

Electronic Portfolios: Making the Known Visual through Interactive Design

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Abstract

Electronic portfolios are a way for students to chronicle a history of knowledge and experiences gained during their program of study at Western Carolina University. This article focuses on the content and process involved for Birth to Kindergarten majors to complete an electronic portfolio in their senior capstone course, Computer Applications for Early Childhood Professionals. Both student and faculty perspectives give insight to the benefits, challenges, personal and professional growth gained through reviewing coursework, selecting exceptional assignments to include in the portfolio through various interactive media such as video, sound, text, animation and visual graphics

Imagine two student technology products on your desk for review; one is a large four inch technology binder notebook full of papers and the other an electronic portfolio where selected best assignments were burned to a CD-ROM. If you think you would select the CD-ROM with its visual cover and compact size for review first, then read further to see how Birth to Kindergarten (BK) majors at Western Carolina University made this transition in the fall of 2001.

Helping BK students learn about interactive design in order to display their best work electronically provided a rewarding and challenging opportunity. The term “electronic portfolio” implies that the delivery mode will be digital in nature and presented on a computer as described at the “Using Technology to Support Alternative Assessment and Electronic Portfolios” web site (<http://transition.alaska.edu/www/portfolios.html>). The push to go beyond the paper/pencil portfolio notebook as the norm for representing student’s technology skills was two-fold. First, prospective employers would be able to review a student’s work through multimedia, giving a profile of the student through words and actions such as video clips (see Figure II) of student participation and leadership in addition to text, sound, animation, and other graphics. Such methods of assessment are not limited to multiple-choice and standardized tests but include projects with outcomes that are authentic and performance based (Meyer, 1992).

Secondly, developing the portfolio is an opportunity for students to look back and identify benchmark performance in each major course that might be included in their portfolios starting with their

first course in the program to this culminating capstone experience. Furthermore, identifying the projects that characterized their philosophy about teaching and learning with young children provided a deeper critical thinking activity where students analyzed their learning history, examined their values and beliefs in creating a personal and professional profile of themselves (Paulson, Paulson, & Meyer, 1991). By pulling together all their important and significant assignments, students discovered an overall pattern of what they believed and where they stood on important issues. They made connections between their various assignments. They reviewed and reflected on all their course work to gain a better understanding of who they were as an early childhood professional.

Course Organization

Choosing the software for creating the portfolios was the first step. After reviewing several authoring programs such as Authorware, Roger Wagner Publishing's HyperStudio, Macromedia Director 8 was chosen because of the program's robust ability to integrate multiple media formats. A reviewer does not need a special program on their computer to view the student's work--just clicking on the CD opens the projector files. In contrast, all the Xtras in the Authorware program have to be installed on the computer of origin and included as part of the distributed CD content.

The course, **BK 463: Computer Applications for Early Child Professionals**, was developed with the syllabus being the roadmap for transitioning to a very active learning process (see Appendix). Two textbooks were used; *Director 8 and Lingo Authorized* by Phil Gross (2000) contained a CD with lessons to complete for each text chapter. *Interactivity by Design* by Roy Kristof and Amy Satran (1995) gave students a practical and effective way to conceptualize multimedia presentation. For example, chapters at the beginning of the book prompt students to answer questions such as, "What is interactivity? What is included in the interactive process? How do you develop a presentation design?"

When considering the design process, the analogy of a book layout was helpful. In the first part of the portfolio is an introduction to the reviewer about the student, how the navigation buttons are used to proceed through the portfolio and the student's personal website link for additional examples and information. Then a list of headings, much like a table of contents in a book follows. This page is often referred to as the main menu. The aspects common to all portfolios were 1) the inclusion of the four domains from the state BK program of study (knowledge, pedagogy, diversity, professionalism) as the

portfolio major headings, 2) a philosophy statement and 3) a resume. With those givens, students decided which of their course projects to include under each of the headings and what type of interactive media would be most appropriate. This format allows the reviewer to click on a heading and consider all the linked materials, then use the navigation buttons to proceed forward, backward, return to the main menu or exit the program at any time. The ability to navigate wherever the reviewer chooses -- to start at the beginning or in the middle of the portfolio -- allows for the flexibility to select any portfolio component at any time.

Having a metaphor, such as a book, helped students relate to a concrete example so they were able to stay focused and organized. In addition, a rubric was designed that included a timeline when portions of the portfolio had to be completed. This was important because it required students to "jump right in" allowing them to see progress even in the beginning. The class was conducted in the electronic classroom where students displayed their portfolio progress weekly. Someone would notice something from another student's presentation and comment, "How did you do that?" Thus peer collaboration became a cornerstone of the course. I often saw students in pairs or triads working together in the computer lab after class sessions. I was available for individual assistance, but nudged students to seek help from each other, knowing one of the best ways to learn something is to teach the process to someone else.

Faculty Perspective

Looking back, we had no idea the immense learning curve faculty and students would be undertaking. Director 8 is no lightweight computer program. One of the faculty participated in a three day Introduction to Director 8 workshop at Georgia Tech the summer before teaching the course for the first time. This was invaluable in helping see how to teach oneself through the textbook lessons. Thus, as we all began to master the program basics, a sense of great accomplishment permeated the classroom atmosphere. The motivation and confidence emerging as each new level was achieved was remarkable. One of the most exciting aspects occurred when students could see all the navigation segments of their portfolio working accurately for the first time. Students would be working at their computers and all of a sudden you'd here someone shout, "Hallelujah!"

Once students completed the portfolio content, they designed their CD label and jewel case cover (see Figure1). Students made two CDs for their use and another copy to keep on file in the BK departmental office. Students can update their work or make other copies for employment purposes if necessary. Once again, their creativity and sense of detail was reflected in their desire to visually design the CD cover as a personal statement of themselves — unique and highly qualified early childhood professionals.

Student Perspective

Students felt a great sense of accomplishment and pride in their finished product. One student said, “The greatest benefit from creating my portfolio electronically was the process of learning something new and challenging. Technology is advancing so quickly and it was nice to participate in a project where my personal boundaries were expanded. Being able to display work of this magnitude brought great satisfaction. The Director 8 program could easily be compared with something a CIS major would undertake, and being in a program where people think you just play with children proves Birth to Kindergarten students can do both. When we worked on the assignment in class, students were encouraged to work and talk with each other. This did two things: first, it created laughter and secondly, the opportunity for students to learn from their peers, making class a joy to attend. I also recall the long hours of work trying to get the blankety-blankety-blank computer program to work. Now I can look at my Director 8 project and feel proud of the accomplishment.”

Another student commented, “The greatest challenge for me was overcoming my personal fear of computers. You hear horror stories all through school of people who lose work or the computer crashes and they lose everything. I was really afraid this would happen to me. But knowledge is power and the more I learned the less scared I became. Now, I don’t have to tell a potential employer that I have a strong technological background, I can show them.”

The course conclusion was a public presentation where parents, BK faculty and majors, and other selected individuals attended as students shared their portfolios. Fall semester, 2002, forty parents and grandparents were among the guests viewing their children’s accomplishments. It was a celebration for everyone!

Today, too many early childhood classrooms use inappropriate practice. Teachers are not using new and innovative teaching strategies; instead, they continue to teach with worksheets and use authoritarian guidance strategies. In our BK classes, we are teaching students to implement developmentally appropriate practice when they become lead classroom teachers in the public schools. The electronic portfolio helps our students develop their philosophy of teaching because they have to tie everything together. Therefore, when they go into their first teaching jobs, they have a better understanding of what they believe about teaching and learning, allowing them to feel confident in making any necessary changes in the classroom.

Completing the electronic portfolio showed that our BK students have the disposition to try something new. They were not afraid to take risks and to undergo a challenge. When they become classroom teachers, they will pass on this disposition of trying new things to their young students.

Furthermore, student electronic portfolios have become a major BK recruitment tool. When the portfolios are demonstrated, there is generally a crowd surrounding the computer in awe of the unique and creative ways students have designed their CDs. Making the transition to electronic technology and content portfolios has brought regional and state recognition to the Birth to Kindergarten program at Western Carolina University, in addition to the camaraderie among students and faculty who collaborated together to walk a new path.

Summary

Electronic portfolios are quickly winning favor as a form of authentic assessment at all levels of education. This learning innovation not only offers a demonstration of accomplishments, but also allows students to take responsibility for the work they have done. Electronic portfolios can be as simple or as complex as one would like to make them. Much depends on faculty goals and abilities, the skills of students and the availability of technology.

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Appendix

Syllabus: BK 463 Computer Applications for Early Childhood Professionals

The advancement of basic technology and multimedia for developing an electronic content/technology portfolio.

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Textbook(s) and other required materials: *Director 8 and Lingo* Authorized by Macromedia by Phil Gross; State BK Program Standards/Indicators; State Technology Competencies

Course Topics or Outline:

Director Basics
 Animated Bullet Lists
 Reversing Animations
 Transitions, Sounds, and Video
 Adding Interactivity
 Keyframes and Layers
 Built in Behaviors
 Sprite Properties and Palettes
 Markers and Navigation
 Fonts and Menus

Course Objectives:

Using Director 8 software, Birth-Kindergarten (BK) majors will develop an electronic portfolio exhibiting their program content/technology knowledge representative of an information design format. Student's philosophy statement concerning the way they believe children learn and grow best and their role in this process will serve as the framework for their portfolio. Samples of their coursework (including a variety of media, i.e., PowerPoint, video clips, text, graphics) will be intergraded throughout their philosophy to give documentation to their content and technology knowledge base.

Course Requirements:

Completion of a content/technology electronic portfolio
 Completion of a CD cover and label

ELECTRONIC PORTFOLIO OUTLINE

Objective: Information design is the process of clarifying your communication goals and arranging your content into a design that serves those goals. It's selling, teaching, storytelling, or just plain informing—in the most effective way you can. (*Interactivity by Design*)

| Timeframe | Process | | Materials/Tasks |
|-------------------|-------------|---|---|
| Week 1 | 8/21-8/23 | Introduction to Information Design Introduction to Director 8 software; experiment using basics elements—Stage, Cast, Scripts | <i>Interactivity by Design</i> Director 8 Textbook—Lesson 1 <u>Assg for August 23:</u> Read: The Introduction and Lesson 1 in the text, Director 8. Write down three of the most challenging ideas about which you would like clarification and discussion. |
| Weeks 2, 3, & 4 | 8/28-9/13 | Defining goals; Intended Audience; Outlining and organizing the portfolio content/goals into a flowchart Identifying a navigation format Experiment using basics Director elements—Stage, Cast, Scripts | Refine your teaching philosophy statement Begin gathering projects from courses, lab experiences, video clips of presentations which support your teaching philosophy statements Director 8 Textbook—Lesson 1 |
| Week 5 | 9/18-9/20 | Picture of yourself with recorded narration re: (a) a brief describe of yourself, (b) an explanation of how to use the CD, (c) summarization of the importance of your work. | Develop the stage background and cast members for first scripts (picture, narration, philosophy statement) Director 8 Textbook—Lesson 2 |
| Week 6, 7, 8, & 9 | 9/25-10/18 | Introduction to Behaviors/Animation Integrating selection of Projects for Portfolio Inclusion | Director 8 Textbook—Lesson 4 Director 8 Textbook—Lesson 5 Director 8 Textbook—Lesson 8 Director 8 Textbook—Lesson 9 |
| Week 10, 11 | 10/23-11/1 | Testing out the processes | |
| Week 12, 13 | 11/6-11/15 | Burning the CD's Designing the CD label and cover | |
| Week 14 | 11/20-11-29 | Semester Review of Work | |

| | | | |
|---------|------------|----------------------------|--|
| Week 15 | 12/4-12-11 | Presentation of Portfolios | |
|---------|------------|----------------------------|--|

Conceptual Framework Statement: The professional education program at Western Carolina University fulfills its mission by creating and nourishing a community of learners guided by knowledge, values, and experiences. The guiding principles of this community include: (1) the belief that the best educational decisions are made after adequate reflection and with careful consideration of the interests, experiences, and welfare of the persons affected by the decisions; (2) appreciation of and respect for diversity; (3) and the fostering of the responsible use of technology.

This course focuses on the application of advanced technology skills in designing an electronic portfolio. Students in previous courses gain competence in the basis technology/multimedia skills. This capstone course allows them to combine their technology/multimedia knowledge as they reflect on their BK program course of study in identifying their “best work” for inclusion in their portfolio.

Diversity Statement: Student composition relates to diversity regarding differences in ethnicity, gender, socioeconomic status and geographic region in which they live. This diversity enhances student learning which in turn helps students engage all children with and without disabilities in the application of their coursework—whether in a field experience or classroom setting. The Belk electronic classroom computer stations are cluster designs promoting a great deal of peer interaction. Thus, students with greater technology competence often rotate their chairs to help students who may be challenged regarding a certain computer component. WebCT assignments also enhance cross-learning among students as they reflect on and respond to the writings of their peers.

Technology Requirements: All of the advanced technology components are addressed in this course which is taught in the electronic classroom.

Clinical or Field Experience Component: None

Evaluation Procedures: Rubric design outlining criteria to earn either an A, B, C, D, or F for the course.

| A | B | C | D | F |
|--|--|---|---|---|
| <p>High level of philosophy statement development; integration of a variety of media representation; Clear relationship to state BK standards and state technology competencies; High energy and participation in the course process components; Exemplary electronic portfolio</p> | <p>High level of philosophy statement development; integration of a variety of media representation; Clear relationship to state BK standards and state technology competencies; High energy and participation in the course process components; Commendable electronic portfolio</p> | <p>Medium level of philosophy statement development; integration of a variety of media representation; Clear relationship to state BK standards and state technology competencies; Medium energy and participation in the course process components; Acceptable electronic portfolio</p> | <p>Fair level of philosophy statement development; integration of a variety of media representation; Clear relationship to state BK standards and state technology competencies; Fair energy and participation in the course process components; Acceptable electronic portfolio</p> | <p>Unacceptable level of work in all components.</p> |

CD Cover Designs for Electronic Portfolios

Figure 1. JPEG image of CD covers designed by JoeDavid Hall and Catherine Taylor.

Figure Caption

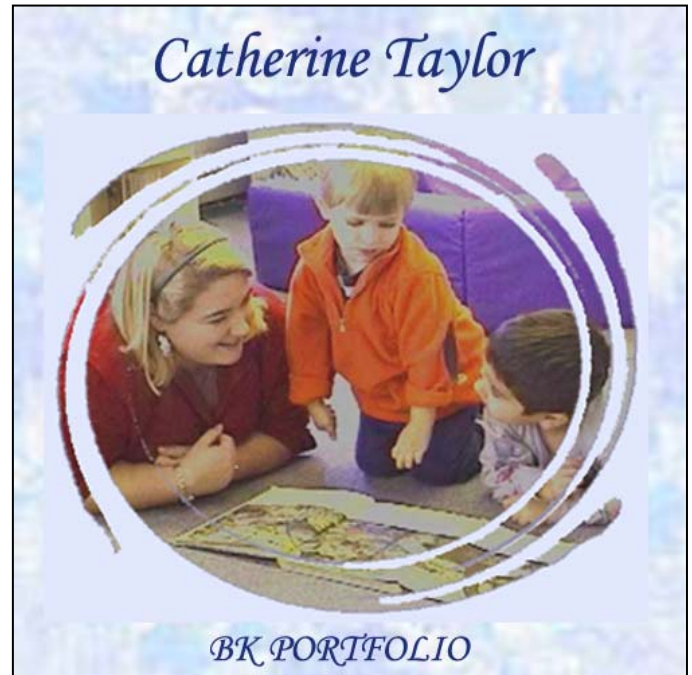
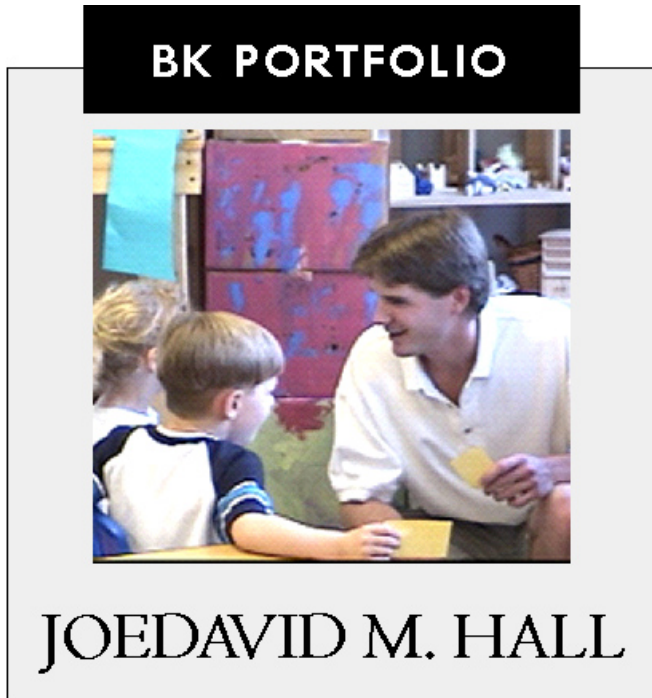


Figure II. Student interactive video clips.

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