Overview of the course

This course will introduce you to practitioners’ research, a form of self-reflective systematic inquiry by practitioners (teachers) on their own practice. The goals of this research are the improvement of teaching practice, a better understanding of that practice, and an improvement in the situation in which the practice is carried out. Ancillary goals include the development of a professional community and students’ (teachers’) recognition of their own expertise.

In this course we will consider the history, definitions, and types of practitioner research and analyze a variety of perspectives on its purposes, processes, and theoretical foundations; simultaneously, we will explore processes and issues involved in doing practitioner research. Topics on doing practitioner research include an analysis of collaborative and observer forms of research, ways to identify problems to investigate, the selection of appropriate research methods, collecting and analyzing data, and ways to draw conclusions from the research. We also will examine the research reports of other teacher researchers and practitioners to analyze the models they used for the research and reporting processes. This analysis will help you develop your own “road map” for undertaking an inquiry into your own teaching—specifically an action research inquiry within an individual classroom in order to build a case of your own teaching. For teachers, action research can be a powerful guide to inform wise decisions in the quest for excellence in teaching and learning. The aim of such research is action. It is data collected to inform practice.

By the end of the course the student (teacher) will be expected to demonstrate knowledge of and ability to use action-research as a part of personal professional development and reflective practice through individually designed and conducted action research projects that culminate in a written case of his or her teaching mathematics teaching.
Course Requirements

Texts:


Selected Supplemental Readings

Assignments:

You will have five assignments across the semester. They are as follows:

1. *Class Attendance and Participation.* A significant part of this course will be class discussions of readings assigned for each week. When not leading the activities or discussions, you will be expected to participate in class discussions and activities. Participation and co-learning are important concepts for this course. Class participation includes activities such as speaking, listening, observing, sharing ideas, and reflecting. You are expected to attend all class sessions. You are also expected to read and reflect on all of the assigned articles prior to class. Therefore, come to class prepared to contribute your critical reflections of assigned readings and related material.

This component accounts for 15% of your grade. There are 14 weeks in the semester before we begin to discuss our action research projects. Each week you will have an opportunity to earn one point for attendance and participation. All students will earn one point for overall participation.

**Attendance:** (0.5 points)

**Participation:** (0.5 points)

_____ Evidence of prior reflection on articles (ability to react to and integrate articles with each other and outside experiences)

_____ Engaged in class dialogue (speaking and active listening)

2. *Class Discussion Facilitator* (date and reading to be determined). One time during the semester you will lead the class discussion, as an expert, of the assigned readings, either from one of the required texts or from supplemental readings.

This component accounts for 15% of your grade. Criteria for evaluation of discussion leader facilitator will be:
Discussion Questions: (10 points)
_____ Article carefully and closely read and analyzed
_____ Thoughtfulness of questions--key points identified
_____ Handout on themes and issues painstakingly prepared and typed
You should provide a copy for each member in class on the night of your discussion (two copies for me).

Group Discussion: (5 points)
_____ Extent to which group dialogue was stimulated
_____ Extent to which discussion encouraged critical analysis of articles
_____ Extent to which discussion was kept on track

3. Reflective Writing. Writing can be a powerful tool for thinking about and learning mathematics. We will experiment with writing in our course as a vehicle for reflecting on what we are thinking and learning about the themes and issues around which the course is organized. You will write each week about your own sense-making of the ideas. The aim is to provide a formal way for you to critically reflect about the ideas that emerge through the course readings and activities. You will relate the ideas from the readings to the development of your action research project. I will collect your writing each week. I will respond to your writings with my own written feedback. I would prefer the reflective writings done out of class be typed.

This component accounts for 15% of your grade and will be evaluated according to the following criteria:

Writing: (15 points)
_____ Submitted on-time
_____ Well-organized
_____ Evidence of critical analysis of course materials and experiences
_____ Reflections on readings, experience in community, and personal challenges uncovered
_____ Reflections on relating readings and activities to preparation of teaching case

4. Action Research Project and Written Case. The major assignment for the course will be the completion of a action research project undertaken in an educational setting in which you are engaged in professional practice— an action research project that you will implement in your school or classroom. You will investigate questions of interest to you in your practice as an educator.

For this assignment you will define, develop, and undertake an action research project. You will build a case of your own teaching from this action research. The choice of topic is up to you, but you should choose something significant to mathematics learning and/or teaching. Some aspect of the teaching/learning process should be the subject of inquiry. This project will include an appropriate topic, the relevant literature review, the development of instruments and methods, data collection, and analysis. The written product will be a paper of 20-25 double-spaced pages. Your paper should include the following elements: a) an introduction which states the topic you researched; b) a review of the relevant literature; c) a
description of your methods of data collection and analysis; d) a presentation of your major findings supported with evidence; e) a discussion of your findings and how you will use them.

As to the review of the literature, once you have chosen your "area of focus" for your action research project you will conduct a review of related literature. Your review should be approximately 5 pages (a rough guide) and include a minimum of five to ten current (within the last five years) journal articles. Remember, you are trying to avoid reinventing the wheel! Avoid selection of the first five articles you find unless you have some basis for comparison. You will be able to undertake an electronic search of the literature by accessing ERIC online. You will then be able to request copies of journal articles either through the library or through the respective ERIC Clearinghouses. START THIS ASSIGNMENT EARLY! The review of relevant literature should include 1) What I learned about my topic by reading the writings of others? 2) What different sources are for useful literature? 3) Synthesis of the relevant literature you reviewed. (Review of the literature will be due March 1)

Keep a research notebook in which you regularly (at least weekly) record your experiences in carrying out your research project. The purpose of the notebook is to help you reflect on your practices, formulate ideas for action or changes in practice, and evaluate those actions. You will be using your research notebook as a data source for writing an analysis of your action research project.

Plan to write the text for a short speech (5-10 minutes) to explain why the topic of research you have identified for your project is educationally important. It should include references to the appropriate research literature. This speech is due to be presented in class on March 8. In the short speech you should explain the following:

What to consider for your action research project?
° Research Purpose—Why is this an important area of study, and what do I want to be able to do?
° Context of Activity Setting
  a) Description of school and/or community
  b) Where will I focus my attention - what part of the day, school year, school, etc.?
  c) What aspects of practice will I study - what specific teaching/learning engagements will I investigate? If I am implementing new practices, what are they (describe in detail)?
  d) Description of the specific activity
° Data Collection
  a) What information/data do I already have that informs my study?
  b) What information/data will be natural parts of the element of practice I plan to study?
  c) What additional information will I need to collect?
  d) Description of the various types of data that will be collected
° Data Analysis and Findings—How might I go about making sense of my data? How will I organize it? What will I do with my findings?
° Time Line Plan for implementation of practices and phases of study
In order to receive feedback on your on-going efforts, a 2-3 page interim report of your project including a statement of your thematic concern or general idea for inquiry (with items listed above) should be submitted to me on the day of your short speech (March 8).

You must use APA (American Psychological Association) style of writing in all aspects of the research report.

The final paper is due on May 3.

This component accounts for 45% of your grade and will be evaluated according to the following criteria:

_____ Submitted on-time
_____ Proper length
_____ APA formatting
_____ Literature review
_____ Well-defined problem
_____ Data Collection and analysis
_____ Reflection on findings

5. Oral report of action research project/teaching case. (last class meeting and final exam night). During the last class, expect to talk both about your paper and the process of constructing it. You will have 15 minutes for your report. Your oral presentation should include how you hope to share your research findings within school (i.e., local or national conferences, presentations, written forms - policy brief, newspaper article, journal article). What forms will be most convincing and appropriate to key stakeholders?

This component accounts for 5% of your grade and will be evaluated according to the following criteria:

_____ Clear description of problem researched, relevance of literature read, data collection and analysis
_____ Clarity and organization of visual aids
_____ Discussion of dissemination of findings

Course Evaluation

Your final grade will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Attendance and participation</td>
<td>15</td>
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<tr>
<td>Class discussion facilitator</td>
<td>15</td>
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<tr>
<td>Reflective writing</td>
<td>15</td>
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<tr>
<td>Action research project and written case</td>
<td>45</td>
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<tr>
<td>Oral report of action research project/teaching case</td>
<td>5</td>
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<tr>
<td>Final Exam</td>
<td>5 points</td>
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<tr>
<td>TOTAL</td>
<td>100 points</td>
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Note: I expect assignments to be completed on time even if you are absent. Assignments are due at the beginning of the class period. No assignments will be accepted after May 3, 2006.

The grading scale will be approximately as follows:

<table>
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<tr>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 - 100</td>
<td>A</td>
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<tr>
<td>80 - 89</td>
<td>B</td>
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<tr>
<td>70 - 79</td>
<td>C</td>
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<tr>
<td>60 - 69</td>
<td>D</td>
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Students with disabilities: NIU abides by Section 504 of the Rehabilitation Act of 1973 which mandates reasonable accommodations be provided for qualified students with disabilities. If you have a disability and may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Center for Access-Ability Resources (CAAR), the designated office on campus to provide service and administer exams with accommodations for student with disabilities. The CAAR office is located on the 4th floor of the University Health Services building (815/753-1303).

Reminders: General Classroom Etiquette
* Turn off pagers, phones, etc.
* Plan to arrive on time, stay to the end of class, and be in the classroom for the entire session
* Only students who are registered for this course should attend this class

Class Schedule

Week 1 (Jan. 18) Course overview and introductions. Getting started! What is research?

Week 2 (Jan. 25) Understanding Practitioner Research, Cases of Mathematics Teaching and Learning

Week 3 (Feb. 1) Understanding Practitioner Research, Cases of Mathematics Teaching and Learning

Week 4 (Feb. 8) Understanding Practitioner Research, Literature Review, Cases of Mathematics Teaching and Learning

Week 5 (Feb. 15) Deciding on an Area of Focus, Reviewing the Literature, and Creating a Research Plan, Cases of Mathematics Teaching and Learning
Week 6 (Feb. 22)  Data Collection Considerations, Cases of Mathematics Teaching and Learning

Week 7 (Mar. 1) Data Collection Techniques, Cases of Mathematics Teaching and Learning, REVIEW OF LITERATURE DUE

Week 8 (Mar. 8) Analyzing and Interpreting Data, Cases of Mathematics Teaching and Learning, ORAL AND WRITTEN STARTING POINT SPEECHES DUE

Week 9 (Mar. 22) Analyzing and Interpreting Data, Cases of Mathematics Teaching and Learning

Week 10 (Mar. 29) Writing Up Research, Cases of Mathematics Teaching and Learning,

Week 11 (Apr. 5) Cases of Mathematics Teaching and Learning

Week 12 (Apr. 12) Cases of Mathematics Teaching and Learning

Week 13 (Apr. 19) Cases of Mathematics Teaching and Learning

Week 14 (Apr. 26) Cases of Mathematics Teaching and Learning

Week 15 (May 3) ACTION RESEARCH IN ACTION. FINAL PROJECT DUE. ORAL REPORT OF RESEARCH DUE.

Week 16 (May 10) ORAL REPORT OF RESEARCH CONTINUED. Final Exam

**January Readings Schedule**

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 18</td>
<td>Overview of Course</td>
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<td></td>
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<td>Powerful Designs for Professional Development (pp.53-60). Oxford, OH:</td>
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<td>National Staff Development Council.</td>
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<td>Session</td>
<td>Date</td>
<td>Topic</td>
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March Readings Schedule


April Readings Schedule


May Readings Schedule