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EDCI 557: Integrating Technology in the Elementary Curriculum

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EDCI 557: Integrating Technology in the Elementary Curriculum is taught within the Elementary Education Program in the Graduate School of Education at George Mason University (GMU). The course is designed to enable students (or "interns") to develop connections between various content areas and to create and teach interdisciplinary units.

A major assignment for this course is the development and teaching of a week-long interdisciplinary unit that integrates technology. This assignment allows the interns to take abstract, theoretical ideas presented in the course and apply them in teaching K-6 students. Since the interns are required to teach the unit plan they designed, they go beyond learning technology skills and demonstrate the ability to plan and teach with technology.

As part of this assignment, interns are required to administer pre- and posttests and to analyze the results. They then describe the learning outcomes and implications for future planning. As a result of this assignment and this course, interns are graduating from GMU's program with the knowledge and skills needed to use technology, confident in their ability to integrate technology, and better able to teach with technology.



Elementary Education Program

The Elementary Education Program in the Graduate School of Education (GSE) at GMU is built around a professional development school (PDS) model. The PDS program begins each spring and concludes with licensure in four academic terms. During the first spring term, interns participate in 30 clock hours of field experience and take two late-afternoon or evening courses. The summer term is compacted and requires field experiences and course work during the school day.

During the final two terms, interns must attend day-time classes 1 day a week and work in schools 4 days a week. Technology is infused throughout the Elementary Program. All courses integrate technology as part of the requirements, and interns use Blackboard, the GSE's online discussion area, to extend the classroom learning.

During the final semester of the program, interns enroll in four courses for 10 credit hours.

Description of the Course

Although EDCI 557 is listed as a technology course, technology is not its main focus. The course was designed to serve as a vehicle to help the interns make connections between the various methods and content courses they have taken. Therefore, it is offered at the end of the program, after interns have completed their methods courses. EDCI 557 focuses on the development and implementation of curriculum and instruction in the elementary classroom, program evaluation, and instructional and organizational implications. It is designed to be interdisciplinary, with several different content areas addressed throughout the various assignments.

A heavy emphasis is placed on the integration of technology, and the interns are required to use a variety of technology to complete assignments. The course

syllabus can be found at <http://mason.gmu.edu/~dspragu1/edci557pds.html>. International Society for Technology in Education (ISTE) National Educational Technology Standards and Virginia State Technology Standards for Instructional Personnel (TSIPS) addressed by this course are listed on the course syllabus.

Students complete a variety of assignments throughout the course. They conduct software reviews, create an instructional video using i-Movie, complete a WebQuest that integrates Social Studies and Language Arts, create a hypermedia project to use in their classrooms, and design and teach a 1-week interdisciplinary unit that integrates technology. (All assignment descriptions, rubrics, and examples of interns' work can be found on the website created for this submission— <http://mason.gmu.edu/~dspragu1/itec.html>)

In addition, the course addresses Assistive Technology, assessment methods, and differentiation. These areas are addressed as part of the Work Sampling that accompanies the Unit Plan.

Relationship to Internship

Although all assignments in the course are important, the relationship between EDCI 557 and the Internship provided a unique opportunity. While enrolled in EDCI 557, the interns are placed in PDS elementary schools for the entire semester. They take courses on campus 1 day a week and are in the schools the other 4 days. While in the schools, they assume a greater role in planning and teaching lessons as the semester progresses. During the month of April, the interns do their independent teaching, in which they assume total responsibility for the classroom.

Interns are required to design a week-long unit plan that is interdisciplinary (must include all of the four major content areas) and integrates technology (at least two different types of technology or software programs must be used by the K-6 students). This unit plan is turned into the instructor midway through the course. The instructor provides the intern with feedback on the lesson, and the intern is allowed to revise the unit based on this feedback.

During their independent teaching, interns are required to teach the unit they have designed. They are also required to complete work sampling in order to demonstrate the effectiveness of the unit. Interns administer a pretest prior to teaching the unit. They also identify two students whom they wish to focus their attention on. As the interns write up the work sampling results, they must discuss the unit from the perspective of these two students and show how they (the interns) differentiated their instruction to meet the needs of these learners. As they teach the unit, they collect the various artifacts produced by these two students. At the end of the unit, the interns administer a posttest and then compare the results to the pretest.

For the work sampling requirement, interns submit a write-up that describes the school, classroom, and the two focus students. They discuss in the write-up the pre/post test results of the entire class and the two focus students. Accompanying

this write-up are the pre/post tests of all students (plus a graph of the results) and all work submitted by the two focus students. Interns then write a reflection about the unit and what they could do to improve the unit. They also address the implications for future planning.

Results of This Assignment

During spring 2002, when this course was first taught, interns' scores on this assignment ranged from 6-18 out of 20. The mode score was 17. During spring 2003 the scores ranged from 15-24 out of 25. The mode score was 23. Technology activities included digital and video cameras, Inspiration/Kidspiration, Kid Pix, a variety of simulations and websites, Lego Dacta Kits, and clay animation.

The course allows the interns to take the abstract, theoretical ideas presented in the course and apply them in teaching K-6 students. Since they are required to teach the unit plan they designed, they go beyond learning technology skills and demonstrate the ability to plan and teach with technology. For this unit plan they are not allowed to use technology only as a presentation tool, but instead, the technology must be used by their students. (They are allowed to use technology for presentations, but they must still have two uses of technology by the students.) This ensures that the ISTE and TSIPS standards requiring the planning and teaching of appropriate lessons are addressed.

This course also meets performance-based assessment required by the National Council for the Accreditation of Teacher Education (NCATE). The work sampling requirement is the performance-based assessment for the Elementary Education program. Interns who do not do well on this assignment generally do not pass the course and are not put forth for licensure (few interns do not do well, and usually they are students who have had difficulty throughout the program). Therefore, this is a major assignment, not only for the course, but also for the Elementary Education program.

As a result of this assignment and this course, interns are moving beyond technology skills and toward integration. They are graduating from GMU's program with the knowledge and skills needed to use technology, confident in their ability to integrate technology, and better able to teach with technology.

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