



THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF MATHEMATICAL SCIENCES
¡BIENVENIDOS (WELCOME)!

note: From the top of <http://www.math.utep.edu/Faculty/lesser/schedule.html>, you can access this syllabus if you misplace yours, want to explore its links, or see any updates to it. Syllabus is subject to modification by instructor to meet course needs, especially if there are unexpected disruptions or changes in class size, resources, student backgrounds, etc.

Course Number: MATM 5361-001 (CRN# 28366)

Course Title: (Qualitative) Research Methods in Mathematics Education

Credit Hours: 3

Term: Spring 2019

Prerequisite: MATH/MATM 5360

Course Fee: none

Course Meetings & Location: TTh 5-6:20pm in **HUDS 300**. In a disruption (e.g., H1N1 epidemic, subzero weather, etc.), be prepared to maintain course progress via alternative means (e.g., Internet, our Blackboard course shell, Bb Collaborate Ultra (see Bb Announcements), etc.) and check email (especially your UTEP account) regularly. **UTEP set our finals week meeting on Tues May 14, 4-6:45pm (with consensus, we usually find a way to move the time a bit later to accommodate working teachers).**

Instructor: Dr. Larry Lesser (rhymes with ‘Professor’, spelled like <). I began teaching university courses in 1988 (at UTEP since 2004), and I’ve also worked as a state agency statistician, a HS math teacher, and director of a university-wide teaching center. I’ve served on national statistics education journal editorial and research advisory boards and have published quantitative and qualitative studies in statistics education journals aimed at researchers (e.g., *Statistics Education Research Journal*, *Journal of Statistics Education*) as well as articles in journals aimed at teachers (e.g., *Teaching Statistics*, *Mathematics Teacher*).

See background on my homepage <http://www.math.utep.edu/Faculty/lesser/> or hear my introductory rap at <https://www.youtube.com/watch?v=sFizdFK09I8>

Office Location: Bell Hall 213

Contact Info: Phone: (915) 747-6845

Email: **Lesser (at) utep.edu** (please include **5361** in the subject line so it is easy to see and easy to search for later; also, emailing me from your u@miners.utep.edu address provides more security and reduces the chance of UTEP’s server rejecting it)

Homepage: <http://www.math.utep.edu/Faculty/lesser/>

Fax: (915) 747-6502 (note: this is a departmental fax, so be sure to have my name clearly on it; be aware that staff are not available to relay faxes to me outside the math dept’s hours of M-F 8-12, 1-5)

Emergency Contact: (915) 747-5761 (during math dept. office hours)

Office hours: TTh 1:30-2:20 (and by appointment) by Bell 213; and additional hours or changes will be announced or posted later; you are welcome to try emailing, calling, or stopping by without an appointment for readily answered questions; for questions requiring longer live conversation, just email me several possible times that would work for an appointment and I will reply with which option works in my schedule for a meeting whether it would be in-person, by phone, or via Blackboard Collaborate Ultra (instructions are in Bb course shell Announcements)

Textbook, Materials:

No required book to buy; we'll use readings such as articles or books on reserve

Read/do each assignment before the class meeting we discuss it.

To tailor the course to specific mathematics education research and because no single book completely covers all goals of this course, we supplement this book with handouts, individual articles, online resources and demonstrations, taking into account class backgrounds, interests, and time available.

- **Readings** (e.g., pp. 6-7) are available to you without cost-- each in at least one of the following ways (depending on logistics and copyright issues):
 - on the Internet (e.g., certain open-access journal articles and websites like <http://www.math.utep.edu/Faculty/lessor/ResearchResources.html>).
 - in our class Blackboard shell
 - at UTEP library hardcopy reserve at Circulation Desk (under Lesser or 5360 or 5361). For example, the 2012 reference book Atkins and Wallace book *Qualitative research in education* (Sage Publications) is available using 2-hour checkout from the UTEP library hardcopy reserve for MATM/MATH 5361 at the Circulation Desk.
 - on UTEP library electronic reserve via library homepage: Research → course reserves → search by Instructor → Lesser → Math 5361 or Math 5360
 - from the UTEP library home page, type the name of the journal's title into the MinerQuest Search window and choose TITLE. This usually results in your being able to access the journal from one or more sources and sometimes you can access more years than the listing says.

Course Objectives (Learning Outcomes): Students will....

- Increase ability to navigate, critique, and synthesize the research literature in mathematics education (which is assumed to include statistics education)
- Gain familiarity and hands-on experience with (primarily qualitative) methodology options and how to choose an option that aligns with the student's research question in mathematics education
- Develop understanding of criteria for rigor, reliability and validity in qualitative research
- Develop understanding of triangulation (four types: data, researcher, theory, method)
- Develop understanding of how qualitative methods can complement quantitative methods
- Understand pitfalls and ethical principles of (qualitative) research and how to comply with Institutional Review Board (IRB) requirements
- Write and present a mathematics education research paper that uses current edition of APA style
- Learn how to contribute to and benefit from being part of a community of (emerging) scholars, including peer debriefing and feedback on oral and written communication

Course Activities/Assignments: Students will participate in in-class activities, demonstrations, discussions, presentations, readings, papers, and assessments.

Assessment of Course Objectives: Assessments may include written homework (e.g., reflections or projects), quizzes, papers, presentations, and exams.

Course Schedule: Census Day: Wed., Feb. 6
Midterm Exam: currently set for March 26
Deadline to Drop with a “W”: Fri., April 5
Last Regular Class Meeting: Thurs., May 9; written final papers due (due to deadlines on my end, I cannot make this date later)
Presentation of Final Papers: Tues., May 14, 4-6:45pm (as set by UTEP registrar; with consensus, we usually find a way to move the time up to 60 minutes later to accommodate working teachers); if you have a pre-approved reason not to be able to present during this time, you need to arrange with me to either present at an earlier meeting or use an appropriate distance delivery technology during the finals week meeting time

Grading Policy: after any rescaling needed for all components to be on the 0-100 scale, the grade is determined by the usual cutoffs of 90-80-70-60 based on these 4 parts:

* Midterm Exam (20%) currently set for March 26, but at least a week or two in advance, I'll confirm exact date and material covered

* Homework/One-page Reflections/Projects/Quizzes (30%)

* Final Paper (35%) – due at our last regular class meeting, May 9 (this deadline gives you several days to focus only on the oral presentation; many research conferences work this way -- you submit your paper well before you present it so that a proceedings volume of everyone's papers can be prepared in advance and released at the conference); details about what is expected in the paper are at the end of syllabus

* Oral Presentation of Final Paper (15%) at our finals week meeting (Tues., May 14)

Makeup Policy: If a written assignment is due in class and you are not able to get to UTEP, you can still get full credit by emailing or faxing the assignment that night. A makeup exam is possible if you take the initiative to send me an email or voicemail within 24 hours (or the earliest medically possible opportunity) that tells me: (1) why missing the scheduled class exam date was unavoidable and unforeseen (even if it takes another few days to relay to me written documentation such as a doctor's note, jury summons, letter from an employer/athletic/military supervisor, etc.) for a serious reason, and (2) states multiple specific days and times within the next few days when you would be available to take a makeup exam.

Attendance Policy: I view attendance as **required** and here's why: Much of this course involves beyond-the-book group activities, experiences or discussions that are virtually impossible to recreate or “make up.” Successful completion of this course is intended not only to imply you have demonstrated sufficient knowledge acquisition, but also that you have been exposed to key processes, modeling, and experiences (which are especially important for researchers and teachers, for example). Therefore, if you are now in a situation where you expect to have frequent absences, you might consider taking this class in another section or another semester. Attendance is generally taken each meeting

using a sign-in sheet. If you think you might arrive late due to traffic or a meeting, keep in mind that I believe **it's always better to attend some of a class than none of a class.**

As the UTEP *Catalog* says, "When in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of "W" before the course drop deadline [Fri., April 5] and with a grade of "F" after the course drop deadline." In practical terms, this means a student is **subject to being dropped for 6 or more absences** (unless you have given me a written or emailed reason I have approved). If you choose to withdraw, I ask that you submit the formal paperwork and send me an email to let me know; **don't just stop attending class and assume I will automatically withdraw you.** On a positive note, a strong record of attendance will be taken into account if your final average is a point below a letter grade cutoff.

It's **your responsibility** to....

- (1) give me a written note or email by the 15th day of the semester [Mon., Feb. 11] if you will have absence for religious holy days (which are excused, of course).
- (2) give me an email or written documentation as soon as possible if you anticipate the possibility of missing large parts of class due to exceptional circumstances such as military service/training, childbirth, or competing on official UTEP athletic teams.
- (3) let me know by email (**Lesser (at) utep.edu**) or voicemail (747-6845) or daytime math dept. fax (747-6502) at the *earliest opportunity* if you have a serious situation which may affect a test, major assessment deadline, the final exam week meeting, or a large number of "regular" class days. **If you miss a "regular class meeting," you don't need to contact me – just get notes and announcements from a classmate and be sure you have contact information for at least 3 classmates for this purpose.**

Academic Integrity Policy: It's UTEP's policy (and mine) for all suspected violations to be referred to the Dean of Students for investigation and disposition (see the Handbook of Operating Procedures, <https://www.utep.edu/vpba/hoop/>). Cheating, plagiarism and collusion in dishonest activities are serious acts which erode the university's purpose and integrity and cheapen the learning experience for us all. Don't resubmit work completed for other classes without specific acknowledgment and permission from me. It is expected that work you submit represents your own effort (or your own group's effort, if it is a group project), will not involve copying from or accessing unauthorized resources or people (e.g., from a previous year's class). You must cite references that you do consult, using **APA style** with complete citations even for websites and people you consult.

For Group Work: Within a group, members are allowed to divide up subsets of the project for which individuals will take the initial responsibility for coordinating efforts, but it is assumed that by the time a group turns in a writeup that all members have read, discussed, contributed to, and understand what is being turned in. Group members may even discuss general ideas and strategies with members of other groups, but NOT share parts of actual written work. At a minimum, to be safe, put away all written notes and writing materials and recording devices before having any intergroup conversations. And if you still see a "gray area," play it safe and ask the instructor! Conversations between teams are not allowed during in-class quizzes taken as teams.

Civility Statement: We should all strive to follow basic standards of courtesy. Our comments during classroom discussions should focus constructively and respectfully on the intellectual merit of a position, *not* critiquing the person expressing it. Please avoid side conversations when one person (me, or another student) is address the class. Engaging in activities such as texting, Facebook, YouTube, phone conversations, or emailing are inappropriate because they distract and impact class participation by you and

others. If you are expecting an urgent call, *please keep your phone on vibrate* instead of anything loud, sit near the door to minimize disruption, and have the phone handy so you don't have to dig around for it. Or you might give your childcare provider or family member the phone number for the campus police (747-5611) so you can rest assured that someone will let you know if there is an emergency. Finally, know that free speech has limits and that the *UTEP Handbook of Operating Procedures* prohibits communication that is harassing, disruptive, or that incites imminent violations of law. Violations may be referred to the Dean of Students or Campus Police.

Student Accommodations Statement: If you have or believe you have a disability requiring accommodations, you may wish to self-identify by contacting the Center for Accommodations and Support Services (CASS; 747-5148; East Union Building 106; cass@utep.edu; <https://www.utep.edu/student-affairs/cass/>) to show documentation or register for testing and services. CASS will ask you to discuss needed accommodations with me within the first 2 weeks of the semester or as soon as disability is known, and at least 5 working days before an exam. At the start of a term, CASS sometimes has processing delays, and you are responsible to contact (and follow up with) CASS promptly so that I receive the CASS accommodation letter as soon as possible. CASS provides note taking, sign language, interpreter, reader and/or scribe services, priority registration, adaptive technology, diagnostic testing for learning disabilities, assistance with learning strategies/tutoring, alternative testing location and format, and advocacy. Depending on the specifics of your accommodations, I may need to email you to set up a live conversation with you about the best approach, so please be responsive.

Military Statement: Give me an email or written documentation as soon as possible if you anticipate the possibility of missing large parts of class due to military service.

campus carry: <http://sa.utep.edu/campuscarry/>
campus safety: <http://utep.edu/emergency/>

ADDITIONAL INFORMATION

Professionalism Statement: Beyond the previously mentioned Civility Statement, students in this course are expected to exhibit professionalism that goes beyond avoiding negative behaviors. This includes making a good faith effort in preparation for and participation in individual and collaborative class activities. This also includes supporting a classroom culture respecting “incorrect answers” as usually correct answers to a different question or valuable opportunities to address an important distinction or common misconception. (*Fun Fact:* “mistakes” led to inventing sticky notes, penicillin, and rubber tires!)

Confidentiality: UTEP policy requires that inquiries about confidential information such as grades cannot be done over the audio phone, but can be from your miners.utep.edu account and accompanied by your 800 number. Some grade information will be posted in our Bb course shell.

BIBLIOGRAPHY (see p. 2 for techniques for accessing articles)

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http://www.kpu.ca/sites/default/files/Transformative%20Dialogues/TD.8.1.6_Lesser%26Reyes_Case_Study_Statistics_Fun.pdf
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Yin, R. K. (2011). *Qualitative research from start to finish*. New York: The Guilford Press.

<https://teddykw2.files.wordpress.com/2012/05/qualitative-research-from-start-to-finish.pdf>

Blackwell introductory chapter:

https://www.blackwellpublishing.com/content/BPL_Images/Content_store/Sample_chapter/9780632052844/001-025%5B1%5D.pdf

some TOOLS (mostly free) for QUALITATIVE DATA ANALYSIS:

http://en.wikipedia.org/wiki/Computer_assisted_qualitative_data_analysis_software

<http://cat.ucsur.pitt.edu/>

<http://rqda.r-forge.r-project.org/>

<http://www.transana.org/>

<http://compendium.open.ac.uk/institute/>

<http://www.pressure.to/qda/>

<http://discovertext.com/>

<http://boardreader.com/index.php?a=a&x=1> (searches website for words)

<http://vue.tufts.edu/index.cfm> (concept map)

<http://texttexture.com> (graph network of key words in text)

<http://www.liwc.net/tryonline.php> (personal vs. formal)

<http://voyeurtools.org> (word cloud)

<http://admin.utep.edu/Default.aspx?tabid=74274> (NVIVO)

Student Support:

On the 2nd floor, there is free help with writing papers (Library 227; 747-5112; Writing Center (Library 227, 747-5112, <http://uwc.utep.edu/>)).

My training is limited to academic resources, but I want anyone who feels overwhelming stress/crisis to know about these broader resources:

- **UTEP's Counseling Center** (free counseling to all students): 202 Union West, 747-5302 (which after-hours goes to a crisis line)
- El Paso's Mental Health Crisis Line: 779-1800 (24 hours)
- **National Suicide Prevention Hotline** or **Veterans Crisis Line**: 1-800-273-8255
- **NAMI (National Alliance Against Mental Illness) of El Paso**: 534-5478
- <http://caringeducators.tumblr.com/survival>

information on MATM 5361 spring 2019 final paper
(subject to refinement if necessary)

The idea is to pick a dataset that (1) is large enough and rich enough to support nontrivial investigation of a nontrivial question, (2) is not so large as to be not manageable in the time available, (3) and is something for which you do not need IRB approval if you use this only as a 5361 class project without further dissemination and without attempting to produce generalizable knowledge. An example of (3) is something that is published or publicly available (e.g., an analysis involving textbooks or published videos of lessons or a corpus of published articles such as was done in

https://www.researchgate.net/publication/320237743_Statistics_Education_Research_Who_What_How).

Human Subjects Research (IRB): We are responsible for knowing and complying with all federal and institutional policies regarding research. Some studies (e.g., content analysis of publicly available curriculum materials; e.g., see Cady & Hodges (2015) from our course bibliography) do not involve human subjects and therefore require no IRB involvement. You also do not need to file an IRB exemption request if you are doing a classroom research study on your students meeting these 6 conditions: (1) you're collecting "data" (e.g., homework assignments) that is within the scope of what you might typically collect anyway as their teacher as part of assessing their work and informing your efforts to teach them, (2) you're complying with all regulations your school has on confidentiality, etc., (3) the study is intended to gain experience with the methods of research rather than to produce knowledge that generalizes beyond your classroom, (4) you have disclosed the project's methodology in advance to your professor so that any potential issues could be discussed, (5) the study involves no risk or minimal risk to subjects, and does not involve sensitive topics, and (6) the results will not be shared outside your peers in our class (i.e., will not be disseminated at a conference or in a journal, though discussing patterns in de-identified data with your school's math teachers for a math department professional development meeting should be okay).

If, however, your data involves human subjects and you would like the option of sharing beyond our class, you will need to submit the Exemption Application (available from the Forms page: <https://research.utep.edu/Default.aspx?tabid=72172>) if you qualify (for some discussion of relevant considerations about what qualifies, see https://research.utep.edu/Portals/99/_irb_web/irb%20research%20guidance%20docs/UTEP%20IRB%20Guidance%20on%20Classroom%20Research.pdf), or you may instead be required to submit all parts needed for IRB expedited or full review (see <https://research.utep.edu/Default.aspx?tabid=72171> and <https://research.utep.edu/Default.aspx?tabid=72175>). Note that you will need to very carefully plan your timeline so that you allow time for all needed approvals to be in place *before* collecting data. So, for example, you might submit the IRB process by the end of January, get approval in February, and then collect data in March. Also, note that going through the IRB process will include completing any required CITI (Collaborative Institutional Training Initiative) Training. You'll go to <http://www.citiprogram.org>, register, select the "Human Subjects Research" coursepath, then choose "Social and Behavioral". (Note: UTEP has an example of website screenshots that may be helpful to see even though they refer to someone choosing a different course path than the one you'll take:

<https://research.utep.edu/Portals/99/Doc/policies/rcr/CITI%20Instructions%2008-08-13%20v1.pdf>). By

listing your affiliation as with UTEP and not requesting CEUs, this training is free and the certification is good for 3 years. If you have any questions about the CITI process, contact **utepresearchtraining@utep.edu**. This training is part of what you have to do to keep open the option of disseminating your research beyond our course, but also will give you valuable knowledge about the research process in general even if you currently do not have an interest in disseminating your classroom research. For any questions about the IRB process and rules that are still not clear, feel free to contact UTEP's very helpful IRB Administrator Christina Ramirez (747-7693, Kelly Hall 709, **cramirez22@utep.edu**).

Whatever type(s) of data you have, you want to do some **coding** and you'll want to keep a log or journal of your coding process. First, decide (and explain why) for your project whether it makes more sense to do codes-first (based on prior work or literature), codes-last or something in between. Remember to do multiple passes with the different levels of coding (descriptive, interpretative, pattern), and describe whether you ended up needing to create new codes (if so, state what they were and why they were needed) and what the level of intercoder agreement was within your team (before discussion and then after discussion).

Your team will make a **cross-case analysis table** (where each column is an interviewee, each row is a code/pattern/theme, and each cell contains one or more line numbers that illustrate that classification), and identify what you think are the ONE or TWO biggest themes (pattern codes) of the entire data set.

We will schedule a **peer debriefing session** in April to provide researcher triangulation to your study with their different perspectives; during the session, you'll have a chance to (referring as needed to key pieces of data or cross-case displays) consider alternative interpretations, explore apparent "mixed" results for possible reconciliation, identify and discuss any possible biases, assumptions, errors, or omissions, and therefore become more aware of our own views (e.g., <http://www.debriefing.com/peer-debriefing/>);

Oral presentation (15%) will be during our finals week meeting (as noted in the syllabus). The exact amount of time each presentation will get depends on how many presentations there are in the available time. If you have an approved reason not to be able to present in person during this time, you need to arrange with me in advance to either present at an earlier class meeting or by using an appropriate distance delivery technology (e.g., a YouTube video, an Office Mix file, etc.); once time limits are determined, they will be strictly enforced with a timer, so you'll need to practice; the prepared part will be followed by a few minutes for questions and discussion; see tips at <http://www.math.utep.edu/Faculty/lessor/speaking.html> ; the rubric to assess the oral presentation is the MATM program rubric for oral communication; if you show visuals (e.g., PowerPoint slides), please give me a hardcopy of them (it's okay to save trees by putting 4 slides per page) so that I can refer to them later if I need to.

Written report (35%) is due by the end of the last regular class meeting (May 9) in hard copy or as an MSWord file, double-spaced (or 1.5 spaced) in 12-point Times New

Roman. No exact number of pages, but you might not be “doing it right” if it’s less than, say, 5 pages or more than, say, 30. **Extensions are not possible** due to constraints I have for grading on my end, so plan accordingly. A benefit of this deadline is that it gives you a few days to focus only on the oral presentation (many research conferences work this way -- you submit your paper well before you present it so that a proceedings volume of everyone’s papers can be prepared in advance and released at the conference) and it gives me time to look over your paper and identify what questions I may need to ask you to clarify things at the presentations day.

Sections of the written paper are normally as follows, but I will not expect the introduction and literature review sections to be extremely comprehensive and lengthy – quality is more important than quantity here – and remember that while some pre-analysis literature review is appropriate to set the stage for what you are about to explore, a qualitative research paper then goes back to the literature after data has been analyzed to be able to give the findings context and note if/how the findings are similar/different from those in other studies

Abstract of 100-250 words that summarizes the paper, including the purpose, type of research strategy, main results, and main implication. Most academic journal articles start with an abstract so readers can make an informed choice about whether to take time to read the full article.

Introduction – this section is a “statement of the problem”, including the purpose and need for your study (think about what made you decide this was an important or interesting thing to explore for your own curiosity and for the benefit of the education community) and its guiding research questions and theoretical/conceptual framework/model/theory; include **delimitations** that you impose at the beginning to narrow the scope (these are different from ‘limitations’ -- conditions you would not have chosen but were beyond your control – those get discussed near the end of the paper); define any complex terms; also include any prior pilot study work you may have done).

Literature review this is an expansion of the relevant references from the introduction section, appropriately taking into account relevant literature within and beyond mathematics education; be sure to point out positive and negative sides, gaps, etc., and be sure to not just give a chronology of results from other studies, but synthesize, organize and critique them.

Methodology – the rationale for the design of the study needs to be given, ideally in a way that naturally “follows” from the information in the preceding two sections (e.g., does the research design “support” the research question?); it is often nice to see a visual diagram that maps out the flow of the steps of the study; the procedures or protocol for carrying out the study (including any intervention or treatment) and collecting data needs to be given in at least enough detail to allow for replication; describe the population and sample (and how they were selected) in a way that provides the appropriate level of anonymity, but still gives the reader a useful idea of relevant characteristics; describe the data collection instruments used (e.g., written questionnaire, interview questions, tests,

observation forms, coding lists, etc.) and how they were chosen or constructed (the actual instruments can be included in the appendix), and how you have addressed issues such as reliability and validity; if you haven't already, be sure all hypotheses have been stated in terms of variables with concrete operational definitions; describe the data analysis techniques and tools that are used; note any triangulation (of method, of subject, of researcher, of data source) used

Include a couple of paragraphs where you describe your team's process of coming up with any new codes and how the codes evolved, your experience assessing interrater reliability and what you learned from it; remember some things discussed on pp.108-9 of:

Cady, J. A. & Hodges, T. E., Collins, R. L. (2015, March) A comparison of textbooks' presentation of fractions. *School Science and Mathematics*, 115(3), 105-116.

Findings [even if you are just reporting ONE finding] Here is where you state what the theme is, what it means or includes, and how it arose from (and is supported by) the data or from the cross-case analysis. To do the latter, you will need to include some specific excerpts or examples from the data, just as Lesser & Winsor (2009) did; If you determine that your theme has potential sub-themes or connections to a different theme, include some discussion on that. How does your finding/theme help at least partially address a particular guiding research question of the study? Make sure you include at least one thoughtful graphic, table, chart, or word table (see chapter 10B of Yin in our Blackboard shell) to summarize analysis (e.g., Table 1 of Wilson, Cooney & Stinson (2005).

Discussion In Findings, you were presenting a theme as one particular result of the study. Now is the chance to add context to help us understand, including going to the mathematics/statistics education refereed research **literature** (using what you learned in Math 5360 to do the searching; remember not to just list other studies, but to contextualize and synthesize those studies; remember the Pan (2008) material from our syllabus to find a few key studies that make connections that help us understand what the data mean (especially if there are practical implications for researchers or teachers), how they compare or contrast to other studies that have been done; this is where you give **implications** of your findings; this is also a chance to discuss any **limitations** the study has, discuss any issues or new insights that came out of the peer debriefing session, and offer suggestions you may have for **followup research** that might be valuable for someone to do in the future.

References section with **APA referencing style**, even for websites and people you consult. Unless the topic is so new there is almost no relevant literature on it, at least 80% of your references should consist of refereed journal articles and book chapters rather than webpages, personal communication, reports (not counting reports of major government agencies), and ED documents that have not been peer reviewed. Make sure that some of the journals have a research focus rather than being aimed only at practitioners or general audiences.

Appendix Include summaries of your coding, along with any diagrams, tables, or other organizers that would be helpful to see, but you don't want them to interrupt the narrative flow of the paper.