

Classroom Interactions

The Classroom Interactions course continues the process of preparing students to teach mathematics and science in upper elementary and secondary settings. The specific objectives of this course are to:

- Demonstrate to students how learning theories (from the Knowing and Learning course) manifest themselves in instructional settings (usually classrooms), allow students to design and implement instructional activities from their own understanding of knowing and learning mathematics and science, and evaluate the outcomes of those activities based on evidence from student artifacts
- Provide students with frameworks for thinking about equity issues in the classroom and larger school settings and their effects on learning and provide students with strategies for teaching diverse students equitably

Classroom Interactions begins with the assumption that students have conducted and analyzed a number of clinical interviews in science and mathematics as part of Knowing and Learning. Students must understand that the process of concept acquisition must encompass learners' prior formal and informal knowledge, the importance of task construction in eliciting student thinking, and the critical role of reflection and language in the construction of knowledge. Whereas in Knowing and Learning, students study the meaning behind understanding a particular content area from an individual perspective, in Classroom Interactions, the perspective shifts to studying how classroom events might promote or discourage learning mathematics and science and student equity.

In Classroom Interactions, students typically participate in several learning activities and consider how the activities reveal and change their own understanding before implementing similar activities in high school classrooms. These activities allow students to evaluate their own learning and understanding of a subject. Bringing together students from different disciplines (for example, science, math, and computer science) allows them to see their subjects from the perspective of a novice and to consider how different perspectives might affect the same curriculum. Participating in learning activities also allows students to consider equity issues. For example, is it fair for only the fastest students to contribute to an activity? How would learning be different if all students were not only allowed but required to participate? Is it fair that some students are learning in a language that is not their first? The class considers the implications of deficit thinking (for example, blaming the student) in classroom outcomes.

The culminating activities of the course are the opportunities for students to teach in a high school and to learn whether they enjoy and are good at it. A major component of the Classroom Interactions course is the opportunity for students to reflect on and evaluate their own work as teachers.

Course Procedures: Classroom Interactions

The following represent some of the typical Classroom Interactions activities. They generally take place in three parts:

- The first teaching session involves direct instruction. Students are assigned a topic from the classroom teacher and lecture individually. In some cases, students submit work products from the high school students and evaluations completed by the high school students.
- The second teaching session lasts two or three days. During this session, master teachers provide students with activities aligned with the Instructional Planning Guide (IPG) and negotiated with high school instructors.
- The final teaching session lasts three full days. Students design their own lessons and teach them.

Course Objectives: Classroom Interactions

Students Will Be Able To:

Compare models of teaching and use various models of teaching, including direct instruction, inquiry, and cooperative groups, as appropriate, to design three high school lessons

Plan (with a partner or partners) multiple-day lesson plans on assigned subjects in high school math and science

Teach (with a partner or partners) multiple-day lessons in high school math or science classes

Evidence (Student Products)

Written justification of lesson plans
Participation in discussions evaluating teaching
Use of various models (both in class and during field teaching)
Observations by mentor teacher and class instructor

Lesson plans, including essays justifying the plans and responses to reviewer comments
Peer and instructor evaluations of practice teaching in the Classroom Interactions class
Completion of appropriate sections of the preliminary portfolio

Videotapes of teaching
Observer (i.e., classroom teacher, Classroom Interactions instructor, Classroom Interactions teaching assistants, and master teachers) comments on teaching

Analyze their own and others' teaching in terms of how the instruction develops the content understanding of the students involved

Written analyses of teaching with video samples and other student artifacts
Presentation and discussion of video samples and other student artifacts in the Classroom Interactions class
Development of a knowledge map for assigned lessons in high school math and science classrooms
Completion of appropriate sections of the preliminary portfolio

Analyze their own and others' ability to address equity issues in their teaching (e.g., effects of instruction on all students, including those learning in a second language, those with disabilities, those from minority cultures)

Written analyses of teaching with video samples and other student artifacts with regard to equity issues
Presentation and discussion of video samples and artifacts of teaching
Completion of appropriate sections of the preliminary portfolio

Become familiar with policies and classroom strategies regarding students of all kinds, in particular the Texas Essential Knowledge and Skills and national science and math standards

Participation in discussion and Internet postings regarding policies concerning students who have diverse needs

Read selected articles documenting theory and research regarding classroom interactions and broader educational policies and their effects on content understanding and equity for all students

Participation in discussions of readings
Posting of commentaries on the Internet
Written analyses of readings

Become familiar with relevant types of teaching technology and analyze how technology can affect classroom interactions

Artifacts produced by the use of such technology in the Classroom Interactions classroom
Participation in discussions of the effectiveness of technology
Written analyses of the uses of technology
Completion of appropriate sections of the preliminary portfolio