

Innovative Instructional Fellowship Program (2010-11) Application

A one-hour introductory workshop will be held to provide more detailed information about the Innovative Instructors Fellowship program and the application process. Applicants are required to attend one of the intro sessions. Please RSVP to Linda Griffin (lgriffin@educ.umass.edu)

- Wednesday, March 24, 2 p.m., Furcolo 225
- Thursday, April 1, 2 p.m., Hills South 483

Application deadline: Monday, April 14 at 5 p.m.

Applications should be submitted in electronic form to Jane Clukay (jclukay@educ.umass.edu).

For additional information about the Innovative Instructional Fellowship contact: Linda Griffin (lgriffin@educ.umass.edu)

IIF Application

Name: Portia C. Elliott

Department: Teacher Education and Curriculum Studies

Email: pelliott@educ.umass.edu

Phone: (413) 545-3421

Brief description of the proposed course/program:

(All fields will expand to accommodate your text.)

Emerging Web 2.0 technologies and the promise that these media hold for “distributed learning”(Dede, 1996), will be introduced into the Principles and Methods for Teaching Elementary School Mathematics (Educ 463) course that I currently teach to elementary education minors. By using Web 2.0 technologies and by capitalizing on the concept of “knowledge webs”(Dede, 1999), students in this course will have distributed access to experts, archival resources, authentic environments, and shared investigations while extending and deepening their current mathematical content and while deepening their understanding of the mathematics they have to teach in early childhood and/or elementary learning environments.

How will this course/program meet the stated goals of the IIF Fellowship program?

Educ 463 is a recommended methodology course for the education minor and a pre-requisite course for students preparing to enter the Collaborative Teacher Education Program (CTEP). The proposed revamped course has the potential of addressing the stated goals of the IIF Program in the following ways:

First, it would be structured around a new "telepresence." By offering this course online during the summer session, virtual communities of learners would be able to avail themselves of this learning opportunity. The 80-100 students that enroll in that course each year could be expanded to accommodate more students willing to engage in synchronous and asynchronous learning experiences.

Second, the course will provide for enhanced "telementoring." With the aid of Web 2.0 technologies, students will have more opportunities to engage in teacher-to-student and student-to-student exchanges which would expand the pool of teacher as learners and learners as teachers.

Third, this online offering would provide for enriched "teleapprenticeships." With doctoral students needing more sites to hone their teaching skills and more research veins to tap, this new online course would be a prime place to help doctoral candidate use empirical methodologies to determine the efficacy of espoused philosophies and theories of teaching and learning.

Fourth, this "classroom with electronic walls" (Dede 1999) will be a place where teacher and learners would all benefit from the social networking, the knowledge capital, and the communion made possible by a computer-supported-collaborative learning environment.

By providing geographically diverse juniors, seniors, and post baccalaureate students an additional avenue to complete required coursework and by providing these students an environment in which to hone their educational technology skills, this course will meet national mathematics standards and technology education standards for K-6 teachers.

What pedagogical approach do you plan on using? Blended? Fully online? Provide your best ideas on this topic as you conceptualize them at this point in the process, however it is assumed and expected that your approach may evolve as you develop the course/program more fully during the fellowship program.

This course will be designed as an online experience to give students opportunities to grapple with "big ideas" of mathematics in anytime, anyplace, anywhere formats with resources, experts, and peers as near as "bandwidth" access will allow. This course will retain its central focus of preparing students to teach mathematics in elementary and early childhood settings, but it will morph from its face-to-face delivery system of the 70's and 80's, and from the asynchronous presentational form that characterized its distance education component in the late 90's, into a computer-supported collaborative learning environment that can "distribute" teaching where learning occurs . . . namely, anywhere.

Wikis, blogs, chatrooms, e-mails, instant messages, and "Skypes" will be used to ensure no conversation is missed in the Vygotsky-inspired "classroom with electronic walls" (Dede, 1999). Social tagging, social bookmarking, and social networking will be encouraged to ensure collaborations are possible when students embark on their mathematically-enriched "webquests." Database searches, podcast downloads, and archive retrievals will be explored to ascertain opinions held by "math war" opponents. Online journals, e-books, ipod and Kindle recordings, computer applets and virtual manipulatives will be employed to ensure entry points into problems through preferred learning modalities. Powerpoints presentations, YouTube productions, and hypermedia postings will be exploited to showcase signature assignments that are part of formative and summative assessments of the course.

Futurist Chris Dede of Harvard University admonishes us to consider the "communion among people" as pedagogies are considered for online distributed delivery systems. He writes:

To succeed, distributed learning must balance virtual and direct interaction in sustaining communion among people. A relationship based only on telephone conversation lacks the vibrancy that face-to-face interchange provides. Similarly, while digital video will broaden the bandwidth of virtual interactions on information infrastructures, teleconferencing will never completely substitute for direct personal contact. We can expect a variety of social inventions to emerge that provide the best of both worlds and that incorporate CSCL (computer-supported collaborative learning) tools into other types of educational applications, such as multimedia/hypermedia and experiential simulation. (Dede, 1996)

It is the Dede research that informs my decision to plan time and ways for some face-to-face delivery of the course content and for frequent heart-to-heart affective and volitional encouragements. The following are examples of the supports planned:

1. All students will take a survey that helps them determine their propensity for online learning. If students declare themselves not "on-line" ready; I will encourage them to find face-to-face offerings in their home communities.
2. Once in the course, students will be encouraged to find an e-buddy to go through the experiences with them. This has proven to be a great help to reluctant and novice technology users.
3. Periodically throughout the course, I will have "Skype" sessions with distant students and face-to-face sessions with area students to give them the emotional and psychological supports they need.
4. Finally, I will contact students using as many Web 2.0 media as called for to offer words of encouragement. Since the students in this course all hope to be classroom teachers I would model for them how they might help their own technophobic students and ask them to brainstorm with me other methods that might prove effective for a technophobic.

In sum, students in this course will engage in Internet-enabled collaborative learning using problem solving, teaching scenarios, classroom simulations, and online discussions as means to inform personal judgments about "best practices" in teaching, learning, and assessing school mathematics. During the course, the e-learning community formed will become facile at using synchronous and asynchronous technologies while sharing ways to make mathematics meaningful for children and their families.

Who is the target audience for your course/program?

The target audience for this online summer version of Educ 463 will be juniors, seniors, and post baccalaureate students interested in seeking licensure in either early childhood or elementary education. Students will have to have passed MATH 113 and MATH 114 (or equivalent courses) with a B or better to be eligible for this course. The course is being tailored to meet the needs of perspective CTEP students so, if additional students want to take this course, they will have to petition the instructor and make a compelling case for admission.

**When would you plan on offering the course (e.g. summer term, academic year)?
On what schedule would you plan on offering the course (e.g yearly, each semester)?**

The plan for this course is to pilot it during the summer of 2011. If findings from the pilot effort are positive, I will consider offering this course as an alternative to the face-to-face course I teach during the academic year. By having both courses with varying degrees of technology required, I will be able to meet the learning needs of more students and conduct research on various aspects of the two delivery systems.

Have you taught this course in a face-to-face format previously? When did you last teach it? You may submit a copy of your current syllabus, although this is not required.

I have taught at least one section of Educ 463 in a face-to-face format every semester since my appointment on the faculty in 1974. With each group of students, I have attempted to keep the content relevant by staying abreast of the research in the field of mathematics education and by infusing technology into the course when time permitted and content dictated it. By adopting the National Educational Technology Standards for Teachers (NETS-T) and the National Educational Technology Standards for Students (NETS-S), I have made technology an integral part of this course. (Attached please find the Fall 2009 syllabus for course.) Since I am on sabbatical this semester, I worked closely with Dr. Sandra Madden to insure that the goals and objectives of the course were adhered to in my absence. Based on the evaluations from this course, I have been awarded the University's Distinguished Teacher Award (1987) and the School of Education's Outstanding Teacher Award (1997).

What previous experience do you have with teaching in an online or blended format?

When the campus adopted the WebCT teaching platform, I immediately moved my course content into this environment. In the Fall of 2007, I migrated my course materials to Blackboard and in that same year, I placed the content for my graduate courses on TK-20. In WebCT and Blackboard I have used the chatroom, bulletin board, calendar, e-mail and assessment (including rubric building) features. I have also used multimedia and hypermedia functions to enrich the instructional materials of the course. In TK-20, I used that platform to link my course content to the national and state mathematics standards, to the National Association for the Education of Young Children (NAEYC) standards and the Association for Childhood Education International (ACEI) standards for early childhood and elementary school students.

Answering the following questions is not required for the fellowship selection process, however responses to the following questions would be helpful. Applicants are not necessarily expected to be able to provide this information. The fellowship will include support for further developing the project along these, and other lines:

What is the anticipated demand for this class? What data do you have to support this or how might you measure it (e.g. conduct focus groups with target audience members?)

Since Educ 463 is: (1) required for the Education Minor; (2) one of courses that brings our NCATE programs into compliance with the State mathematics guidelines; and (3) a pre-requisite for the Collaborative Teacher Education Program (CTEP), there is always a heavy demand for this course. If an online or blended version of this course could be mounted that could be offered in the summer and/or during the academic year, there would be great demand for these learning experiences. Every semester I have a "waiting list" of 10 - 15 students. In addition to the e-mail requests, I receive telephone calls from roughly the same number of students wanting to gain entry into a section of this course. For the Fall 2010 semester, I have received eight e-mails from students (after only the first day of pre-registration) requesting to be placed on my "waiting list."

Are there other programs (either within the state or nationally) with similar offerings? How is this program unique?

All colleges and universities preparing elementary school teachers have a course that is similar in content and thrust. What would be unique about this course is the attempt to take social constructivist precepts and apply them in virtual learning communities while using emerging Web 2.0 technologies. Research in the area of "distributed learning" in social constructivist methodology courses is so new that pioneers in this area have only small case studies and anecdotal reports on which to make assertions about the effectiveness of specific pedagogical practices.

How would you plan on marketing this course/program?

Marketing this course could be done effectively through the Education Minor advising mechanisms and through the CTEP advising mechanisms. If the question of enrollment

numbers ever became a concern, the restriction of "Junior and Senior Only" could be revised to read "Only students who have completed MATH 113 or Math 114." Every semester there are first and second semester sophomores who would like to be allowed to take this course.

How do you plan to assess the quality and ongoing effectiveness of this course/program?

To assess the quality and ongoing effectiveness of this course, I will be guided by the thinking of Gavriel Saloman of the University of Haifa. He reminds those involved with program evaluations to consider either the impact 'of' the technology or impact 'with' it on program participants (Bonk, 2009, 361). I will attempt to assess both of these impacts in this online course.

Impact 'with' technology will be the easier of the impacts to assess. The overarching assessment question with 'with' consequences will be: Are students able to collaborate, present, and communicate better/faster/easier 'with' the Web 2.0 technologies used in the course? These impact comparisons will focus on skills associated with intellectual partnership between the student and hardware/software used.

The impact 'of' technology on students will be harder to assess because it is this impact that speaks to the cognitive, affective, and conative impact 'of' technology on the learner. The overarching assessment question with 'of' consequences will be: "Are students able to engage in higher order thinking, to reveal heightened feelings, and to demonstrate greater self-actualizing (self-directing/self-regulating) potential as a result 'of' technological interactions?"

Given these two types of impact questions, an array of surveys, self-assessments, peer-assessments, group projects, formative, and summative assessments will be used in conjunction with stated objectives to determine the quality and ongoing effectiveness 'with' and 'of' technology on this course. [Note: The "Student Response to Instruction" (SRTI) evaluation form will be used but it will be modified to speak to the social constructivist aspects of the computer-supported collaborative learning environment.]

What additional expenses (e.g. equipment or travel) might be incurred in developing this course/program?

Because of the labor intensive and on-demand nature of this online learning, some resources will need to be reserved for teaching assistance should the enrollments warrant this. To insure timely feedback to students and to insure psychological and emotional support, there will need to be knowledgeable teaching assistance who could fill the roles of "e-mentors," "e-discussion moderators," and/or "e-technical handholder."

What are the budget implications for the proposed course/program?

This question gets to the heart of abundance/scarcity concerns that have plagued educators for decades. The following are questions raised by these concerns:

1. Remediation Supports

What resources will be available for students who want online learning but are not intellectually, socially, or psychologically prepared for this kind of experience? Many of the 3-D (i.e. Defiant, Defensive, Defeated) students that I teach, may need remedial attention before being able to take full advantage of online courses. [Will there be resources for needed remediation?]

2. Equipment Upgrades

How can we insure that ALL students regardless of financial resources are able to take advantage of online experiences? Having reliable bandwidth services, having upgraded computer hardware and software, and having access to needed peripherals will be important for success in online courses. [Will there be resources for needed equipment?]

3. Infrastructure Retrofits

With an increase in the number of online courses and a concomitant increase in the demand for Internet access, will there be resources for the infrastructure retrofits needed to keep up with bandwidth advances and new teacher, learner, and researcher demands. [Will there be resources for needed modernization of equipment and bandwidth capacity upgrades?]

4. Off-Site Overhead Costs

With "on-demand" learning and with "just-in-time" (Bonk, 2009) mentoring expectations heightened, there will be more uses of home offices and mobile devices to deliver services. With these new demands, universities will need to find ways to determine how to reimburse faculty for energy (i.e. electricity, bandwidth services) expended at off-site locations. [Will there be reimbursement for the energy consumption at off-site locations as there has been reimbursement for mileage to public school sites to work with students?]

References

- Bonk, C. J. (2009). *The World is Open: How Web Technology is Revolutionizing Education*. San Francisco: Jossey-Bass.
- Dede, C. (1999). How Web 2.0 Tools are Transforming "Learning" and "Knowledge" Apple Learning Interchange (ALI) Podcast. Retrieved on 4/4/10 from <http://edcommunity.apple.com/ali/item.php?itemID=14552>.
- Dede, C. (1996). "Emerging Technologies and Distributed Learning." *The American Journal of Distance Education* (pp 1-27)
- Wu, T. (2010). "Bandwidth is the New Black Gold." *Time*. March 22, 2010, pp. 44, 46).