

## DRAFT SYLLABUS

Winter 2002  
ED 898-005

### PROFESSIONAL DEVELOPMENT SEMINAR IN MATHEMATICS EDUCATION

**Instructor:**

	<b>Deborah Ball</b>
<b>Office phone</b>	734-647-3713
<b>Cell phone</b>	734-972-4793
<b>Email</b>	dball@umich.edu

**Group email:** mathedprosem02@umich.edu

**Class meetings:**

Thursdays, 4 – 6 pm

January 31, February 7, February 21, March 14, March 21, April 11, April 18

Room 2224 School of Education Building

**Course URL (CourseTools):** <https://coursetools.ummu.umich.edu/2002/winter/educ/898/005.nsf>

We will be using this CourseTools website to post assignments, exchange documents, discuss issues, raise questions, and, in general, facilitate our communication and support our learning.

**Course Overview**

The purposes of the professional development seminars are to provide space for the development of specific professional and scholarly practices and knowledge. Examples might include writing, reviewing manuscripts, making presentations, writing book reviews or commentaries intended to be read by a general public, developing familiarity with common resources and literatures.

This term, our focus will be on reading. We will consider how professionals in mathematics education read, and for what range of purposes. Graduate school — and scholarly work — demand a volume and flexibility of reading that can provide a steady stream of resources for thinking and developing ideas. But it can also be overwhelming, for it involves reading literatures that may be quite different from anything you have read before, and require a fluency and rate of reading that is challenging. You are encountering vocabulary and genres that may be new to you, and that require different skills and language from those required in your previous reading. Although you might not have expected this, learning to read in new ways, and to develop a sense of taste about good writing, exposition, analysis, and argument, is thus an important part of your development.

We will work on several fronts. The work we will do is intended to afford you opportunities to gain a broader familiarity with what there might be to read. We will browse, investigate, and compare major journals that publish articles on mathematics education. Additionally, we will explore and develop a repertoire of ways of reading for different uses. We will do this by exploring and experimenting with different methods, strategies, and approaches to reading different kinds of texts, for different purposes. Finally, we will investigate alternative reasons and ways to make records of one's reading.

This seminar is also designed to help you cultivate practices and stances that contribute to disciplined scholarly and professional work. These include how you think, analyze, argue, and write, how you keep track of your ideas as well as others' and ours, and how you use texts, discussions, interactions, people, and experiences, to help yourself develop. It also involves developing new practices as a learner.

The course also serves as an opportunity for you to build and participate in an intellectual community with others in the mathematics education area of the graduate program. Each of you comes to this class with different experiences, interests, perspectives, and expertise. Who we are and what we bring to the class can be resources for the course, if we learn to make use of them, and of one another. The project of becoming familiar with some of the major periodical publications in our field, and also of developing specific practices for, and of, reading, is designed deliberately as a common endeavor. If we are successful, each person's learning will be enhanced by the work of others in the group.

Building the culture of the class so that genuine inquiry is possible will take all of our efforts to make the seminar a context in which in which people listen and are listened to, in which evidence matters, in which thoughtful questioning of one another's claims is desirable, and in which alternative perspectives and interpretations are valued. How we listen to others' reactions to our ideas, accommodate critique and questions, change our minds and revise at some times -- all will affect the intellectual culture of the class.

We therefore will need to work attentively on norms for the class. Listening carefully, treating ideas with respect and interest, raising and responding to questions, sharing the floor — all these will matter in constructing an environment where satisfying and challenging intellectual work can take place.

### Course Tasks

- 1) **Investigating mathematics education in journal publications:** We will investigate a set of major U.S. and international mathematics education journals. We will look at issues published over the past 20 – 30 years, and examine what sorts of topics are addressed by whom, in what ways. We will seek to find out whether and how the discourses of these different journals vary and who their intended communities — audience and writers — seem to be.

Because this sort of investigation entails some of the general skills of inquiry, this provides us with an opportunity to learn to be deliberate and explicit about how to read in this survey mode. To do this, we will design a working framework of questions together, and will practice using it on one main journal. Using our provisional framework, you will then explore another journal in a group of two or three people, and design to make available to the rest of the group what you have learned about your particular journal.

The journals that we will explore include:

- a) *Educational Studies in Mathematics*
- b) *For the Learning of Mathematics*
- c) *Journal for Research in Mathematics Education*
- d) *Journal for Research in Mathematics Teacher Education*
- e) *Journal of Mathematical Behavior*
- f) *Mathematics Thinking and Learning*
- g) *Récherches en didactique des mathématiques*
- h) *Teaching Children Mathematics (Arithmetic Teacher)*
- i) *Middle School Mathematics*
- j) *Mathematics Teacher*

Because a substantial amount of mathematics education research is published in other journals, we will also investigate a sample of educational research journals that are not focused exclusively on mathematics and explore the sorts of mathematics-related research that appears on their pages.

Journals that we will examine might include:

- a) *American Educational Research Journal*
- b) *Cognition and Instruction*
- c) *Elementary School Journal*
- d) *American Journal of Education*
- e) *Teaching and Teacher Education*

Using our common framework, we will, in groups, explore different journals and then share what we have learned in some common format that allows for comparisons. We may consider the possibility of assembling some basic information about the journals we study in a form that could be accessed and used by other graduate students in our program.

- 2) **Developing new practices of reading and making records of one's reading:** We will learn about and experiment with a few new ways to read texts of different kinds for different purposes. For example, we will work on skimming: What are ways to read very quickly, with your eye on the main points or argument or gist of an article? We will try out some different methods for skimming. We will explore some other approaches as well.

Thought and imagination are stimulated by reading varied material. This means both reading broadly within education research, beyond mathematics education -- for example, work in philosophical foundations, history of education, and research on teaching. Moreover, reading in other disciplines is also important: organizational theory, sociology, gender studies, history and philosophy of mathematics and other disciplines. But scholars also read material that is part of general culture: good news papers, literary magazines, popular scientific journals, fiction, and biography, and more. Cultivating -- or maintaining -- the habit of a broad diet of reading is an important resource for thinking in your own specialized domain. We will exchange ideas this term about what else we read, and offer one another ideas of places to go to find other things to read.

Because reading affords such a rich opportunity to learn and to assemble resources that one might use and also learn from in the future, making records of what you have read-- in and beyond your own field -- is an important professional practice to develop. Many approaches exist, and we will examine some different ones, and discuss what each might afford. We will also consider practical issues of managing these different approaches.

As part of this work on practices of reading, we will interview a small number of faculty members who read extensively, and who manage their reading in different ways. We will develop an interview protocol together -- also something to learn to do -- and conduct the interviews in pairs. These interviews will produce useful insights for our work, and we will decide on a format for representing what we learn from them so that we can share them in usable ways.

### Course Requirements

1. Participation in class: Because we are treating this as a professional development seminar, every person's participation is important. One major source and context of your learning is one another -- your experiences, questions, ideas, interests. In many ways, having a course like this is a luxury -- many programs do not offer such a course. It is important that you treat the seminar as a serious commitment, both in terms of being here every week and being here on time, as well as being prepared for and engaged in class. We will begin promptly at 4:10 p.m. and will end no later than 6:00 p.m.
2. Small group investigation of a journal or journals: You will work in a small group to explore one journal over 20 years or so. Based on your inquiries, you will prepare and make a short presentation about this journal. Each group will also prepare some archival record of what your investigation yielded and we will organize this as a

resource for other graduate students and faculty interested in mathematics education publications.

3. Interview of an experienced scholarly reader: You will interview a faculty member about his or her practices of reading. Based on that interview, you will extract ideas that could be useful to the group and represent them for others in a usable form. We will plan and design how to do this together.
4. Developing practices of reading: You should experiment with some different strategies for reading and for keeping records of your reading. Along the way, I am asking you to make a record of your own development as a reader this term. What do you try, and what do you find useful? What do you not find useful? How does what you read change across the term, and how does that affect how you read, and how you feel about it? Please turn in this record, annotated with your reflections on your own development, and where you want to develop more next. I am asking you to do this at two points this term: March 14 or 21, and April 25, so that I can offer help or ideas with what you are doing.