Teaching and Learning Mathematics in Context

Course Facilitator: Susan Deese, UNH

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Course Description: Teaching and Learning Mathematics in Context provides teachers with the opportunity to design a personal professional development plan in mathematics while earning two graduate credits per semester in mathematics education.

Course Meetings: The course facilitator(s) will visit the school 8-10 times during the term/semester to work with individuals or teams of teachers, assist with planning and teaching, and provide coaching. Four times during the semester, two-hour-long whole group meetings will be held at the end of the school day. At these times, the course facilitator may conduct seminars, direct content lessons, facilitate roundtables, provide feedback, or otherwise support instruction as appropriate to the needs of the participants.

Course Expectations:

* Reflective Writing- Participate in a *weekly* journal entry communication, reflecting on the mathematics being taught, how it is taught, and student reaction.
* Participation- Attend and participate actively in all after-school sessions.

Participate in at least one classroom or individual coaching cycle. Participate in at least one individual or small group planning session.

* Course Readings- Readings will be provided as appropriate to group, individual or school goals. It is expected that participants will read and reflect upon the articles, and show evidence in areas such as journals, projects, or group discussions.
* Personal Goal Setting- Agree to work with the course facilitator in their classroom settings on individual goals (in conjunction with project below). Articulate those goals in writing, receive peer/instructor feedback, and proceed.
* Professional Development Project- In consultation with the course facilitator, develop and complete an individual professional development project. Implement your project and evaluate/reflect, share results. (See note below.)

**DETAILS:**

PROJECT:

As part of your involvement in this course, you will be asked to work on a project. This project could take many forms and should be planned around the goal(s) you’ve chosen to address. The following presents some broad ideas for you to consider as you plan for and develop this work. They are meant only to serve as a jumping off place, not as the only possible ideas. It is hoped that this project will serve as an opportunity for you to present some kind of “evidence” of growth you have made in mathematics teaching this semester. Participants will have the opportunity to share results/experiences.

Possible Projects –

* Write up one of more lesson plans that include mathematical activities you may not have presented to students in the past. These may be from new resources you are exploring or lessons you have created. Keep in mind the NH Curriculum Mathematics Framework as you are planning the lessons.
* Consult one or more of the NCTM journals (*Teaching Children Mathematics, Teaching Mathematics in the Middle Grades, Mathematics Teacher*) and locate articles of interest. Write a short paper discussing ideas and activities you’ve tried in your classroom as a result of reading these articles.
* Plan and present a demonstration mathematics lesson in your classroom. You could videotape the lesson and share with other course participants and critique it yourself. It would be nice if you have the opportunity to conduct the lesson again with the same or a different group of students. Share this experience in some form with the group. Write a short paper describing process and reflecting on the lesson.
* Decide on a method for communicating with your students’ parents. Choose a mathematical happening in your classroom about which to communicate. Share with the group the form you decide upon, i.e. a newsletter, in-class parent activity, family math night, etc. Write a short paper describing the method and reflecting on the experience.
* Choose one student in your class to focus on as a case study. Record observations, collect work, conduct interviews and write a short paper discussing what you learned.
* Develop a research question relating to your mathematics classroom. Collect data throughout the semester and write a short paper describing your findings.
* Other

MORE ON JOURNALS:

Some Journal Prompt Ideas:

\*What worked well in a mathematics lesson you taught this week?

\*Why do you think it happened the way it did?

\*What concept do you hope to teach your students in the next week? What kinds of challenges will you face?

\*What materials are you using (or do you wish you had) to teach a particular concept?

\*How have you used manipulatives/technology/literature to enhance the mathematics learning in your classroom?

\*Which kinds of students do you feel seem to really benefit from your teaching style?

\*How are you communicating with parents about the mathematics taught in your classroom?

\*How have you used mathematics in other curricular areas?

\*What assessment methods are working for you right now? Written responses? Conferences? Observations? Checklists? Rubrics?

\*Write about any reactions you have to a professional article from a mathematics journal.

\*Is there a student in your class who is thriving? Struggling?

\*Where have you shown growth in your teaching?

COACHING:

A three-step coaching cycle is suggested. We will meet to go over the lesson you have planned. I will visit your classroom collecting data in the area(s) you suggest. We will have a reflecting conversation after my visit to look at the data and discuss instructional strategies.

POSSIBLE GOALS for COACHING WORK:

\*Use literature for teaching mathematical concepts.

\*Develop more effective assessment methods.

\*Improve an aspect of classroom management.

\*Explore equity in my classroom (gender, ability level, personality, learning style).

\*Use manipulatives to support concepts from the textbook.

\*Experiment with different ways to group students.

\*Develop a system for students who complete their work ahead of others.

 \*Work on ways to better meet the needs of all ability levels in my classroom.

\*Explore ways to use writing in the mathematics classroom to improve learning and/or assess students’ understanding of concepts.

\*Other.

*This course may be repeated for additional credit.*