

Instructional Development Office
Memorial University of Newfoundland

Peer Observation

Dr. Margarita Kondratieva

Observer: Maureen Dunne, PhD

On Wednesday, September 10, 2008, I was invited by Dr. Margot Kondratieva to observe the second session of the semester in her course *Education 4161: The Teaching of Mathematics in the Intermediate and Secondary School*. Students in this class are in a post-degree intermediate/high school B.Ed. program. The class was 75 minutes long and there were approximately 37 students in a classroom furnished with tables and chairs.

Introduction and Setting the context: Margot introduced the class with confidence and as soon as she began speaking, students turned their attention towards her. She began by reviewing some of the major points of the previous class, connecting the material and the activity back to the previous session. She clearly stated the goal of this particular class: to learn and experience the elements of a successful lesson plan.

Content: Margot described the elements of a successful plan, using both a handout distributed to students and an overhead projection image. She was animated in her remarks to students and invited them several times to dialogue with her about the descriptive elements she had posted. She began with an overview of a teacher's pre-class preparation requirements for an effective lesson and offered many illustrations.

She then presented a sample lesson plan that she had developed as a model for this particular class and she brought students through that lesson, transforming the plan into an experiential learning opportunity. She related her lesson to the Atlantic Provinces curriculum framework and the Key Stage Curriculum Outcomes – an important connection for future practitioners. [She did note that the mathematics outcomes are currently under revision by the provincial Department of Education.] Margot fully engaged students in the activities she had planned. She asked them to imagine they were grade nine students and she used manipulatives to demonstrate a math lesson appropriate for that grade, one that involved both geometric applications and an algebraic solution. She started with a basic problem and a demonstration with square wooden blocks. She asked students to solve the basic problem and then she gave a variation on that problem in which the solution was not immediately evident and involved some fairly deep thinking. Using large playing cards, she sorted the class into random groups of four and gave them square ruled paper and asked them to solve the problem she had posed, and to record the drawings and strategies they used to figure it out. The class was animated and engaged, working hard to arrive at a competent and elegant solution to the problem.

Margot waited for a few groups to arrive at the right answers and then invited the whole group to help her populate the cells with their calculated data using a table/grid on the blackboard. The correct answers emerged quickly from the class and they eventually created the correct formula solution. The class described some additional real-world applications for the formula that emerged.

In de-briefing this exercise, Margot asked students several questions that required meta-cognitive thinking on their part, and she defined the Brunerian terms for the various approaches they had tried: enactive, iconic, and symbolic. She also encouraged them to develop extensions to the activities, creating their own games and activities that built upon the mathematical knowledge they had acquired in the class lesson and to create a resource for themselves that they could use later in their own teaching.

Throughout the lesson, Margot's love of her discipline was evident and she spoke frequently of the 'magic' of math, its search for 'truth', for creation of new knowledge, for 'proof' of the validity of the approaches that were applied in the class. She is obviously quite enthralled with the beauty of mathematics and in conveying that value to these emerging teachers, it seems that me that she must inspire them to pass on that love of the discipline to their own students.

Classroom environment: It was evident that students were very much engaged in the class and that they appeared to have a great deal of respect for Margot's mathematical knowledge and her animated love of both math and math teaching. She worked hard to create a warm, positive learning environment in which students could feel assured that the professor really wanted them to be successful and was willing to support them in their learning. There was frequent spontaneous laughter during the class period; students were co-operative and engaged for the entire session.

General remarks: Dr. Kondratieva was extremely well-prepared for this class. She believes in integrating real mathematical exercises into her educational methodology classes, combining curriculum content and educational approaches. She informed me after class that she is working on the development of meta-cognitive exercises that will require developing math teachers to think about the thinking that goes into solving math problems and in so doing to become more student-focused in their teaching.

She had a well developed lesson plan with clear objectives, brought manipulatives and other working materials into the class, distributed carefully developed handouts and used the visual imagery of an overhead projector as well as the blackboard. Her eclectic mix of strategies would have appeal for a variety of learning styles. She employed the instructional strategies of short pieces of lecture material as well as engagement of the students in experiential learning and problem-solving in both small and large group activities. Her speaking voice projected well to the back of the room and her command of the spoken language was excellent. Her communication skills, augmented by her animated expressive manner of working with the students, were most effective. My conclusion at the end of the session, supported by my previous knowledge of her interest in effective instruction, was that Margot is a knowledgeable, caring, conscientious teacher who is committed to providing quality learning experiences for her students.



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