

**University of Texas at El Paso
College of Education
Department of Teacher Education**

Fall 2019

<u>Course</u>	MTED6330/TED5319
<u>Topic</u>	Teacher Development in Mathematics and Science Education
<u>Credits</u>	3-0

Course Description

This course examines and analyzes research on the preparation and professional development of mathematics and science educators. Driving questions include but are not limited to: 1) to what extent does teacher knowledge, skill, and disposition affect quality learning and achievement opportunities for students? 2) what kinds of teacher learning experiences are effective in transforming beliefs about teaching practice and learning mathematics and science? and 3) how do teacher education programs as well as national and state standards and policies have an impact on the development of mathematics and science teachers?

Contact Information

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Required Readings will be distributed during class sessions.

Additional Bibliography could be found in the bibliography sections of the required readings.

Learning Outcomes

Upon completion of this course, students should be able:

- To examine and analyze research on the preparation and professional development of mathematics and science educators
- To learn how teacher education programs as well as national and state standards and policies affect the development of mathematics and science teachers
- To reflect on kinds of teacher learning experiences that are effective in transforming beliefs about teaching practice and learning mathematics and science
- To critique and evaluate the impact teacher knowledge, skill, and disposition have on teaching practice, quality learning, and achievement opportunities for students.

Course Schedule

Week	Activities	Assignments/ Submissions
1. Aug. 28	Introduction and Syllabus Review	Introduction Card
2. Sept. 4	Critique #1: Charalambous, Pitta-Pantazi, HIRME, 2016, 19-59. Open forum	Critique-1**
3. Sept. 11	Peer review* on critique #1 Individual Conferencing 1	Peer review-1**
4. Sept. 18	Critique #2: Davis, Simmt, ESM, 2006, Vol. 61, 293-319. Open forum by demand	Critique-2
5. Sept. 25	Peer review on critique #2 Individual Conferencing 2	Peer review-2
6. Oct. 2	Critique #3: Tchoshanov, ESM, 2011, Vol. 76, 141-164. Open forum by demand	Critique-3
7. Oct. 9	Peer review on critique #3 Open forum by demand	Peer review-3
8. Oct. 16	Critique #4: Mason, Spence, ESM, 1999, Vol. 38, 135-161. Open forum by demand	Critique-4
9. Oct. 23	Peer review on critique #4 Open forum by demand	Peer review-4
10. Oct. 30	Critique #5: Steinbring, JMTE, 1998, Vol. 1, 157-189. Open forum by demand	Critique-5
11. Nov. 6	Peer review on critique #5 Open forum by demand	Peer review-5
12. Nov. 13	Critique #6: Hill, Ball, Schilling, JRME, 2008, Vol. 39(4), 372-400. Open forum by demand	Critique-6
13. Nov. 20	Peer review on critique #6 Open forum by demand	Peer review-6
14. Nov. 27	Critique #7: Paper of your choice related to the topic of teacher knowledge. Open forum by demand	Critique-7
15. Dec. 4	Presentation of Critique #7 Peer review on critique #7	Peer review-7

*Peer-reviews applies to doctoral students only

**Submission is due by 11:59PM on Sunday of the corresponding week

Course Communication

Since this is a hybrid course, contact will be limited to electronic communication. There are various ways we can keep "in touch":

- Via phone call during my Office Hours (stated at the beginning of this syllabus).
- Via email using my UTEP e-mail also shown at the beginning of the syllabus.

I will be checking my e-mail once a day and my responses shouldn't take more than 48 hours. This provides me with enough time to answer all your questions, so do take this into consideration.

Course Assignments

1. **Participation/ Discussion:** each student is encouraged actively participate in the discussion related to the main class activity – paper critiques.
2. **Critique** (8-10 pages, double spaced, APA style, Word): each student will write critiques addressing assigned readings.
3. **Peer-review:** each student will write blind reviews to assigned peer critiques (for doctoral students only).

Grade Distribution

Critiques	7 critiques x 9 points each = 63 points
Reviews*	7 reviews x 4 points each = 28 points
Participation/open forum	9 points

Grading Scale

You are encouraged to demonstrate *knowledge of content/ issue you intend to critique, critical thinking, and communication accuracy* while completing major course assignments.

D: 91 - 100 = A	81– 90 = B	71 - 80 = C	61 - 70 = D	00 - 61 = F
M: 65 - 72 = A	57 – 64 = B	49 – 56 = C	41 – 48 = D	00 – 40 = F

How to Write a Critique

To write a critique of a text is to analyze and evaluate it, not just summarize or synthesize. A summary merely reports what the text said; that is, it answers only the question, "What did the author say?" A critique, on the other hand, analyzes, interprets, and evaluates the text, answering the questions How? Why? and How Well? A critique does not necessarily have to criticize the piece in a negative sense. Your reaction to the text may be largely positive, negative, or a combination of the two. It is important to explain why you respond to the text in a certain way. So, the critique is a rigorous critical reading of a text (e.g., article, chapter, passage). As such, it picks up where the objective summary leaves off. In fact, a critique often includes a brief summary so that its readers will be able to quickly grasp the main ideas and proofs of the text under examination. Critiques come in all shapes and sizes, but a good way to writing critically is

to plan along the following lines. First, read the passage thoroughly. Make plenty of notes, ask lots of questions, and highlight or underline anything you may wish to quote in your paper. Spend some time on this step. It is impossible to adequately critique something if you don't fully understand it.

Next, write a summary. Identify the author's main point (thesis) and list the types of proofs he or she employs to persuade the reader to believe or accept the thesis. For example, does the author use historical perspectives, quote noted authorities, provide statistical evidence, or appeal to a reader's common sense? You should also try to figure out why the author is writing, and to whom. Remember that the purpose of a paper and its intended audience can affect the way the paper is written. Now, set your own agreement or disagreement with the author aside for a moment and investigate the validity of his or her argument.

- Does the author provide complete and accurate information? Some authors may leave important facts out of their presentations in order to avoid dealing with them, or they may give inaccurate data either through ignorance or in a deliberate attempt to mislead readers.
- Does the author provide information that is relevant to the issue?
- Does the author define key terms adequately and clearly?
- Is the author's argument logically consistent?
- Is there other evidence that would support a counter-argument?

Once you have examined carefully the text you intend to critique, use the information you have collected to draft a response. Do you agree or disagree with the author's views and proofs? Be sure to discuss specific reasons why you agree or disagree with something. The critique's value as an academic document rests on your ability to say precisely why you agree or disagree. Finally, draft the critique. You should include:

- **An introduction** which introduces the passage and its author. This introduction should clearly state the author's thesis and the arguments you intend to make about it. The introduction should also provide a reader with a little background so that he or she will understand why this critique is worth reading.
- **A brief summary.** You should already have drafted a summary. Now you can include it in your draft of your critique, making sure to use adequate transitions so that the writing flows smoothly.
- **Your analysis** of the author's presentation. Present an in-depth analysis of the validity of the author's logic and use of evidence. Be sure to present your information in a form, which is easy to follow, using transitional elements whenever necessary to preserve the smooth flow of your writing.
- **Your own response to the argument.** As discussed above, you may agree or disagree with the author's views, and this is the part of the critique where you make your own views on the issue clear. Remember that your own arguments must be well-supported. You must give compelling reasons for your agreement or disagreement with the author. Discuss the limitations, weaknesses, or problems of the text.
- **A conclusion.** Evaluate the author's overall success or failure in achieving his or her purpose. Also, remind your reader of the strengths and weaknesses of the passage.

Once the critique is drafted, revise it, making sure you have emphasized the most salient points in your discussion. Check your sentence variety, your organization, and your word choice.

Is the critique all it can be? Have you edited the critique to eliminate errors in spelling, sentence structure, and agreement?

Rubrics for Critique

Criteria	Good (9 points)	Fair (5 points)	Poor (2 points)
Knowledge of Content	Solid knowledge and understanding of the issue to be critiqued is demonstrated. The article is clearly but succinctly summarized - the key points of the article are addressed.	Good knowledge and understanding of the issue to be critiqued is demonstrated. The article is clearly summarized, but some sub points are addressed along with main points. The summary is not succinct.	Weak knowledge and understanding of the issue to be critiqued is demonstrated. The article summary is unclear or overly detailed.
Critical Thinking and Argumentation	Strengths and weaknesses that are central to the key points of the article are addressed. The discussion of strengths and weaknesses take up the majority of the assignment.	Strengths and weaknesses that are peripheral to the article are addressed. The discussion of strengths and weaknesses take up the majority of the assignment.	Strengths and weaknesses are addressed peripherally or not at all. The discussion of strengths and weaknesses take up only a small part of the assignment.
Organization and Communication Accuracy	Paper is well organized, has a very clear intro, body and conclusion. The purpose of the paper is clear from the very beginning. There are no grammatical errors or typos. APA and page length requirements are met.	Paper is organized, has an intro, body and conclusion. The purpose of the paper becomes clear within the paper. There are few grammatical errors or typos. APA and page length requirements are met.	Paper is not well organized, has an unclear or non-existent intro, body and conclusion. The purpose of the paper is unclear. There are many grammatical errors and/or typos. APA and page length requirements are not met.

Professionalism

Along with basic standards of citizenship (e.g., “Student Conduct” and “Disruptive Acts Policy” in the UTEP *Catalog*), students in this course are required to display a positive attitude and professionalism. Be open to using or sharing opportunities for professional growth via Web CT Discussion Board option. In terms of written assignments, professionalism includes that all assignments be Word processed, checked for spelling/ grammar, and have any appropriate output/ graphics electronically pasted into the document.

Academic Integrity

The instructor trusts that you understand and especially appreciate that cheating, plagiarism and collusion in dishonest activities are serious acts, which erode the university’s purpose and integrity. It is expected that work you submit will represent your own effort, will not involve copying from or accessing

unauthorized resources or people (e.g., from a previous year's class), and will appropriately acknowledge (with complete citations) allowable references that you do consult. Also, do not resubmit work completed for other classes without specific acknowledgment and permission from the instructor. Violations are unacceptable and required to be referred to the Dean of Students Office for possible disciplinary action.

Copyright Notice

Many of the materials that are posted within this course are protected by copyright law. These materials are only for the use of students enrolled in this course and only for the purpose of this course. They may not be further retained or disseminated.

Disabled Student Statement

In Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, if a student needs an accommodation then the Office of Disabled Student Services located at UTEP need to be contacted. If you have a condition, which may affect your ability to perform successfully in this course, you are encouraged to discuss this in confidence with the instructor and/or the director of the Disabled Student Services. You may call 915.747.5148 for general information about the American with Disabilities Act (ADA) and the rights that you have as a UTEP student with a disability. Individuals with disabilities have the right to equal access and opportunity. It is the student's responsibility to contact the instructor and The Disabled Student Services Office at The University of Texas at El Paso.

Equal Educational Opportunity Statement

In order to create equal educational opportunities in the class, all students are expected to demonstrate respect for the diverse voices and individual differences in the class. Particularly, no person shall be excluded from participation in, denied benefits of, or be subject to discrimination under any program or activity sponsored or conducted by the University of Texas at El Paso on the basis of race, color, national origin, religion, sex, age, veteran status, disability, or sexual orientation. Any member of the University community who engages in discrimination or other conduct in violation of University policy is subject to the full range of disciplinary action, up to and including separation from the University. Complaints regarding discrimination should be reported to the University's Equal Opportunity Office. Inquiries regarding applicable policies should be addressed to the University's Equal Opportunity Office, Kelly Hall, 3rd Floor, 915.747.5662 or eoaa@utep.edu<<mailto:eoaa@utep.edu>>.