

EDLDRS 741: Research Methods in Educational Leadership II
University of Massachusetts Boston
Department of Leadership in Education
College of Education and Human Development
Spring 2026

Instructor	Meagan S. Richard, Ph.D.
Email	meagan.richard@umb.edu
Class Day/Time	Tuesdays from 4:30–7:15pm
Meeting Location	Wheatley, First floor, Room 75A (W01-75A; Dean's Conference Room)
Course Google Drive	https://drive.google.com/drive/folders/1PfDlweO5-pkYxw1Z6joqSwb-SlgExOtQ?usp=sharing
Zoom Link	https://umassboston.zoom.us/j/91234567890
Office Location	Wheatley Hall 01-77F
Office Hours	By appointment, please email me
Credit Hours	3 credit hours

“Contrary to popular belief, and the assertions of many quantitative researchers, numbers are neither objective nor color-blind.” (Gilbourn et al., 2017)

Course Information and Policies

Course Description

This course introduces educational leaders and aspiring leaders to quantitative research methods and statistical techniques commonly used in educational and social science research, while intentionally challenging traditional assumptions about what quantitative work is and how it is used. Quantitative methods have long been positioned as objective, neutral tools for understanding educational systems, yet they are deeply shaped by historical, political, and social contexts. As a result, quantitative research has often been used to justify inequitable policies, deficit narratives, and technocratic decision-making. Yet, when designed, interpreted, and mobilized through a critical lens, quantitative methods hold significant potential to illuminate structural inequities, challenge dominant assumptions, and inform more socially-just educational practice.

Grounded in critical quantitative literacy, this course emphasizes that working with data is a form of leadership practice that carries power and consequence. Students will learn to critically interpret existing quantitative research as well as to design, analyze, and interpret their own quantitative studies through a critical lens. The course is designed specifically for current educators and aspiring educational leaders who may engage quantitative methods in multiple ways: first, as practitioner-scholars preparing for dissertation research, and second, as practitioners who must interpret research to make decisions in their schools and other educational organizations. Students will be able to draw on course learnings in both their dissertation research and professional practice, using quantitative approaches to study and respond to justice-oriented problems in their own educational settings.

Throughout the semester, the course blends foundational statistical concepts with critical perspectives on quantitative inquiry. Students will engage with core quantitative techniques alongside examinations of the historical roots of quantitative research, critical and equity-oriented frameworks, and real-world examples of how data shape educational narratives and outcomes. Hands-on work with statistical software, analysis of peer-reviewed research, and structured reflection will build students' technical competence and critical judgment. In the final session, students will consider how quantitative methods can be used to shape school improvement efforts in ways that centers justice and equity.

Course Objectives

Through participation in this course, students will be able to:

- Formulate clear, researchable quantitative questions aligned to educational problems of practice.
- Identify appropriate research designs to investigate those questions.
- Understand and interpret quantitative research.

- Describe and apply key statistical concepts, including distributions, central tendency, variability, standard scores, and probability.
- Conduct group comparisons using t-tests, ANOVA, and chi-square tests.
- Examine relationships and predictions using correlation, simple regression, and multiple regression.
- Use Stata to manage, analyze, and visualize quantitative data.
- Apply quantitative reasoning to questions of equity, justice, and educational improvement.
- Communicate quantitative findings to stakeholders in ways that minimize harm and support justice-oriented decision-making.

About the Instructor

As you may know from taking the qualitative research course with me, my research over the past several years has tended to be more qualitative in nature. So why am I teaching a quantitative research class? Well, I have a diverse background in quantitative and mixed method research (in fact, when I started my Ph.D. program, I wanted to focus on quantitative approaches!). Two of my degrees—M.S. in Applied Sociology (Texas State University) and M.S.Ed. in Measurement, Evaluation, Statistics, and Assessment (University of Illinois Chicago)—centered methodological training in quantitative methods, such as multiple regression techniques, MANOVA/ANCOVA, HLM, and the R statistical software package (in addition to IBM SPSS). I also hold practical experience engaging with quantitative methods. Prior to beginning my Ph.D. program in 2017, I worked as an educational evaluator in Austin, TX. Within this role, I designed and carried out various quantitative evaluation studies, including quasi-experimental studies using propensity score matching techniques, large-scale survey research, and statistical examinations of national and state-level datasets. I also learned the Stata statistical package during my time in this role (and have loved it ever since!). My convergent mixed-method dissertation completed in 2023 merged a quantitative survey of school leaders across seven districts with in-depth interviews of a subset of leaders across these districts. And most recently, in 2025–26, I am engaged in two mixed-method studies. The first study features a large, national survey of faculty members in educational leadership certification/licensure programs to learn more about the asynchronous turn in these programs, and follow-up interviews to better understand faculty member experiences related to asynchronous teaching. The other study is examining the educational leadership faculty job market; the quantitative portion includes both descriptive and inferential analyses of aspects of these jobs, how equity is taken up within these job descriptions, and how state-level policy influences the extent to which equity is taken up, if at all. Finally, I have previously designed and taught a doctoral-level course that was meant to develop aspiring educational leaders' capacity to use statistical analyses to solve equity-centered problems of practice within schools and districts. With all this said, I feel excited at the opportunity to draw upon these experiences, and to learn even more from our materials and from your knowledge, throughout this semester!

Required Materials

- Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.
 - Note: Feel free to purchase used. There several editions of this book and they all have essentially the same information. I recommend Edition 4 or later just to keep the content fairly fresh.
- 6-month Stata/BE student license purchased from Stata.com (\$48; see Software below for more details)
 - <https://www.stata.com/order/new/edu/profplus/student-pricing/>

Recommended Additional Materials

Statistics:

- Ravid, R. (2020). *Practical statistics for educators (6th ed.)*. Rowman & Littlefield.
- Carroll, S. R., & Carroll, D. J. (2002). *Statistics made simple for school leaders: Data-driven decision making*. Bloomsbury Publishing PLC.
- Diez, D. M., Cetinkaya-Rundel, M., & Barr, C. (2012). *OpenIntro statistics* (Vol. 4). OpenIntro.
 - Free, open-source book you can download here: <https://www.openintro.org/book/os/>
 - This is a good resource for you to have
- Freedman, D., Pisani, R., & Purves, R. (2007). *Statistics* (4th ed.). W. W. Norton).

Stata:

- Acock, A. (2014). *A gentle introduction to Stata* (4th ed.). Stata Press.
- Imai, K., & Bougher, L. D. (2021). *Quantitative social science: An introduction in Stata*. Princeton University Press.
- Long, J. (2009). *The workflow of data analysis using Stata*. Stata Press.
- Mitchell, M. (2010). *Data management using Stata: A practical handbook*. Stata Press.

Research Design:

- Young, M. D., Diem, S., & Diem, K. (2023). *Handbook of Critical Education Research*. Taylor and Francis.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cozby, P. C. (2007). *Methods in behavioral research* (9th ed.). New York: McGraw-Hill.
- Leedy, P., & Ormond, J. (2020). *Practical research: Planning and Design* (12th ed.). Pearson.

Other:

- Castillo, W., & Strunk, K. K. (2025). *How to QuantCrit: Applying critical race theory to quantitative data in education*. Taylor & Francis.
- Gordon, N., & Conaway, C. (2020). *Common-sense evidence: The education Leader's guide to using data and research*. Harvard Education Press.
- Garcia, N. M., López, N., & Vélez, V. N. (Eds.). (2023). *QuantCrit: An antiracist quantitative approach to educational inquiry*. Taylor & Francis.
- Safir, S., & Dugan, J. (2021). *Street data: A next-generation model for equity, pedagogy, and school transformation*. Corwin.
- Hinnant-Crawford, B. N. (2020). *Improvement science in education: A primer*. Myers Education Press.

Required Software

Within this course we will analyze quantitative data using the Stata statistical software package. You may have heard of or previously used SPSS, which is a common program and available for a fee. Stata is similar to SPSS but slightly more usable and robust. The student version of Stata/BE for 6 months can be purchased for \$48 at stata.com.

Attendance

Across the semester each week will build on material from the previous week. Therefore, your continued presence in class is critical to your success. If something comes up that prevents you from attending class, please let me know as soon as possible. Occasional absences may be unavoidable, but frequent absences will make it difficult to fully engage with the material and contribute to the group. In the case of an absence, you are still responsible for reviewing any missed materials and completing assignments on time.

Course Experience

Throughout the semester, we will pair conceptual exploration of quantitative and statistical ideas with hands-on work using statistical software. Most class sessions will blend lectures to clarify key statistical concepts with opportunities to apply those ideas through guided practice in statistical software and interpretation of real peer-reviewed research to build our quantitative literacy. As we engage in this work together, I see myself as both instructor and co-learner: I will draw on my background in quantitative and mixed-methods research while continuing to deepen my own understanding of critical quantitative inquiry.

Course Assignments

Within this course you will have several assignments, summarized in the table below and then described in more detail.

Item	Due Date (11:59pm)
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Dataset Activity	March 3, 2026
Quantitative Study Design Plan	March 24, 2026
Classwork Portfolio	May 12, 2026
Quantitative Research Interpretation Portfolio	May 22, 2026

Dataset Activity

For this activity, you will practice identifying and making sense of publicly-available datasets. First, you will create a quantitative research question in line with your interests. Then, you will identify and download a dataset relevant to this question. Next, you will locate and download (or print to PDF, etc.) the dataset codebook/dictionary/documentation. In a Word document, you will provide the following:

- Your research question
- Brief narrative of how you identified the dataset and link to where you found dataset
- Summary of how the data was collected and when
- The unit of analysis and the sample (or population) the dataset represents
- Summary of 3-4 key variables within the data that are relevant to your research question and the measurement level of those variables
- Brief commentary on any intrinsic assumptions/biases/limitations you see within the data

Provide the Word document, dataset file, and dataset documentation in Canvas. I provide an example of what the Word document will look like in our Google folder.

Quantitative Study Design Plan

Across the first several weeks of the course, we will learn how to conceptualize and design quantitative studies that address educational problems of practice. The purpose of this assignment is to apply those concepts by developing a brief quantitative study plan aligned with your research and/or practice-grounded interests. While many of you are more interested in qualitative research, this will give you an opportunity to imagine how you might apply a quantitative lens to your dissertation topic or to addressing issues of justice in a school setting. In a 5-6 page (double-spaced) Word document, please provide the following:

- Research Question: Provide one quantitative research question related to your topic
- Design (1 page): Select a research design and briefly explain how it would be appropriate to answering your research question
- Constructs (1/2-1 page): Identify 1-3 key constructs (e.g., school climate, teacher self-efficacy, student achievement) integral to answering your question, explain them/why they are integral, and discuss how you would define them
- Data Sources (1 page): Potential data sources (e.g., publicly-available datasets, surveys) you could use to answer your question and how you would gather that data (including your sample)
- Variables (1/2-1 page): 4-5 variables you could use to measure your constructs and their levels of measurement (tip: you are welcome to use the same dataset you describe in the Dataset Activity if applicable)
- Critical Reflection (1-2 pages): In line with our learnings around critical quantitative approaches, consider about this design who is represented and erased? How are constructs framed and who defines them? Whose interests would results serve? How could your positionality influence this research?
- Connection to Leadership Practice (1/2 page): Describe how this study could be useful in a real school or district setting. Discuss what this study could reasonably help leaders think through, what it could not support or justify on its own, and what interpretive cautions a justice-oriented leader should keep in mind to avoid deficit framing or harm.

I encourage you to use these bullets as headings in the document. Please follow APA 7th Edition for this assignment. Please submit your document to Canvas.

Classwork Portfolio

Across seven sessions (Sessions 6, 9, 10, 11, 12, 13, 14), we will be conducting quantitative analyses within Stata. Each class session I will provide you with a Stata Do-File. As a class, we will collectively run the provided Do-File and briefly review the results together. Then, you will take the Do-File output from your Stata Results window, and copy and paste the output into a running Word document that will make up the portfolio. Within the Word document:

- As noted, copy and paste full output
- Use page breaks for each week and put a label at the top of each week to denote the session

- Use a monospaced font such as Consolas or Courier (otherwise the spacing on pasted tables will not be correct; you may also want to do font size 8 or 9)
- Use single line spacing
- Copy/paste all graphics into the appropriate place in the output.
- The output will include questions for you to answer. Please answer each. Use a different color text, such as blue or green, so I can see it more easily.

Ideally, you will be able to complete most or all of this portfolio work in class. Please submit this document to Canvas. I provide an example of what this will look like in our Google folder.

Quantitative Research Interpretation Portfolio

The goal of this portfolio is to deepen your ability to read, interpret, and critique quantitative research. Throughout our statistics sessions we will look at examples of peer-reviewed quantitative work to examine how researchers present quantitative findings. You will choose two quantitative articles from the folder on our Google Drive. For each selected article, you will answer the following in plain language:

- Provide the article citation in APA
- What is the key research question within the study?
- What research design, data source, and analytic techniques are used in the study?
- How do the researchers assess reliability, validity, and generalizability, if at all?
- Paste in one results table (use a screengrab tool and paste as an image) and interpret
- What assumptions/biases/limitations do you see in this article?
- What could a more critically-oriented approach to the same topic look like?

I recommend organizing your responses using these bullets (i.e., paste bullets into your document and answer directly under). Provide your portfolio on Canvas as a single complete document. I provide an example of what this will look like in our Google folder.

Grading

Quantitative methods and statistics are often a significant source of anxiety for students. I understand this completely. With this in mind, within this course, I use **specifications grading** to provide your grades. Each assignment is graded as either completed or incomplete. A complete assignment is one that meets all of the specifications within the assignment description (e.g., topics/items to address, approximate page length). My hope is that by using specifications grading you will feel less anxious about the course and be more able to dig into our learning experiences without fear. We are not seeking perfection, just growth in knowledge. The grade you receive in the class will depend on how many assignments you have completed per specifications. Your grade will represent the lowest item on the table. For example, if you did not complete the Dataset Activity but did complete all other assignments fully, you would still receive an F. Alternatively, if you completed all assignments but only 6 Classwork Portfolio Sessions, you would receive a B.

Grade	Dataset Activity	Study Design Plan	Classwork Portfolio	Research Portfolio
A	Completed	Completed	7 Sessions Completed	2 Articles Completed
B	Completed	Completed	6 Sessions Completed	2 Articles Completed
C	Completed	Completed	5 Sessions Completed	2 Articles Completed
F	Not Completed	Not Completed	4 or Fewer Sessions Completed	1 or Fewer Articles Completed

For more information on specifications grading:

- Nilson, Linda B. (2015). *Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time*. Stylus Publishing.
- Stommel, Jesse. (2018). How to ungrade. Retrieved from <https://www.jessestommel.com/howto-ungrade/>

Note: The lowest passing grade for a graduate student is a "C." Grades lower than a "C" that are submitted by faculty will automatically be recorded as an "F." Please see the Graduate Catalog for more detailed information on the University's grading policy.

Late Assignments: If you are facing extenuating circumstances, please let me know. I also provide information on accommodations below. Otherwise, all late assignments will receive a one-grade reduction.

Revisions: You are welcome to revise your work for an improved grade at any time based upon feedback. The only exception is that we have a hard deadline for the final grades, which are due from me on May 29, 2026. With this in mind, all revisions for all assignments must be completed by May 27, 2026. I will ensure that I have graded all of your work by May 24, 2026, to ensure that you have time to complete revisions if needed. If you are concerned about this timeline, please contact me directly.

Notes on Feedback: Please do not worry about receiving feedback. Part of being in a PhD program is receiving feedback. Feedback is the cornerstone of our ecosystem—the peer review system itself is built upon lots of pointed feedback (see “Reviewer 2” memes for more information!). You should be receiving lots of feedback from professors, advisors, and others who you are writing with, and my class is no exception.

The grade of “I” or incomplete will only be given if a student is unable to complete the semester due to illness or for acceptable personal reasons. The student is responsible to meet with the instructor to gain approval for the grade of “I.” Before the grade of “I” can be assigned, the student and the instructor must develop a plan for the completion of the required work. Students must complete the required work during the semester and will only be given extensions of time to complete assignments based on prior approval by the instructor.

Academic Integrity

The formal spiel:

The International Center for Academic Integrity (ICAI) defines academic integrity as “a commitment to five fundamental values: honesty, trust, fairness, respect, and responsibility.” The ICAI states, “These five values, plus the courage to act on them even in the face of adversity, are truly foundational to the academic endeavors of teaching, learning, and research...When the fundamental values are embraced, utilized, and put into practice they become touchstones for scholarly communities of integrity.” Academic integrity is essential to uphold within all classrooms, in the many spaces where academic work is carried out, and in our local and global communities.

Students are expected to adhere to the Student Code of Conduct, including policies about academic integrity, as written in the University of Massachusetts Boston Graduate Studies Bulletin, Undergraduate Catalog, and relevant program student handbooks. Within this course we will follow the University’s Student Code of Conduct, which is accessible at https://www.umb.edu/academics/academic_integrity.

Please review the following:

- UMB’s Correct Citation and Avoiding Plagiarism LibGuide: <https://umb.libguides.com/plagiarism>
- UMB’s website on Academic Integrity: www.umb.edu/academics/academic_integrity

My personal spiel on academic integrity:

First, remember that you are part of an academic community within a research-intensive university that produces knowledge that profoundly influences both the realm of ideas and people’s lives. A crucial value of an academic community is maintaining the balance between the free exchange of ideas and respect for intellectual property. It is expected and required that all work completed and submitted in this course be your *original* work. You may also use words or ideas written by others in publications, media, and other sources, as long as you properly attribute those via citations (in APA). Researchers do not use each other’s work without authorization; scholars and students provide proper citations in their papers; professors may not share or publish student papers without the student’s consent; and students must not distribute or post class materials without the instructor’s written consent. In short... PLEASE DO NOT PLAGIARIZE!

Artificial Intelligence

I want to begin by saying that you are in this PhD program because you are capable of meaningful insight, and I encourage you to trust your voice and intellectual capacity. Please remember why you joined the UMB community and consider whether you want to be a leader whose ideas and voice come from AI rather than within. The use of AI to write your assignments is prohibited in this class. And it is prohibited to upload any data into AI platforms. All work submitted by students must be generated by the students themselves, whether working individually or in groups. Students should not have another person or entity do the writing of any portion of an assignment; this includes hiring a person or a company to write assignments and using AI tools like ChatGPT. All work submitted must contain citations for any material that has been quoted or

referenced. If you are unsure about whether a source is appropriate to use in the assignment, please contact me. In class we will discuss appropriate examples of AI use in our setting.

While you should never use AI to analyze data, it can be incredibly helpful for helping you to quickly work through challenges in statistical programs. Today, many researchers use AI to assist with statistical programming. In line with this, within this course you may use AI to support your work within statistical software (Stata, in this course). For example, you may ask AI why particular code is not working, or how you might recode a variable. You are already being given Stata commands and Do-Files meant to make completing the homework very straightforward.

Accommodations

Your success in the class is important to me. If there are circumstances that may affect your performance in this class, please let me know as soon as possible so that we can work together to develop strategies for adapting assignments to meet both your needs and the requirements of the course. In other words, you do not need an official letter in order to talk to me about any issues impacting your learning— whether that be disability, sickness, family issues, or other challenges.

If you have a documented disability or would like guidance about navigating support services, contact the Ross Center for Disability Services by email (ross.center@umb.edu), phone (617-287-7430), or in person (Campus Center, UL Room 211). To receive accommodations, students must be registered with the Ross Center and must request accommodations each semester that they are in attendance at UMass Boston. For more information visit: www.rosscenter.umb.edu.

A Note on Being Human

I know that life happens. Sickness, disability, mental health, family problems, poverty, violence, immigration policies—all of these things can impact your performance in school, and often times, they can come suddenly and without notice. If you are dealing with issues in your personal life that will affect your performance in the class, please come talk to me. You do not need to disclose any more details than you wish. You can just let me know you're dealing with things in your personal life, and then you and I can work on a plan to make sure you succeed in the class while taking care of yourself.

Diversity

We recognize the invaluable contribution of diverse experiences and perspectives to the learning process. Each of us brings a unique background, set of experiences, and cultural lens that enriches our collective understanding. It is crucial that we remain conscious of our own biases, assumptions, and preconceptions, actively seeking to challenge and expand our perspectives. Within this course we will:

- not tolerate racist and other hurtful thought and behavior;
- call out and challenge individual or systemic acts of racism and other forms of discrimination and bigotry;
- choose and discuss course materials that express strong declarations of solidarity with people of diverse human, ability, linguistic, documentation, and cultural backgrounds to eradicate forms of racism, bias, and prejudice in spaces of teaching and learning;
- promote diverse epistemologies, including linguistic knowledges;
- explicitly push for research desires and designs that are anti-racist; and
- participate in ongoing professional development for university faculty to succeed in countering racism and other forms of bigotry.

Religious Holidays

I recognize and respect the diverse religious beliefs and practices of students in this course. If you need to observe a religious holiday that coincides with a class session or assignment, please notify me in advance, preferably at the beginning of the semester or as soon as you become aware of the conflict. I am committed to working with you to make appropriate arrangements, such as rescheduling assignments or providing alternative options for participation, so that you can fully engage in the course while honoring your religious commitments.

Acknowledgements

Several colleagues have shared their materials with me or placed them online as a resource. I appreciate those in academia who share work to ensure that student learning opportunities across institutions are as high-quality as possible. In particular, I wish to thank Tim Drake at NC State and Steven Carlo at Monmouth, who both very kindly shared extensive material with me.

Recommended Future Quantitative Methods Course to Take

If you are interested in a quantitative dissertation, I highly recommend that you take an additional, advanced quantitative/statistical methods course. See here for a list of several options:
<https://www.umb.edu/admissions/graduate-students/faculty-resources/research-methods-courses/>

Course Schedule

Notes about readings: Please skip all activities in the readings and any sections related to SPSS.

Session 1: Tuesday, January 27

Course Introduction

Frisby, M. B. (2024). Critical quantitative literacy: An educational foundation for critical quantitative research. *AERA Open*, 10, 1-13.

Session 2: Tuesday, February 3

Critical Perspectives on Quantitative Research

Tabron, L. A., & Thomas, A. K. (2023). (Un)learning White Supremacy Ideologies to Advance Critical Approaches to Quantitative Inquiry. In M.D. Young & S. Diem (Eds.), *Handbook of Critical Education Research* (pp. 401-413). Routledge.

Garvey, J. C., & Huynh, J. (2024). Quantitative criticalism in education. *Critical Education*, 15(1), 74-90.

Castillo, W., & Gillborn, D. (2023). How to “QuantCrit:” Practices and questions for education data researchers and users (EdWorkingPaper No. 22-546). Annenberg Institute at Brown University. <https://edworkingpapers.com/sites/default/files/ai22-546.pdf>

Session 3: Tuesday, February 10

Quantitative Research Designs

Leedy, P., & Ormrod, J. (2021). *Practical research: Planning and design* (12th ed.). Pearson.

- Chapter 6: Descriptive Research
- Chapter 7: Experimental, Quasi-Experimental, and Ex Post Facto Designs.

Additional reading on mixed methods if of interest (I will briefly overview in class):

- Creswell, J., & Creswell, D. (2017). *Research design: Qualitative, quantitative, and mixed method approaches* (5th ed.) Sage.
- o Chapter 10: Mixed Methods Procedures

Additional reading on reliability and validity if you would like, although I think the above chapters are already thorough:

- Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.
- o Chapter 6: An Introduction to Understanding Reliability and Validity: Just the Truth

Session 4: Tuesday, February 17

Quantitative Data and Where to Get It

BPS February Break—Zoom session to accommodate family schedules, etc.

Leedy, P., & Ormrod, J. (2021). *Practical research: Planning and design* (12th ed.). Pearson.

- Chapter 4: Planning Your Research Project—Focus on pp. 120–on

MA Department of Elementary and Secondary Education. (2024). Researcher’s guide to Massachusetts state education data. Office of Planning and Research.

- As you look through this document consider potential data sources you would want

National Academies of Sciences, Engineering, and Medicine (NASEM). (2019). Monitoring Educational Equity. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25389>

- Summary Chapter (pp. 1-12)
 - o As you read, consider the equity indicators—what are your thoughts on these?

Browse some of the following websites and become familiar with the offerings:

- National Center for Education Statistics: <https://nces.ed.gov>
- U.S. Department of Education, Ed Facts Data: <https://www2.ed.gov>
- U.S. Department of Education, Civil Rights Data Collection: <https://ocrdata.ed.gov>

- Institute for Social Research, University of Michigan: <https://www.icpsr.umich.edu/sites/icpsr/home>
- Massachusetts Research Data Hub: <https://educationtocareer.data.mass.gov/browse?sortBy=relevance&page=1&pageSize=20>
- Massachusetts DESE Data: <https://www.doe.mass.edu/SchDistrictData.html>
- Boston Public Schools Publicly Available Data: <https://www.bostonpublicschools.org/about-bps/data-and-reports/research/appendix-a-publicly-available-data>

Session 5: Tuesday, February 24

Introduction to Stata

Please come with Stata downloaded and installed on your computer
Take a look at this video: <https://www.youtube.com/watch?v=vLE-N426ib4>

Session 6: Tuesday, March 3

Describing Data: Frequency Distributions, Central Tendency, and Variability

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 2: Computing and Understanding Averages: Means to an End
- Chapter 3: Understanding Variability: Vive la Différence
- Chapter 4: Creating Graphs: A Picture Really is Worth a Thousand Words

Session 7: Tuesday, March 10

The Normal Curve and Standard Scores

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 8: Probability and Why it Counts

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 6: The Normal Curve and Standard Scores

Tuesday, March 17—No Class—UMB Spring Break

Session 8: Tuesday, March 24

Foundations of Statistical Inference

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 7: Hypotheticals and You
- Chapter 9: Significantly Significant

Leedy, P., & Ormond, J. (2020). *Practical research: Planning and Design* (12th ed.). Pearson.

- pp. 361–367—Great overview

Session 9: Tuesday, March 31

Correlation

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 5: Computing Correlation Coefficients
- Chapter 15: Testing Relationships Using the Correlation Coefficient

Optional reading that may be more accessible:

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 7: Correlation

Session 10: Tuesday, April 7

t-Test

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 11: *t*(ea) for Two: Tests Between the Means of Different Groups
- Chapter 12: *t*(ea) for Two (Again): Tests Between the Means of Related Groups

Optional reading that may be more accessible:

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 9: *t*-Test

Session 11: Tuesday, April 14 **ANOVA**

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 13: Two Groups Too Many? Try Analysis of Variance

Optional reading that may be more accessible:

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 10: Analysis of Variance

Session 12: Tuesday, April 21

Simple Linear Regression

BPS April Break—Zoom session to accommodate family schedules, etc.

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 16: Using Linear Regression: Predicting the Future

Optional reading that may be more accessible:

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 8: Prediction and Regression

Session 13: Tuesday, April 28

Multiple Linear Regression

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 8: Prediction and Regression

Diez, D. M., Cetinkaya-Rundel, M., & Barr, C. (2012). *OpenIntro statistics* (Vol. 4). OpenIntro.

- Section 9.1

Session 14: Tuesday, May 5

Chi-square

Salkind, N. J., & Frey, B. B. (2019). *Statistics for people who (think they) hate statistics*. Sage Publications.

- Chapter 17: Chi-Square and Some Other nonparametric Tests (focus only on chi-square sections)

Optional reading that may be more accessible:

Ravid, R. (2020). *Practical statistics for educators* (6th ed.). Rowman & Littlefield.

- Chapter 11: Chi Square Test

Session 15: Tuesday, May 12

Using Data to Drive Change in Schools

Crow, R., Hinnant-Crawford, B. N., & Spaulding, D. T. (Eds.). (2019). *The educational leader's guide to improvement science: Data, design and cases for reflection*. Myers Education Press.

- Chapter 2: Tools for Today's Educational Leaders: The Basic Tool Box

- Chapter 3: Practical Measurement in Improvement Science
- Chapter 16: Applying the Plan, Do, Study, Act Framework to Building a Social-Emotional Student Support Framework
- Chapter 17: The Methodology for Educational Leaders

UMB Student Support Services

UMB provides a wide variety of resources to support graduate students' overall well-being and success. Please take advantage of them. If you need help connecting to these sources, please let me know.

Are you in emotional distress? Call 617.287.5690 to speak with a licensed clinician 24/7 who can offer support, crisis recommendations, and assistance with finding resources.

Do you need support with your writing? The Writing Center provides a host of supports for graduate students including writing consultants and writing retreats. Please take advantage wonderful opportunities provided by the Center's staff! <https://www.umb.edu/writingcenter/>

Need other support, including tutoring or academic support? Visit: Graduate of student Resources: <https://www.umb.edu/admissions/graduate-students/graduate-students-assistantships/graduate-student-resources/>

Want advice in navigating a university or life situation? Contact the Dean of Students Office at www.umb.edu/deanofstudents.

Want to connect with housing and food insecurity support, student life groups and events, or recreation activities? Visit www.umb.edu/life.

Want to access resources specifically for immigrant-origin, DACA, TPS, and undocumented students? Visit www.umb.edu/immigrant.

Looking for additional identity-based community support? Find more resources at www.umb.edu/identity-support

Want to make the most of your academic experience? Visit www.umb.edu/academics/vpass/academic_support