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ABSTRACT

This paper describes "Methods of Integrating Technology in the Elementary Social Studies/Language Arts Classroom," a class at Northern Arizona State University with the purpose of assisting preservice teacher candidates in developing an understanding and appreciation of the many perspectives of the social studies, language acquisition in all its forms (reading, writing, listening), and a vision of the roles and impacts of technology on the social studies/language arts curriculum. Student narratives, reflections, and evaluations are presented. Historical background on technology in the curriculum, the transmission model, and the fragmented curriculum is then provided. Challenges and experiences in planning and implementing the course are discussed, and the syllabus for the first week is included. The importance of the integrated interdisciplinary model is considered, and it is concluded that--through their participation in this model--the preservice teachers became active, constructive learners who were confident in their ability to integrate technology into an interdisciplinary curriculum when presented with an appropriate model in a learning environment that made them responsible for their own learning. (AEF)

An Interdisciplinary, Problem-Centered Methods Model for Preservice Elementary Teacher Education

By:
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An Interdisciplinary, Problem-Centered Methods Model for Preservice Elementary Teacher Education

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After wrestling for some time with how best to tell the story of EDUC 453/454-553/554, Methods of Integrating Technology in the Elementary Social Studies/Language Arts Classroom, I have chosen to begin with the students' personal narratives and reflections about their experiences. Following a bit of historical and theoretical background I will share my own challenges and experiences in thinking about, planning, and implementing the course, including the strategies that made the "doing" so meaningful for all of us.

Student Narratives, Reflections, and Evaluations

Andrea: Dear Becky,
For the first time ever, I actually feel that I truly learned an immense amount of information that I can take with me and honestly apply in my own classroom. I am no longer terrified of computers and I have no doubt that they will be a large part of my curriculum. I just loved your class and teaching style...how you respected each of us as people, not just students...you inspired me to go that extra mile and to stretch my thinking, while building my confidence. I am not afraid of going into the classroom and teaching, as well as learning. I have so much faith in myself and my abilities now, much more than I did at the beginning of the semester (Personal communication, 1997).

Christie: I wanted you to know I learned a lot from you this semester. I learned not only about strategies, but how to be a wonderful teacher (Personal communication, 1997).

Melissa: Dr. Willis,
This is to thank you for everything!!! I feel like I have grown sooo much through this course. Being the teacher that you are makes it possible for us, in turn, to become teachers like you have modeled to us. Thank You. P. S. Thank You for the "hand on the shoulder" touch that made me feel cared for as a student and as a person (Personal communication, 1997).

From anonymous class evaluations:

This class was one of the most interesting...I have had to take. Not only did I learn different techniques and strategies of integrating technology into my classroom, but I learned a tremendous amount of information myself. It's just amazing to me how much knowledge I gained on the rain forest! I think the most beneficial (sic) thing I got from this course, was getting rid of the "fear" and frustration I have always experienced when working with computers. I still get frustrated sometimes because things take so long, but at least I feel confident enough with my computer skills that I know how to do something when I need to without asking someone to help. I realize that this was one of the goals for this course, and I just want you to know that you succeeded! Not only did I enjoy the content of the class, but I enjoyed the style you used to teach it. You are one of the only professors I have had that made me feel like I am not just a student in your class. It seemed as if you actually understood that we were almost teachers ourselves, and treated us all with respect in that way. Thank you for a great semester Becky, I truly learned a lot from you. You are a great role model for developing teachers. I hope one day I will have the ability to make my students feel special and respected as you have done (Personal communication, 1996).

I feel that my biggest area of growth was in computer applications. I have learned of and how to use so many programs that I will be able to use in the class. From participating in so many different programs, I have learned how to manipulate the computer. I also learned a lot on current issues, the need to discuss these issues in the classroom, thematic units (ie Rain forest, and the many perspectives in history). I would have liked to have focused on the areas of social studies more. I enjoyed the way Becky introduced our activities. She gave us brief instructions and left us to figure things out, but was always available when we needed help. Becky is a very supportive person. She treated everyone with respect and always made time for the

students. She is very approachable, and was very flexible with assignments. She provided a very non-threatening learning environment. I feel that Becky posses(sic) a important quality which is self-evaluation. She not only evaluates herself and units but asks for areas of strengths and improvements. The only area of improvement I see is that she is sometimes too lenient. I feel that Becky held true to a teaching strategy she believes in which is mushroom management...She challenged us and let the students do inductive learning but was available if we became frustrated. Becky has been a wonderful model for me...I hope that I am as accepting, patient, and as dedicated as she is. She also showed me the importance of: having student's understand themselves as well as other cultures; having students evaluate the lessons/units; having closure and discussing what we learned; modeling and flexibility; giving students "hands on" time. I do not think there is one thing that I have not or will not use in my classroom (written class evaluation, 1996).

My Thoughts on the Student Comments

The sampling above, of students' thoughts and candid evaluations of EDUC 453/454, demonstrate that something very powerful happened in this class, something that had happened neither for, nor to, these preservice teachers in their previous educational experience. Several strands I noted running through the messages were (1) respect for the individual; (2) personal responsibility for learning; (3) trust in students' intrinsic motivation to work independently and with others.

Historical Background

Technology in the Curriculum

The United States, as a part of a global society, is fast becoming defined by electronic technology, in the home, in the workplace, at leisure. Education of young people in such a fluid, ever-changing society has become a complex and challenging task for a system based on the outmoded concept that information remains static and can be transmitted and learned in fragmented disciplinary bits. Enmeshed in this system is the classroom teacher who realizes that the job of teaching students to learn in the electronic world is not being accomplished, but who has little background education on which to rely for a new vision of an interdisciplinary curriculum, nor of how new computer and information technology might be placed within such a curriculum.

For instance, in his recent Executive Summary, "The Information Highway is Bypassing America's Schools," John Cradler (1995) of the Far West Laboratory for Educational Research and Development, includes in his report that:

> Despite available technologies in schools, a substantial number of teachers report they do not use computers and other technologies regularly for instruction...A majority of teachers report feeling inadequately trained to use technology resources, particularly computer-based technologies...Training focuses on the mechanics, not on integrating technology in the curriculum...

Teachers lack an understanding of curricular uses of technology and lack models of technology for their professional use (p. 3).

The Transmission Model

According to Cameron White(1996), "Social studies teacher education desperately needs a shot of innovation" (p. 69). The knowledge transmission model of teaching and learning is what most students experience in their own education from kindergarten right on through teacher certification, so it is little wonder that the goal of students in teacher education programs becomes transmission "rather than a process of interaction and construction of knowledge (Brazee & Kristo, 1986; Shor & Freire, 1987). This model with which preservice students have lived for 16 years of education is internalized and becomes the mode of operation, guiding not just the use and integration of technology, but the whole of a teacher's approach to curriculum in their own classroom. The view of the mind as a *tabula rasa* , a blank slate to be filled, was never appropriate, but is even less so today. With the amount of knowledge estimated to be doubling every decade and computer capability every three years, it seems more important that students become able to process, interpret, and evaluate information than to amass specific knowledge (Post, Ellis, Humphreys, & Buggey, 1997).

The Fragmented Curriculum

Heidi Hayes Jacobs (1989) notes that from early on experience in educational environments students begin to define subjects as separate bodies of knowledge with little relationship or links between them. This delineation between disciplines becomes more entrenched as students move into middle and secondary school where subjects are taught in 35-50 minute blocks by specialists, with little modeling of the relevance of one class or subject to another. In "real life," though, these young adults begin to realize that "we encounter problems and situations, gather data from all of our resources, and generate solutions"(Jacobs, 1989 p. 1). Unfortunately, school days fragmented into discrete disciplinary time slots do not reflect reality.

The Class: Methods of Integrating Technology in the Elementary Social Studies/Language Arts Classroom

The purpose of this course was to assist preservice teacher candidates in developing an understanding and appreciation of the many perspectives of the social studies, language acquisition in all its forms (reading, writing, listening), and a vision of the roles and impacts of technology on the social studies/language arts curriculum. Students would ideally begin to: develop expertise in planning

and implementing informed, interdisciplinary practices of teaching social studies/language arts through literature (whole language, the writing process, and student response); create a computer using curriculum based on models, theories, and research; learn habits of inquiry and reflection as lifelong learners and teachers; and build bridges of understanding among individuals of diverse cultural backgrounds, learning abilities and special needs. These were the stated goals and objectives. However, as I talked with students throughout the semester and received their feedback through reflections, evaluations, videotaping, interviews, and observation, the real power of the actual implementation of the course was stunning.

Strategies utilized and modeled were constructivist in approach: hands-on, problem-centered and interdisciplinary, with technology seamlessly integrated into the curriculum. Students participated in a selection of projects relevant to their own future elementary classrooms (i.e., Rain Forest thematic unit, the Lecture Series), learning to use appropriate computer software, from word processing, graphics, databases, spreadsheets, and simulations, to telecommunications and hypermedia. According to Post, T. R., et al, (1997) "Interdisciplinary studies can be squarely placed with the philosophical position that contends that knowledge cannot be transferred directly from one individual to another (p. 19)," but is both personal and social in nature. That is, meaning is individually created by engagement in activity, and, activity with peers "results in an internalization of ideas and the construction of a personalized from of knowledge" (p. 19).

Thinking About and Planning EDUC 453-454/553-554

In the Spring of 1996 the Department of Curriculum and Instruction realized that another section of our methods block (elementary social studies, language arts, reading) would have to be in place for the Fall semester to accommodate increased enrollment. To insure a robust, somewhat standardized methods curriculum for this new section of 30 undergraduate and graduate students, the block instructors decided to try something new. We did not hire part time faculty to teach the additional social studies and language arts classes; instead, we integrated the two courses into one three-and-one-half hour class that met twice a week. Students registered for both classes, and I agreed to teach the integrated class, since I had been teaching the elementary social studies methods, "Integrating Technology in the Elementary Social Studies Classroom," and held secondary English certification in New Mexico. Besides, I was excited to put together what seemed to me to be the perfect elementary, interdisciplinary methods model: language arts, social studies, and technology.

What transpired for me next was three months of hard work and thinking: gathering, reading, and reflecting on information about reading and language arts, brainstorming with language arts and reading methods professors, immersing myself in the latest research on curriculum integration and learning in teacher education.

When the course syllabus for Methods of Integrating Technology in the Elementary Social Studies/Language Arts Classroom appeared on my computer a month before the class was to begin, it was, from what students later told me, mind boggling and just scary. For me, it was the rewarding synthesis of months of challenging thinking about the social studies, language arts, and technology. It was the blending into one entity of three content disciplines. This is what the first week looked like in the syllabus:

Curriculum Integration Concepts

- Modeling a thematic approach to curriculum integration
- Modeling the use of whole, small, and individual grouping strategies
- Modeling Action Research: A Pretest Survey
- Modeling Democracy as a classroom experience: reflecting on a philosophy of education
- Using the WWW in the classroom

Computer Concepts and Skills

- loading a program, loading a file, saving a file, formatting a disk, printing
- Using software: telecommunications, word processors, and graphics
- Mac Basics
- WWW

Class Activities

- Introductory comments
- Video: Technology Unplugged
- Email accounts: Dante, Verdi, Paris, Hector, Netscape, ED-554
- Biopoetry: word processing
- Completing an Autobiography using a word processing application
- Creating a Print Shop Personal Sign for Notebook/ Portfolio: graphics
- Announcing a University Lecture Series: cooperative group meetings as process
- Web Quest using Netscape

Telecommunications Activities

- Sign onto email
- Send a message to beckyw: All About Me
- Netscape: Web search for language arts and social studies standards

Readings

- Reading, Writing, and Email
- Guide to the Internet, 1-44
- Elementary Social Studies, xvii-27

Assignments

- Locate biography or autobiography about lecture series personalities for class work
- Begin vocabulary database: symbol systems (brainstorm, Venn diagram, chart, web)

To give the reader an idea of my approach in the classroom, this is what I did the first class meeting of the week: I sat "in the round" with the group to discuss the syllabus. Actually, they were so intimidated by it that we spent very little time then talking about it. Students then completed the Biopoetry form, an introductory activity in which one student interviews another to complete a poem that begins with the student's first name and ends with their last name; they then introduce each other. This is a wonderful, personal activity that I believe sets the respectful, friendly, supportive tone for the whole semester.

The next activity that day was the completion of a technology survey, modeling that teachers at all levels are, and should be, action researchers. This activity gave me the opportunity to discuss kinds of research in general and appropriate survey participation in particular, and, of course, collect my own data.

Following the survey, email accounts were set up for all students and a brief demonstration of our telecommunication software was given. They had an email assignment immediately...to email me several paragraphs about themselves, which was an extension of the Biopoetry activity. And, to introduce them to the Internet and the World Wide Web, another immediate assignment was the completion of a short-term Web Quest.

Additionally, brief demonstration was given for the computer graphics application *Print Shop Deluxe*. Students then worked to complete a personal sign to be included in their personal portfolio, a further extension of the personal emphasis of the class.

Most of these students had very little computer experience and many wanted, at the outset, to have "cheat sheets" for guidance for the technology activities. What they learned through mistakes and intuition, trial and error, however, gave them one of the most important learning outcomes—self-confidence. Later, no one even wanted me to show, even briefly, how an application worked—they wanted to do it themselves.

What a first day! And so the semester continued...

Based on the national standards for the three content areas, what I planned to have happen was that these preservice educators would experience interdisciplinary activities, they would "be" lecture series planners and understand the power of language through reading, writing, and speaking; they would "do" social studies through research and reporting on the Rain Forest. Further, students would learn a variety of computer software applications to assist them in "being" and "doing." Plus, they would work in cooperative groups, as well as be responsible for individual components of their projects.

When I look at what I have just written, it seems like a huge undertaking, one fraught with danger and doubt as to outcomes. At the time, though, I was confident that my plan was based soundly in learning theory and my own experience with other classes. More importantly, I knew "down to my toes" that students could and would respond positively to the challenge I was offering.

Were these students confused by what was being asked of them at the outset? Yes.

Did they mutter that the work required for the class appeared insurmountable? Yes. Did they see the interdisciplinary "fit" early on? No.

Were they anxious about using computer technology? Yes.

Did they resent my group making? Yes.

Were they concerned that everything was not given a grade? Yes.

But the evaluations, comments, interviews, and videotapes are a testament to what these students in EDUC 453/454-553/554 accomplished, to their engagement in the learning process. After the first week, when they truly understood that their choices, their judgment, their learning was the class priority, the fun really began. Each one of us pushed our individual envelope, teaching each other and ourselves more than I could possibly have planned for us. These preservice teachers demonstrated to me again the fascinating diversity of learners and the power of the learning environment; they learned from me to trust themselves as learners and teachers.

Importance of the Integrated, Interdisciplinary Model

In order for preservice teachers to become technology-using, constructivist in approach, and designers of effective interdisciplinary curriculums for their own classrooms, they must experience that environment first-hand. They must participate in hands-on, problem solving, and critical thinking processes as students themselves. Models of integration and knowledge construction must replace the transmission model of education still so prevalent in teacher education if we expect teachers to develop those skills for their own K-12 curriculum. And, for that to occur, teacher educators must be the models for those strategies. Methods of Integrating Technology in the Elementary Social Studies/Language Arts Classroom was just such a model. It became clear through the engagement and voices of the preservice teachers that they became active, constructive learners, who were confident in their ability to integrate technology into an interdisciplinary curriculum when they were presented with an appropriate model in a learning environment that made them responsible for their own learning.

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