, Ph.D.
Sanford N. McDonnell Professor of Character Education

Donald A. Gouwens, Psy.D.
Clinical Associate Professor

Margaret W. Cohen
Associate Professor
Division Nomination Committee

Cody S. Ding, Ph.D.
Associate Professor

Celeste L. Hazler
Division Assistant
April 5th, 2012

Dear Senate Faculty Teaching and Service Awards Committee,

In my role as chair of the Department of Educational Psychology, Research and Evaluation I have had the great pleasure to observe and evaluate Dr. Natalie Bolton’s exceptional teaching skills. In only her second year at UMSL, Dr. Bolton has clearly earned a reputation for being an excellent instructor with a stellar record of student evaluations. Indeed, as I complete my eleventh year as chair of the Ed Psych department at UMSL, I should say Dr. Bolton’s course evaluations are most consistently impressive that I have evaluated. Other Ed Psych department faculty colleagues who have seen Dr. Bolton’s numbers and read her students’ comments have referred to them with modifiers such as ‘breathtaking’, ‘fabulous’ and ‘off the charts’. Indeed, Dr. Bolton’s excellence as an instructor is no secret in our department. Not only do all of us teach students who have also taken Dr. Bolton’s courses but, as demonstrated in the many comments and letters of support presented below, our students are not shy to express their appreciation of Dr. Bolton’s teaching methods and talents. It is for this reason that her Educational Psychology faculty colleagues insisted on collectively nominating her for this prestigious award.

As noted in her Philosophy of Teaching Statement a good measure of Dr. Bolton’s success as an instructor is due to the work she does ‘up front’ in designing her courses. Specifically, Dr. Bolton applies her extensive knowledge of formal and informal assessment to support student learning, or as Dr. Bahr notes in his fine letter of support, she “expertly models the use of assessment to improve teaching”. As I have observed first hand, Dr. Bolton has several different instructional strategies to accomplish this goal. In one instance she turned her classroom into a research symposium replete with program evaluation projects presented in a poster board format (which she designed and created by modifying samples of prior student work). Groups of students travelled through the room evaluating and discussing the projects using a rubric or scoring guide that Dr. Bolton also designed. These and similar types of formative assessment opportunities, or what Dr. Bolton calls “celebrations of learning”, provide students with a clear understanding of what they need to know to be successful when creating their own projects. Clearly her students enjoy her classes, her assessment-focused teaching style, and her ability to foster an environment conducive to successful student learning.

“Dr. Bolton is the most organized, prepared, and effective teacher I have had in Graduate School.”

“I have been a student over 30 years and never had a teacher as amazing as Dr. Bolton. She has given better formative assessments engaging activities and challenging assessments than any other teacher I have had. Her assignments are challenging but she structures the support so effectively that true learning happens.
These impressive accomplishments are underscored considering Dr. Bolton teaches methods, evaluation, and statistical courses which, in my experience, tend to receive lower student evaluation scores. Dr. Bolton is especially gifted at providing her students the confidence they can acquire and use their newly acquired research and statistical knowledge, including understanding why that knowledge is important. Again, the most persuasive evidence and support for this claim come from the students themselves.

“She demystifies content that has the capacity to be daunting and stressful. She relates content to real world experience and application.”

“The class was a great introduction to the field. Dr. Bolton gave us a set of tools that can be applied to any program. Great course. I got a Program Evaluation job at least partly because of this course.”

“Dr. Bolton was awesome! I do not like stats and she put me at ease and instilled confidence by relating their value to real life and my research.”

“For me research as a class topic was very intimidating. Her feedback and supportive approach helped build my confidence in the subject.”

Clearly Dr. Bolton has a great gift for teaching research design, evaluation, and statistics, as noted in Dr. Wolfgang Althof’s fine letter of support. As is the case with great teachers, her pedagogical knowledge is informed by her deep knowledge of the content in her area. As Dr. Bolton’s vita attests, she has considerable experience and expertise in the area of curricular design, alignment, and assessment. This expertise is also apparent in Dr. Bolton’s course syllabi, as Dr. Bahr also notes in his letter of support. I have had an opportunity to become better acquainted with Dr. Bolton’s expertise in this area as she and I recently submitted a proposal to the NSF aimed at addressing a critical need in professional ethics education. The project is entitled: *Bridging the Gap: Aligning Assessment, Instruction, and Curricular Design in Professional Ethics Education*. Dr. Bolton crafted the research plan including the deployment of formative and summative assessments for the project.

Finally, Dr. Bolton is already a very active mentor to many of the COE’s doctoral students. It is clear from student ratings of her research and statistical courses, student comments and letters of support (see letters and 3 page summary), but also from first hand knowledge, that Dr. Bolton is indeed an excellent instructor who already has earned a reputation as a superb doctoral advisor with a commitment to high academic standards.

I will conclude only by saying that if Dr. Bolton has a single defining characteristic, it would be her uncompromising commitment to student learning; i.e., to enable all students to be successful. It is a great pleasure to nominate Dr. Natalie Bolton for the 2012 Gitner Excellence in Teaching Award.

Sincerely,

Matthew W. Keefer, Chair
Department of Educational Psychology, Research and Evaluation
March 26, 2012

Dear Senate Faculty Teaching and Service Awards Committee,

In preparing to write this letter, I asked Natalie Bolton to describe her approach to teaching and assessment and she said, “I teach everything by situating the learning in real contexts, focusing student work in problems of practice, and viewing every assessment as a celebration of learning.” The ability to do the three things that Dr. Bolton describes here and do them well is not easy. They take a lot of work, time, and thought; these are the things, however, above all else, that describe why Dr. Bolton should receive the Gitner Teaching Award.

Dr. Bolton primarily teaches statistics and program evaluation courses in the College of Education (COE). These are courses that often come with trepidation from students. Situating the learning in contexts that students can understand and relate to is critical to the understanding and mastery of the concepts. Students come from many backgrounds. They are administrators and educators in P-12 schools, non-profits, businesses, government agencies, and informal education organizations (i.e. museums, zoos, gardens). The ability that Dr. Bolton has to apply and provide exemplars in contexts that are tailored to all students in the class is remarkable. This type of differentiation promotes academic excellence and engages students in ways that are authentic and meaningful for them.

One student noted, “This course offered me a new perspective in both areas of research. The models and designs presented, evaluated and accomplished throughout the course created valuable learning experiences.”

Given the high degree of accountability today in education, understanding statistics and evaluation as a problem of practice is also critical. Educators use data and data analysis in so many ways that understanding it at a high level is imperative. Dr. Bolton has developed courses for graduate students that serve as professional learning communities in ways that focus on outcomes and genuine problems of practice. Students learn from examples, but develop mastery when they work on problems from their own practice bringing data from the classroom and other settings for analysis, reflection, and ultimately, strategies for the workplace.
Another student wrote, “Dr. Bolton is a breath of fresh-air at UMSL. She is student-centered, well prepared, dedicated, and extremely fair. She gives valuable and honest feedback and is extremely encouraging. Dr. Bolton is very approachable and responds quickly to email. This course was well thought out and planned. She was very clear about expectations and learning objectives and was willing to help us meet them. She uses a variety of teaching techniques and she makes class wonderful. She is a Wonderful Addition to UMSL. You should do whatever you can do to retain her.”

Dr. Bolton also brings a fresh perspective to the practice of assessment. She views them as “celebrations of learning”. This notion sends a message to students that assessment is about ensuring that everyone is learning and learning is something to be celebrated. She re-teaches concepts that students do not understand using different examples or different techniques. In this way, she holds high standards for promoting academic excellence and students are empowered to self-assess, reflect on their learning, and develop mastery through the use of rubrics and other tools that demonstrate developmental progress over time.

In review of her syllabi, comments from students, and in conversation, Dr. Bolton knows how to model best practices in teaching. She facilitates learning in so many ways. She collaborates with colleagues to ensure students are receiving content that is new and takes them to a different level than they have experienced before. Her innovative teaching methods employ technology and introduce students to new software for data analysis and decision-making. Dr. Bolton is extremely committed to improving teaching and learning. She clearly understands the strategies that affect student learning and knows that her work impacts many, younger, students in educational settings throughout the community.

More broadly, Dr. Bolton serves on the Graduate Education Council in the College of Education. Her work in teaching, learning, and formative assessment is highly influential as she collaborates with colleagues to develop new courses, programs, and degrees. She is also instrumental in working on the College’s ongoing continuous improvement system that will impact all COE students. I haven’t been at UMSL long, but it has been my pleasure to watch Dr. Bolton engage in the college, community, and surrounding region in excellent practice. She is a wonderful asset to the COE, UMSL, and the community.

Sincerely,

Carole G. Basile
Dean and Professor
College of Education
I love to teach and my ultimate goal is to positively impact student learning. I strive for success with my teaching whether I am designing curriculum or planning a program, being innovative in my course design, providing quality instruction and assessment that engages students in learning, reflecting on my practice, or having a positive impact on practice of the profession. Prior to teaching at the university level I was a middle school social studies educator. From those experiences I learned it was essential to be innovative in my practice, to have a student-centered assessment focus that showed me what students were learning and to what degree, and to engage students using a variety of instructional strategies aligned with assessment goals. I apply those same principles when teaching adults whether it is a graduate level course in applied statistics, research design, or program evaluation, providing professional development on assessment or social studies, or designing a curriculum or course.

Successful teaching requires reflection and planning prior to a course being taught or a curriculum, program, or professional development being designed. As an instructor, I must first decide on the outcomes (what students should know and do) before I decide the best way to measure those outcomes. When I first arrived at UMSL I met with faculty that teach the research methods courses to assist me in determining course outcomes for the courses I teach. I did this to ensure course content was not duplicated; courses aligned to one another; and content spiraled between courses. Based on those conversations I designed three courses that I have now taught multiple times: Advanced Research Design, Statistical Analysis for Education Research, and Program Evaluation.

My teaching reflects an area in which I conduct research, implementing formative assessment strategies. When deciding on appropriate measures to use, I consider how
assessments can build on one another serving as formative checks (monitor what students are learning and to what degree as learning is taking place) prior to a summative assessment (assessment given after learning takes place). My course assessments are called “Celebrations of Learning” to assist in building a positive and non-threatening classroom environment and to focus the course instruction on the learners. Course assessments are aligned to learning targets, diverse, clearly outlined and communicated to students on the course syllabus with scoring criteria, and ask students to apply content to real-world contexts aligned with their interest so they can view the tasks as purposeful. An example of a Celebration of Learning is having students complete a lab report in an applied statistics course so they connect the statistical methods with a research question of their choice, literature, analysis, and interpretation. Knowing how to calculate the statistical method by hand or using a statistical computer based program is only part of a meaningful learning task.

Being able to practice what I research and discuss the assessment strategies and research with my students and colleagues is also very meaningful teaching tool that I use. I currently serve as the Principal Investigator and Project Director for a federal Teaching American History grant sub-contract with a school district that requires teachers to implement formative assessment strategies with their instruction. I also recently applied with colleagues as a Co-Principal Investigator for a federal grant and a National Science Foundation grant in which formative assessment strategies will be studied.

Using formative assessment strategies with my instruction also ensures that high quality learning takes place in the courses I teach, the professional developments I provide, and the research I conduct. Implementing formative assessment strategies means that I clearly outline what students should know and be able to do with the content (i.e. learning targets) prior to instruction. I clearly communicate the learning targets to my students orally and visually in student friendly language with models of completed work at different performance levels multiple times throughout a lesson and make sure my instructional activities and formative and
summative assessments are aligned with the learning targets. Students are provided descriptive feedback on the quality of their work aligned with the learning targets in a timely manner. Additionally, I allow students to self-assess and peer assess continuously throughout a course regarding how they are mastering the learning targets, and allow them to reflect and revise their work with the goal of mastering the learning targets by the end of a course.

Providing students feedback is essential to good instruction and is a research-based formative assessment strategy. I regularly provide feedback to students on all tasks through My Gateway, via email using track changes on documents when appropriate, and during course instruction. All assignments I give use criteria that is established and discussed as a class. Students and I use the criteria to provide feedback specifically on the intended learning. Additionally, formative feedback is given within three performance levels: on target, somewhat on target, or try again with all criteria to assist students in knowing prior to a summative assessment where they are in reaching a learning target. For example, in the Research Design course I teach, students submit a research proposal as a summative assessment at the end of the course as a Celebration of Learning. Students are encouraged to submit their proposal in three scaffolded phases. When they submit their final product they have a very good idea of how they have performed on the required criteria prior to their final submission. I also believe that self-assessment and peer feedback are essential to learning. In my courses, 10% of the grade is peer feedback. Additionally, I collect and review student feedback at mid-term and end of course to make course revisions to assignments, assessments, and course structure and organization and I solicit student feedback on assessments if unclear, should be modified, or changed.

In addition to using feedback with my instruction, I also use a variety of instructional strategies to promote student engagement with content. Students will often participate in individual, small group, and whole group activities during a lesson. I am often the facilitator of the learning and not directing the class solely through lecture. Students are provided digital
course support materials prior to class via My Gateway and can access materials throughout the semester. I also believe embedding technology with my instruction is critical and engaging my students with technology is an important skill to attain to stay current with the field. My current courses are face-to-face but integrate My Gateway to share content and include regular opportunities for online discussions (threaded discussions, wiki, blog, etc.). I was a recent recipient of an UMSL Innovation in Teaching grant and was awarded an iPad for the purpose of embedding engaging ways to use technology (iPad) with my teaching. I also participate in the iPad teaching Circle professional development to enhance and share iPad knowledge with colleagues related to its use with teaching and research.

In addition to using technology, I stay current with my content knowledge in research methods and social studies/civic education by participating in professional development activities and by applying new learning to my instruction. I was recently accepted to participate in a highly competitive professional development during the summer of 2012. It is hosted by the American Educational Research Association. I will learn how to use large-scale data sets supported by National Center for Education Statistics, National Science Foundation, and other federal agencies and embed those data sets into my course instruction. Being able to provide students access to and the knowledge of how to use these data sets will provide them knowledge of the field at the national level. I was also an invited participant with Pearson/Assessment Training Institute for training on the following assessment materials during the summer and fall of 2011 and serve as consultant for the materials: Classroom Assessment for Student Learning, Seven Strategies of Assessment for Learning, and Standards-Based Grading Practices. I embed these materials into my instruction, grant work, research, and service that I provide to local school districts, as a guest speaker for UMSL courses, and as a member of the Graduate Education Committee within the college of education when discussing unit and program assessments and research methods graduate course assessments.
Staying current and refining my social studies/civics knowledge assists me as I develop curriculum or model ways to embed formative assessment strategies with social studies/civics content, another area in which I conduct research and deliver professional development. I was recently invited to be a participant with Liberty Fund to serve as social studies educational scholar on, "The Contest for Liberty in the Ratification Debate." Fifteen scholars from diverse backgrounds are asked to meet and discuss the Federalist and Anti-Federalist papers. I also model what I teach by writing lesson plans and designing curriculum that embed formative assessment strategies and effective curriculum design. Examples of lesson plans can be accessed on the Ashbrook Center’s website at Ashland University: http://teachingamericanhistory.org/lessonplans/.

I also recently co-authored a character education curriculum with the Muhammad Ali Center in Louisville, KY. It embeds formative assessment strategies and effective curriculum design; I serve as a content evaluator as the curriculum is piloted. I share my content evaluation experiences as an example with my students in the program evaluation course I currently teach. I also publish research and teaching experiences related to social studies/civics content and assessment with organizations in which I am a member (i.e. American Educational Research Association member of Special Interest Groups for Social Studies Education and Research on Evaluation and the National Council for the Social Studies member of the College and University Faculty Assembly and International Assembly).
ED REM 6730
Educational Program Evaluation

Course: ED REM 6730 Educational Program Evaluation
SPRING SEMESTER 2012 (Mon, 5:30-8:10 p.m., 19 Seton Center)

Instructor: Natalie Bolton, Ph.D., Assistant Professor

Office: 462 Marillac Hall

Office hours: Mondays, 3:00 – 5:00 p.m. or by appointment

Telephone: 314-516-5787

E-Mail: boltonn@umsl.edu

Course description:

Prerequisites: ED REM 6750 or consent of instructor.

Description: A course on the principles and procedures for assessing the quality and effectiveness of programs, projects and materials related to planning interventions and system changes in educational settings.

Course Objectives, Goals or Learning Outcomes:
Upon course completion students will be able to:

• Define terms associated with program evaluation.

• Know and demonstrate understanding of program evaluation concepts, problems and/or issues through leading and participating in class discussions (online and face to face).

• Use appropriate research methods in the design of program evaluations.

• Critically review evaluation plans/reports and proposals.

• Develop an evaluation proposal.

Materials Required:

Required:


Semester Schedule of Topics (subject to modification):

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<th>Topic</th>
<th>Reading/Activity/Assignment Due</th>
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<tr>
<td>1/16</td>
<td>NO CLASS – Martin Luther King Day</td>
<td>Chapter 1 Respond to Chapter 1 Threaded Discussion</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Comments</td>
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| 1/23 | Course Overview and Introduction  
What is program evaluation?  
Tailoring Evaluations | Chapter 2  
Respond to Chapter 2 Threaded Discussion by 1/23 |
| 1/30 | Identifying Issues and Formulating Evaluation Questions | Chapter 3  
Respond to Chapter 3 Threaded Discussion by 1/30 |
| 2/6  | Assessing the Need for A Program | Chapter 4  
Respond to Chapter 4 Threaded Discussion by 2/6 |
| 2/13 | Expressing and Assessing Program Theory  
Logic Models | Chapter 5  
Respond to Chapter 5 Threaded Discussion by 2/13 |
| 2/20 | Assessing and Monitoring Program Process | Chapter 6  
Respond to Chapter 6 Threaded Discussion by 2/20 |
| 2/27 | Measuring and Monitoring Program Outcomes  
Reliable and Valid Measures | Chapter 7  
Respond to Chapter 7 Threaded Discussion by 2/27 |
| 3/5  | Assessing Program Impact: Randomized Field Experiments  
(Experimental Impact Assessments)  
Validity of Experimental Designs | Chapter 8  
Respond to Chapter 8 Threaded Discussion by 3/5 |
| 3/12 | Assessing Program Impact: Quasi-Experimental Impact Assessments  
Poster Presentation Critique of Evaluation Plan (1/2 present, ½ critique) | Chapter 9  
Respond to Chapter 9 Threaded Discussion by 3/12  
Poster Presentation/Critique |
| 3/19 | Detecting, Interpreting, and Analyzing Program Effects  
Poster Session Critique of Evaluation Plan (1/2 present, ½ critique) | Chapter 10  
Respond to Chapter 10 Threaded Discussion by 3/19  
Poster Presentation/Critique |
| 3/26 | NO CLASS- Spring Break | |
| 4/2  | Measuring Efficiency | Chapter 11  
Respond to Chapter 11 Threaded Discussion by 4/2 |
| 4/16 | Social Context of Evaluation  
Evaluation Proposal Pres. (1/2 present, ½ critique) | Chapter 12  
Respond to Chapter 12 Threaded Discussion by 4/16 |
Instructional Strategies: The course will be taught primarily through a combination of lecture and large and small group discussion of concepts, problems, and issues. It is required that students have the requisite background knowledge in assessment, measurement and statistics, and come to class having completed all assigned readings and prepared to actively participate in discussion of relevant topics and issues. During the course, each student will develop an evaluation proposal on a topic of interest, and much of the work in class will involve discussion of issues and collaborative problem-solving related to developing an appropriate evaluation proposal and methods for answering the research questions addressed in these proposals.

Evaluation Criteria and Grading: Evaluation will be based on attendance/participation in class, one exam (celebration of learning), leading a class discussion, weekly participation in an online threaded discussion, critique of an existing evaluation, peer feedback, and designing an evaluation proposal on a topic of interest.

• Development of a sound evaluation proposal will be the focus of much of the work in class, and the proposal will count for 30% of the final grade. Models of evaluation proposal will be shown and discussed during class prior to evaluation proposal completion. See scoring guide at end of syllabus.

• The exam (celebration of learning) will count for 15% of the final grade. The celebration of learning will cover all program evaluation vocabulary covered in text to ensure student can read and understand and use program evaluation vocabulary successfully in the future. The format will be matching and will be divided by chapter.

• The critique of an existing evaluation plan will count for 15% of the final grade. Models of critique will be shown and discussed during class prior to critique completion. See scoring guide at end of syllabus.

• Leading a class discussion will count for 10% of the final grade. See scoring guide at end of syllabus.

• Weekly participation in the online threaded discussion will count for 10% of the final grade.

• Peer feedback will count for 10% of the final grade.

• Participation will count for 10% of the final grade.

All written assignments must be typewritten/printed and must be written in the style of the American Psychological Association.

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<th>Date</th>
<th>Event Description</th>
<th>Event Description</th>
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<tr>
<td>4/23</td>
<td>Evaluation Proposal Pres. (1/2 present, ½ critique)</td>
<td>Evaluation Presentation and Critique</td>
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<tr>
<td>4/30</td>
<td>Evaluation Vocabulary Celebration of Learning</td>
<td>Evaluation Vocabulary Celebration of Learning</td>
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<tr>
<td>5/7</td>
<td>NO FORMAL CLASS</td>
<td>FINALIZE GRADES</td>
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**Expectations and Policies:**

**Attendance:**
- Class attendance is required and is essential to success in the course. I will send around an attendance sheet each day at the beginning of class. You are responsible for making sure you sign the attendance sheet each day. Although attendance is not graded, your participation in class is expected. It is your responsibility to clarify missed assignments with classmates.
- If you expect to miss class to participate in a university-sanctioned activity, be sure to submit a Student Absence Form or Athlete Travel Letter early in the semester so that we can discuss your responsibilities and make plans to fulfill the requirements of the classes you will miss.

**Readings:**
- You are expected to have completed all assigned readings before class. Class work will assume understanding of the readings and will complement and supplement this information, but generally will not review the material in the readings.

**Assignments:**
- It is expected that all assignments will be completed on time. Late assignments will not be accepted.
- Delayed grades will not be assigned except under extraordinary circumstances. Please speak with me about any problems you encounter.

**Expectations for submitting required work:**
- Submitted work will be typed, double-spaced and submitted in print, electronically, etc.
- Written work must adhere to the APA style.
- Written work will be evaluated for composition and grammar. Be sure to run your essays through Turnitin and, revise when necessary, before submitting them.
- When students’ work conveys that they require additional help in this course, students will be referred to the Writing Lab, Math Lab, Supplemental Instruction tutors, the Center for Student Success. I also plan to use the Academic Alert system when I believe this academic support will help you succeed this semester.

**Academic Honesty:**
- Plagiarism is the use of another person’s words or ideas without crediting that person. Plagiarism and cheating will not be tolerated and may lead to failure on an assignment, in the class, and dismissal from the University. View this campus policy here: http://www.umsl.edu/services/academic/assets/PDFs/Dishonesty-Rev-9-08.pdf
- You are responsible for being attentive to and observant of campus policies about academic honesty as stated in the University’s Student Conduct Code: http://www.umsl.edu/~webdev/bulletin/student-conduct.html
- To avoid accusations of academic dishonesty, please submit all written work to Turnitin System before finalizing what you submit for evaluation. Check information about the Writing Lab @UMSL that is linked to MyGateway Home.

**Civility:**
- Turn off beepers and cell phones during class. Adherence to the Student Conduct Code is expected.
• My commitment is to create a climate for learning characterized by intellectual diversity and a respect for each other and the contributions each person makes to class. I ask that you make a similar commitment.

• I am committed to insuring a positive learning environment by respecting that University policy: http://www.umsl.edu/studentlife/dsa/student_planner/policies/positive.html

Access, Disability, Communication:

• Students requiring special accommodations should meet with me during office hours so that we can discuss how to meet your needs this semester. Prior to our meeting be sure you have met with someone in Disability Access Services (MSC 144).

• If you have difficulty communicating in English with the instructor of this course, contact Associate Professor Matt Keefer, the chairperson of the Division of Education Psychology, Research and Evaluation in Marillac Hall, room 402 or call (314) 516-5783.

Campus Safety

• All members of the UMSL community are invited to register their cell and office phone numbers to receive notification of any pending danger on campus. Find instructions here: http://safety.umsl.edu/police/services/3n.html

• In the event of an emergency on campus, call Campus Police at 314.516.5155. A call to 911 on a cell phone only, will go to the St. Louis County Police. The St. Louis County Police will notify UMSL Police, but this may cause a delay in response. Campus Police know the best way to escort emergency vehicles to locations on campus.

• If you do not feel comfortable walking to a parking lot, MetroLink stop, or anywhere else on campus, contact the Campus Police for an escort: 314.516.5155.

Online Threaded Discussion Questions

<table>
<thead>
<tr>
<th>Date Completed</th>
<th>Threaded Discussion Question</th>
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<tr>
<td>1/23/12</td>
<td>After reading chapter 1 (p. 23 – 26), explain why evaluation has not been considered scientific research. Do you agree or disagree? Respond to the question using at least 50 words and respond to at least one student using at least 25 words. Your response to a classmate can agree or disagree with his/her response or raise questions about his/her response.</td>
</tr>
<tr>
<td>1/23/12</td>
<td>After reading chapter 2 (p. 34- 38 Purposes of Evaluation), describe a topic that is of interest to you to evaluate. Explain which of the purposes (program improvement, accountability, knowledge generation, hidden agendas) best describes why you would like to evaluate the selected topic. Respond to the question using at least 50 words and respond to at least one student using at least 25 words. Your response to a classmate can agree or disagree with his/her response or raise questions about his/her response.</td>
</tr>
</tbody>
</table>
| 1/30/12        | After reading chapter 3: Review p. 70, Exhibit 3-A, What it Means to Evaluate Something. Apply Scriven's basic logic of the term to evaluate to a topic you think you would like to evaluate. Explain how you will meet the four steps of general logic outlined by Scriven.  

Note: Your response should be at least 50 words in length and respond to at least one student using at least 25 words providing feedback to their response regarding
<table>
<thead>
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<th>Date</th>
<th>Subject</th>
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<tr>
<td>2/6/12</td>
<td>After reading chapter 4: Using Exhibit 4-A, <em>Steps in Analyzing Need</em>, briefly explain your plan to address the 5 steps to analyze a need with an evaluation topic of your choice. Note: Respond to the prompt using at least 50 words and respond to at least one student using at least 25 words providing feedback to their response regarding strengths and questions of clarity and/or suggestions.</td>
</tr>
<tr>
<td>2/13/12</td>
<td>After reading chapter 5: Create a logic model (you may want to use Word or power point and post as an attachment) explaining your evaluation plan. Be sure to include inputs, activities, outputs and outcomes. See p. 147 Exhibit 5-G for a model. Respond to at least one student using at least 25 words providing feedback to their logic model regarding strengths and questions of clarity and/or suggestions.</td>
</tr>
<tr>
<td>2/20/12</td>
<td>After reading chapter 6, describe how you plan on assessing the service utilization and program organization (see p.171) of your evaluation topic? Note: Your response should be at least 50 words and you should respond to at least one student using at least 25 words providing feedback to their response regarding strengths and questions of clarity and/or suggestions.</td>
</tr>
<tr>
<td>2/27/12</td>
<td>After reading chapter 7: 1. What measure are you using in your evaluation plan? 2. For each measure, how will you address reliability and validity (p. 218 - 220)? Note: Your response should be at least 50 words and you should respond to at least one student using at least 25 words providing feedback to their response regarding strengths and questions of clarity and/or suggestions.</td>
</tr>
<tr>
<td>3/5/12</td>
<td>After reading chapter 8: Explain the strengths and weaknesses of randomized field experiments. Note: Your response should be at least 50 words and you should respond to at least one student using at least 25 words providing feedback to their response either agreeing or disagreeing or asking questions of clarity.</td>
</tr>
<tr>
<td>3/12/12</td>
<td>After reading chapter 9: If you were going to do a quasi-experimental impact assessment for your evaluation proposal how would you go about constructing a matching control group? Note: Your response should be at least 50 words and you should respond to at least one student using at least 25 words providing feedback to their response either agreeing or disagreeing or asking questions of clarity.</td>
</tr>
<tr>
<td>3/19/12</td>
<td>After reading chapter 10: Review Exhibit 10-E, <em>Some Ways to Describe Statistical Effect Sizes in Practical Terms</em>, on pages 318 - 319. Considering your evaluation proposal, identify and explain which approach(es) you think would best help explain the magnitude of the program effects and their practical significance.</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4/2/12</td>
<td>After reading chapter 11: Using Exhibit 11-G, <em>Components of Cost-Benefit Analyses From Different Perspectives for a Hypothetical Employment Training Program</em>, on page 351, identify at least one stakeholder group related to your evaluation proposal and list benefits and costs to the identified group in relation to the program. Explain if you think the benefits outweigh the costs (consider long-term effects of the program)?</td>
</tr>
<tr>
<td>4/16/12</td>
<td>After reading chapter 12: Review Exhibit 12-E, <em>The American Evaluation Association's Guiding Principles for Evaluators</em> (pgs. 406-410), and explain which principle you think is most important to follow.</td>
</tr>
</tbody>
</table>

**Program Evaluation Peer Feedback Leading Chapter Topic Discussion**
*Completed by all students and instructor for each student chapter led presentation and averaged to get final score.*

1. **Assigned chapter topic presented clearly**

On a scale of 1 (not clear) to 5 (very clear), evaluate the chapter topic presentation. Provide a brief explanation of your rating.

Rating:

Explanation (include praise and suggestions):

2. **Student Engagement**
On a scale of 1 (not engaged) to 5 (very engaged), evaluate the student engagement during the presentation. Provide a brief explanation of your rating.

Rating:

Explanation (include praise and suggestions):

**Evaluation Critique**

Present evaluation critique of a published evaluation of your choice using the poster session format outlined below.

Description of poster session format: The following parts should be summarized and included on no larger than three standard sized poster boards. All text should be typed.

**Total Points: 50**  
**Oral Presentation: (10 points aligned with each part)**

**Part 1 (10 points):**

1. Context of evaluation? APA citation of article/evaluation that you are critiquing. Background info of site and evaluation topic.
2. Purpose(s) of the evaluation? (needs assessment, design and theory, process, impact, efficiency)
3. Who are the stakeholders involved in the evaluation?
4. Who are the evaluators? State the relationship with the participants/stakeholders if possible.

**Part 2 (20 points):**

1. *What are the goals of the evaluation?*
2. *What are the objectives/inputs of the evaluation?*
3. *Who are the participants involved in the evaluation?*
4. *What are the key evaluation questions?*
5. *What methods were used to measure each evaluation question? (include reliability and validity of measures if possible)*
6. *How is each measure analyzed?*
7. *Create a logic model to accompany evaluation you critiqued (Note: Any item with an * should be included in your logic model)

Part 3 (5 points):

1. What were the results?
2. How were the results communicated and to whom?

Part 4 (5 points):

1. Effectiveness of evaluation to the field rating (1 = Not Effective and 5 = Very Effective)
2. Explanation of effectiveness rating.

Research Evaluation Proposal

Develop a written proposal to share and present to stakeholders for a 15-minute presentation. Make sure you allocate time for questions. You will be assessed on both your written proposal and your oral presentation.

I. Describe the need for the evaluation: (3-5 sentences)
   • Should include target audience for evaluation and why there is a need for the evaluation. (You will make this up but can base it off of a real-world setting)
   • 3 points

II. Describe the theory and/or research that support the evaluation plan: (5-6 sentences)
   • For example if you are doing an evaluation on schools implementing character education you should define what character education is and describe any literature that supports ways to implement character education.
     o Make sure you include APA citations for anything you cite in a bibliography at the end of the written proposal.
   • 5 points

III. Define the goal(s), objective(s), activities(s)/output(s), and outcome(s) to meet goal(s) of the evaluation by creating a logic model.
   • 10 points

IV. Explain how each outcome will be measured, how you will address reliability and validity for each measure, when and how you will collect the data, and how you will analyze the data. (You may choose to present some or all of this information as a table)

Remember- outcomes should be written as to what you hope the performance will be based off of the measure.
For example:  Outcome: 80% of participants will increase content knowledge
Measure: Pre-post content assessment
   Reliability check-
   Validity check-
   When data collected-
   How data collected-
   Analysis-

• 10 points

V. Provide a description of how you will share the findings, the format the findings and who will share them with.
• 5 points

VI. Optional (tell us how much you think your evaluation will cost and how you arrived at your figure)
ED REM 6735  
Statistical Analysis for Education Research

**Course:** ED REM 6735 (G01): Statistical Analyses for Education Research, Spring Semester 2012  
(Tuesday, 5:30-8:10 p.m., SCC 103)

**Instructor:** Natalie Bolton, Ph.D., Assistant Professor

**Office:** 462 Marillac Hall

**Office hours:** Tuesdays, 3:00 – 5:00 p.m. or by appointment

**Telephone:** 314-516-5787

**E-Mail:** boltonn@umsl.edu

**Course description:**

*Prerequisites:* Graduate Standing

This course provides students with a limited background in statistics with a fundamental and intermediate understanding of quantitative methods and their relationship to social science research, especially in education. In addition to basic statistical concepts such as means and standard deviations, this course will elaborate on the basic hypothesis testing concepts and explore in detail statistical techniques, including descriptive statistics, contingency tables, measures of association, correlations, sampling distributions, normal curve, probability, tests of significance and t-tests. Students will conduct lab data analysis based on the topics covered in the class and be acquainted with how to create specific research questions and conduct basic statistical analysis.

**Course Objectives, Goals or Learning Outcomes:**

Upon course completion students will be able to:

- Describe, analyze and interpret descriptive and inferential statistics.
- Calculate and select measures of central tendency (mean, median and mode).
- Explain how variability is a descriptive tool and calculate and compare measures of variability (range, standard deviation, and variance).
- Compute and interpret correlation coefficients and describe other correlations.
- Define and apply basic measurement scales (nominal, ordinal, interval, ratio).
- Compute and interpret various types of reliability and validity coefficients.
- Define and compare samples and populations.
- Define, create, explain and evaluate null and research hypotheses.
- Describe the importance of probability to understanding statistics.
- Describe the characteristics of the normal curve.
- Compute and interpret z scores.
- Describe the concept and importance of significance and the importance of and difference between Type I and Type II errors.
- Explain when to use, calculate and interpret z test and t tests for independent and dependent means.
- Test and interpret the correlation coefficient.
- Compute and interpret the nonparametric test, chi-square, and describe other nonparametric statistics and when and how they should be used.
- Conduct lab data analyses using SPSS.
• Generate research questions, select appropriate statistical test(s) and conduct basic statistical analyses.

Materials Required and Recommended:

Required:


Recommended:


Semester Schedule of Topics (subject to modification):

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading/Activity/Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/17</td>
<td>Course Overview and Introduction</td>
<td>Salkind: Chapter 1 and SPSS Introduction</td>
</tr>
<tr>
<td>1/24</td>
<td>Descriptive Statistics and Intro to SPSS and Lab Projects</td>
<td>Salkind: Chapter 2 and Appendix A</td>
</tr>
<tr>
<td>1/31</td>
<td>Variability and Illustrating Data</td>
<td>Salkind: Chapter 3 and Chapter 4</td>
</tr>
<tr>
<td>2/7</td>
<td>NO CLASS- No Formal Class Meeting</td>
<td>Work on Lab Project Literature Review</td>
</tr>
<tr>
<td>2/14</td>
<td>Computing Correlation Coefficients</td>
<td>Salkind: Chapter 5</td>
</tr>
<tr>
<td>2/21</td>
<td>Reliability and Validity</td>
<td>Salkind: Chapter 6</td>
</tr>
<tr>
<td>2/28</td>
<td>Review</td>
<td>First Celebration of Learning</td>
</tr>
<tr>
<td>3/06</td>
<td>Sampling and Hypothesis Testing</td>
<td>Salkind: Chapter 7</td>
</tr>
<tr>
<td>3/13</td>
<td>Normality and Probability</td>
<td>Lab Project #1 Due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salkind: Chapter 8</td>
</tr>
<tr>
<td>3/20</td>
<td>Significance and Significance Testing</td>
<td>Salkind: Chapter 9 and Chapter 10</td>
</tr>
<tr>
<td>3/27</td>
<td>NO CLASS- Spring Break</td>
<td>NO CLASS- Spring Break</td>
</tr>
<tr>
<td>4/3</td>
<td>Tests Between the Means of Different Groups</td>
<td>Salkind: Chapter 11</td>
</tr>
<tr>
<td>4/10</td>
<td>Tests Between the Means of Related Groups</td>
<td>Salkind: Chapter 12</td>
</tr>
<tr>
<td>4/17</td>
<td>Testing the Correlation Coefficient</td>
<td>Salkind: Chapter 15</td>
</tr>
<tr>
<td>4/24</td>
<td>Chi Square and Nonparametric Tests</td>
<td>Lab Project #2 Due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salkind: Chapter 17</td>
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<tr>
<td>5/1</td>
<td>Review</td>
<td>Second Celebration of Learning</td>
</tr>
<tr>
<td>5/8</td>
<td>NO CLASS</td>
<td>NO CLASS- finalize grades</td>
</tr>
</tbody>
</table>
**Instructional Strategies:** The course will be taught primarily through a combination of lecture and large and small group discussion of concepts, problems, and issues. It is required that students come to class having completed all assigned readings and prepared to actively participate in discussion of relevant topics and issues. During the course, each student will develop a complete two lab projects relevant to his/her professional practice, and much of the work in class will involve discussion of issues and collaborative problem-solving related to quantitative methods and analysis addressed in class and through assigned readings. Students will be provided scoring guides/rubrics prior to completing lab reports and models of lab reports will be provided to students aligned with the rubrics at different performance levels to assist students in completing the tasks. Student will be provided a study guide (party planner) for the celebrations of learning (exams) and will be able to use a comfort card (4X 6) note card with any notes to assist students as they complete the celebrations of learning.

**Evaluation Criteria and Grading:** Course evaluation will be based on participation in class, two exams (celebrations of learning), peer feedback and two lab projects. Applying and analyzing introductory statistics commonly used for education research will be the focus of much of the work in class, and the two lab projects will each count for 25% of the final grade. The exams will each count for 20% of the final grade. Peer feedback and participation will count for 10% of the final grade. All written assignments must be typewritten/printed. The lab projects must be written in the style of the American Psychological Association.

**Grading**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>93-100%</td>
<td>A</td>
</tr>
<tr>
<td>90-92%</td>
<td>A-</td>
</tr>
<tr>
<td>88-89%</td>
<td>B+</td>
</tr>
<tr>
<td>83-87%</td>
<td>B</td>
</tr>
<tr>
<td>80-82%</td>
<td>B-</td>
</tr>
<tr>
<td>78-79%</td>
<td>C+</td>
</tr>
<tr>
<td>73-77%</td>
<td>C</td>
</tr>
<tr>
<td>70-72%</td>
<td>C-</td>
</tr>
<tr>
<td>&lt; 70%</td>
<td>F</td>
</tr>
</tbody>
</table>

**Expectations and Policies:**

**Attendance:**

- Class attendance is expected and is essential to success in the course. It is your responsibility to clarify missed assignments with classmates.
- Your success in this course is important to me. When I believe that the programs offered at the Center for Student Success (CSS) will help you academically, I will send a referral via the campus Academic Alert System. The CSS offers assistance tailored to specific instructional needs. Learn about the Academic Alert system in the online Student Planner, [http://www.umsl.edu/studentlife/dsa/student_planner/stuservices/css.html](http://www.umsl.edu/studentlife/dsa/student_planner/stuservices/css.html)
- If you expect to miss class to participate in a university-sanctioned activity, be sure to submit a Student Absence Form or Athlete Travel Letter early in the semester so that we can discuss your responsibilities and make plans to fulfill the requirements of the classes you will miss.

**Readings:**
• You are expected to have completed all assigned readings before class. Class work will assume understanding of the readings and will complement and supplement this information, but generally will not review the material in the readings.

**Assignments:**

• It is expected that all assignments will be completed on time. Late assignments will not be accepted.
• Delayed grades will not be assigned except under extraordinary circumstances. Please speak with me about any problems you encounter.

**Expectations for submitting required work:**

• Submitted work will be typed, double-spaced and submitted in print, electronically, etc.
• Written work must adhere to the APA style.
• Written work will be evaluated for composition and grammar. Be sure to run your essays through Turnitin and, revise when necessary, before submitting them.
• When students’ work conveys that they require additional help in this course, students will be referred to the Writing Lab, Math Lab, Supplemental Instruction tutors, the Center for Student Success. I also plan to use the Academic Alert system when I believe this academic support will help you succeed this semester.

**Academic Honesty:**

• Plagiarism is the use of another person’s words or ideas without crediting that person. Plagiarism and cheating will not be tolerated and may lead to failure on an assignment, in the class, and dismissal from the University. View this campus policy here: http://www.umsl.edu/services/academic/assets/PDFs/Dishonesty-Rev-9-08.pdf
• You are responsible for being attentive to and observant of campus policies about academic honesty as stated in the University’s Student Conduct Code: http://www.umsl.edu/~webdev/bulletin/student-conduct.html
• To avoid accusations of academic dishonesty, please submit all written work to the Turnitin System before finalizing what you submit for evaluation. Check information about the Writing Lab @UMSL that is linked to MyGateway Home.

**Civility:**

• Turn off beepers and cell phones during class. Adherence to the Student Conduct Code is expected.
• My commitment is to create a climate for learning characterized by intellectual diversity and a respect for each other and the contributions each person makes to class. I ask that you make a similar commitment.
• I am committed to insuring a positive learning environment by respecting that University policy: http://www.umsl.edu/studentlife/dsa/student_planner/policies/positive.html

**Access, Disability, Communication:**

• Students requiring special accommodations should meet with me during office hours so that we can discuss how to meet your needs this semester. Prior to our meeting be sure you have met with someone in Disability Access Services (MSC 144).
• If you have difficulty communicating in English with the instructor of this course, contact Associate Professor Matt Keefer, the chairperson of the Division of Education Psychology, Research and Evaluation in Marillac Hall, room 402 or call (314) 516-5783.

**Campus Safety**
• All members of the UMSL community are invited to register their cell and office phone numbers to receive notification of any pending danger on campus. Find instructions here: http://safety.umsl.edu/police/services/3n.html

• In the event of an emergency on campus, call Campus Police at 314.516.5155. A call to 911 on a cell phone only, will go to the St. Louis County Police. The St. Louis County Police will notify UMSL Police, but this may cause a delay in response. Campus Police know the best way to escort emergency vehicles to locations on campus.

• If you do not feel comfortable walking to a parking lot, MetroLink stop, or anywhere else on campus, contact the Campus Police for an escort: 314.516.5155.

Lab Project I and II: Mock Research Study and Analysis

1. PURPOSE OF STUDY
   A. (One sentence only) The purpose of this study is to ________

   B. What study or literature review is your study most directly based on? (Give citation.)

   C. How does your study build on previous research? (No more than 3 sentences.)

   D. How will your study contribute to knowledge about education? (No more than 3 sentences.)

2. RESEARCH QUESTIONS/HYPOTHESES
   A. List your research questions/hypotheses.

   B. Does your study relate to a particular theoretical framework? If it does, describe the framework, and indicate how your research questions/hypotheses relate to it.

3. RESEARCH DESIGN
   A. Describe the research design that you selected for your study: (i.e., descriptive (frequency, mean, and standard deviation), z-test, causal-comparative (independent or dependent t-test), correlational, non-parametric (chi-square)).

   B. What are the threats to the internal validity of your research design? What will you do to minimize or avoid these threats?

   C. What are the limitations to the generalizability (i.e., external validity) of the findings that will result from your research design? What will you do to maximize the generalizability of your findings?

4. SAMPLING
   A. Describe the characteristics of the population that you will study.

   B. Identify your sampling and explain why you selected it.

   C. Indicate the sampling unit (e.g., individual students or a class of students).
D. Indicate the size of your sample, and explain why that sample size is sufficient.

E. Indicate whether the sample will be formed into subgroups, and if so, describe the characteristics of the subgroups.

5. VARIABLES
A. List the variables that you will study. For each variable, indicate whether it is an independent variable, a dependent variable, or neither. Also indicate the level of measurement data (nominal, ordinal, interval, ratio).

6. METHODS OF DATA COLLECTION
A. List the measures that you will select or develop for your study.

B. Indicate the variables that each measure will assess. For each measure, indicate which types of validity and reliability are relevant and how you will check them.

7. DATA and DATA ANALYSIS PROCEDURES
A. Run your data based on your mock research study.

B. Describe the statistics you use to analyze your data and write up your results, use tables if appropriate.
   Be sure to include:
   measures of central tendency
   measures of variability

Scoring Guide Lab Project I and II:
Mock Research Study and Analysis

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description of Criteria</th>
<th>Performance Level (On Target, Almost There, Try Again)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of Study (20 pts.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explains purpose of study in one sentence. (5)</td>
<td>On Target (17 – 20 pts.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explains what study or literature review is your study most directly based on with citation. (5)</td>
<td>Almost There (14 – 16 pts.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explains how study builds on previous research within 3 sentences. (5)</td>
<td>Try Again (0 – 13 pts.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explains how study will contribute to knowledge about education within 3 sentences. (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Questions/ Hypotheses/ Objectives (10 pts.)</td>
<td>Lists research questions/hypotheses/objectives. (5)</td>
<td>On Target (9 – 10 pts.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explains how study relates to a particular theoretical framework, if</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Research Design (20 pts.)

Describes the research design that you selected for your study: (i.e., descriptive (frequency, mean, and standard deviation), z-test, causal-comparative (independent or dependent t-test), correlational, non-parametric (chi-square)). (2)

- **Almost There**: (7 – 8 pts.)
- **Try Again**: (0 – 6 pts.)

Explain the threats to the internal validity of your research design. Explain how you will minimize or avoid these threats. (9)

- **On Target**: (17 – 20 pts.)
- **Almost There**: (14 – 16 pts.)
- **Try Again**: (0 – 13 pts.)

Explains the limitations to the generalizability (i.e., external validity) of the findings that will result from your research design. Explains how you will you maximize the generalizability of your findings. (9)

### Sampling (10 pts.)

Describes the characteristics of the population that you will study. (2)

- **On Target**: (9 – 10 pts.)
- **Almost There**: (7 – 8 pts.)
- **Try Again**: (0 – 6 pts.)

Identifies your sample and explains why you selected it. (2)

Indicates the sampling unit (e.g., individual students or a class of students). (2)

Indicates the size of your sample, and explains why that sample size is sufficient. (2)

Indicates whether the sample will be formed into subgroups, and if so, describes the characteristics of the subgroups. (2)

### Variables (10 pts.)

Lists the variables that you will study. For each variable, indicates whether it is an independent variable, a dependent variable, or neither. (5)

- **On Target**: (9 – 10 pts.)
- **Almost There**: (7 – 8 pts.)
- **Try Again**: (0 – 6 pts.)

Also indicates the level of measurement data for each variable. (5)

### Methods of Data Collection (10 pts.)

Lists the measures that you will select or develop for your study. (2)

Indicates the variables that each... (2)

- **On Target**: (9 – 10 pts.)
<table>
<thead>
<tr>
<th>Measure will assess. For each measure, indicate which types of validity and reliability are relevant and how you will check them. (8)</th>
<th>Almost There (7 – 8 pts.)</th>
<th>Try Again (0 – 6 pts.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data and Data Analysis Procedures (20 pts.)</td>
<td>Describes the statistics used to analyze your data and writes up your results, using tables if appropriate. Description includes measures of central tendency and measures of variability. (15) Discusses implications of findings. (5)</td>
<td>On Target (17 – 20 pts.)</td>
</tr>
</tbody>
</table>