IF AT FIRST YOU DON'T SUCCEED…

LEARNING FROM MISTAKES AND DEVELOPING A BETTER STUDENT PORTFOLIO

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A major component of Indiana State University's PT3 grant was the development of an electronic portfolio system. Our first attempt was problematic, however, we learned from our mistakes. This chapter discusses what we learned and how we devised a successful portfolio system and integrated technology into the teacher education program.

Indiana State University (ISU), the third largest producer of teachers in the state, was awarded a United States Department of Education's Preparing Tomorrow's Teachers to Use Technology (PT3) grant in 2001. While many successful initiatives arose out of ISU's PT3 grant, one particularly noteworthy initiative, the development of an integrated electronic documentation system, had multiple setbacks and underwent significant revisions before the venture became a success. Our learning and eventual success despite initial failure are the foci of this chapter. More specifically, the purpose of this chapter is threefold: 1) to describe the original portfolio system and what we learned; 2) to outline the new portfolio system and delineate the underlying mechanisms leading to success; and 3) to provide recommendations for other institutions undertaking this type of initiative.

Setting the Stage

Over 20% of the entire student population at ISU are enrolled in a professional education program at ISU. Among the undergraduate teacher education programs, elementary education has approximately 900 students, early childhood and special education have nearly 200, and

another 850 students are enrolled in the secondary education program, although secondary education students are considered majors in their respective content area. Currently, 21 departments across the university are connected to the teacher education program.

ISU is also involved in Professional Development School (PDS) partnerships with 20 schools in 5 districts. The PDS sites represent all levels of schooling and serve diverse geographical areas. These K-12 partners assist with the instruction, supervision, and mentoring of preservice teachers. This partnership allows the teacher preparation program to embed practicum experiences within each of the methods courses, thus, preservice teachers are able to apply what they learn through coursework to authentic teaching situations.

Rationale for PT3 at ISU

ISU applied for a PT3 grant in order to increase faculty role modeling of technology, develop students' skills and knowledge related to the integration of technology into the curriculum, and provide an avenue for electronic portfolio development. Prior to the PT3 grant, very few faculty members used technology for instruction on a daily basis and few took advantage of the technology resources, such as computer-enhanced classrooms and multimedia carts, which were available. This was consistent with research by the Milken Exchange on Education Technology (1999), who surveyed 400 teacher education institutions and found that most faculty do not model the use of technology in their teaching. Additionally, only a few faculty members had expertise in this area and were often asked to teach the "technology component" of a class, which reinforced that technology should be viewed as a stand-alone subject. This was contrary to research that has demonstrated that computers will have the greatest impact on student learning when they are integrated into the classroom and the work is

tied to relevant standards (Barnett, 2003). Our students lacked role models who could demonstrate technology-based instruction, an essential need as identified in previous research (e.g., Carlson & Gooden, 1999; Jones, 2001; Kemp, 2000).

Prior to the grant, students developed paper-pencil based portfolios. With the emphasis on technology infusion, the decision to move to an electronic-based portfolio followed easily. The creation of an electronic portfolio which incorporates mapping of student work to the International Society for Technology in Education (ISTE), National Council for Accreditation of Teacher Education (NCATE), and Indiana Professional Standards Board (IPSB) content and developmental standards was one of the objectives of the ISU's PT3 grant. The electronic portfolio would allow students to showcase their work with technology infused throughout and provide video clips of practicum experiences or student teaching that are demonstrations of meeting various standards. Additionally, artifacts that are created using technology or have technology relevant components can be easily included. As Chow and Rogers (1998) and ISTE (2003) have pointed out, the electronic portfolio can serve as a mechanism to document students' progress in achieving relevant standards and their growth over time, faculty can continue to engage in authentic assessment of student outcomes, and faculty and administration can engage in evidence-based decision-making.

First Attempt at an Electronic Portfolio System

The PT3 implementation team, which included faculty from both elementary and secondary education, as well as technology staff members and an evaluator, decided to have students create their portfolios using FrontPage (see Figure 1). FrontPage was chosen because it was available to students through ISU's Microsoft Campus Agreement. Within the portfolio

students linked their artifacts to the designated standards. Elementary education decided to use Interstate New Teacher Assessment and Support Consortium (INTASC) standards, while secondary education used IPSB developmental standards, as the backbone for their respective portfolios. Additionally, the secondary education program required students to provide reflections on their work, while the elementary education program did not institute this across classes.

Figure 1. Example of an Original Portfolio Created Using FrontPage

In fall 2001 the technology team, comprised of the director and assistant director of Information Technology Services for the College of Education, and graduate assistants began teaching faculty and students how to use FrontPage to create a portfolio. By fall 2002, the implementation team was beginning to uncover deep-seated problems with these two portfolio systems.

Emerging Issues.

The following issues were uncovered during the implementation process of the initial electronic portfolio:

- *Two separate portfolio templates*.

  Students who were seeking dual licensure were left in a quandary—Which template do I use for my portfolio? Do I need to create two portfolios in order to meet the requirements for each licensure program?

- *Faculty buy-in of the electronic portfolio.*

  Faculty members often had the technology team teach the portfolio development workshop during a class when they needed to be away. Additionally, they instructed students to direct their questions to the technology team. Hence, students lacked appropriate faculty role models, and students aptly noted the lack of faculty involvement with the portfolio.

- *Technology as an add-on within the course.*

  Some faculty had a technology proficient instructor teach the "technology part" of the course. These faculty members did not see the value of integrating technology into their teaching, which according to Roberts (2001), is related to their motivation to do so. Technology was relegated as a stand-alone piece and was not integrated into the course curriculum. Hence, students continued to lack role models who infused technology.

- *Connection to the management information system (MIS).*

  ISU was developing an MIS to track and aggregate student completion of relevant standards. This system was to document how students demonstrated competency on each standard through specific coursework. However, this system did not have work

samples tied to the students' records and it was not possible to do this using the FrontPage portfolio.

- *Scope and sequencing of technology standards throughout the curriculum.* The integration of technology through the curriculum was not developmental. For example, in a class near the beginning of preservice teachers' coursework, students might be asked to create a WebQuest. However, some students may have never viewed or used a WebQuest. Additionally, many students lacked the technology skills to create one.

Based on the continuing emerging problems, the implementation team, along with the Dean's office began exploring other options for an electronic portfolio system. The two FrontPage portfolio systems were not working and would not meet accreditation needs. With an upcoming NCATE visit and the timeframe of the PT3 grant, it was imperative to move quickly to resolve the portfolio dilemma.

New Directions

Creating a Roadmap for Adoption of Standards.

In April 2003, at the request of the PT3 implementation team, the university's Teacher Education Committee (TEC) was asked to re-examine ISU's adoption of the ISTE-National Educational Technology Standards (NETS). Previously TEC had adopted the ISTE-NETS, to guide the integration of technology into the teacher preparation programs; however, an action plan was never articulated. After reconsideration, TEC adopted the 2002 Technology Performance Profiles for Teachers Preparation. The 2002 profiles are significantly more comprehensive than what TEC had initially adopted and they suggest ways programs can

incrementally examine how well candidates meet standards. Additionally, in order to implement the alignment of course learning outcomes with the standards, TEC adopted comprehensive matrices that align course learning outcomes with three of the four profiles (i.e., General Preparation Performance Profile, Professional Preparation Performance Profile, Student Teaching Performance Profile) defined in the standards.

In addition, the university adopted the IPSB content and developmental standards as the standards to be documented in the MIS system. This was facilitated with the strong backing of the administration, as well as key faculty. With the reevaluation of the portfolio's direction it was also determined that these standards would be used to assess student performance in both the elementary and secondary levels.

Creating a Required Technology Course.

In the discussion of how technology standards alignment takes place in the teacher education program it was deemed appropriate to have the General Preparation Performance Profile covered in a required technology course. This was done to facilitate a common understanding of technology. Beginning in fall 2003, all incoming freshmen and transfer students at ISU are required to demonstrate computer literacy either through an exam or enrollment in an approved general education course that specifically addresses computer literacy skills. In addition to developing foundational skills in this course, students demonstrate technology proficiency through course assignments.

This course is just a piece of the overall strategy of standards alignment by which all students are prepared with general knowledge of software applications as demonstrated by their successful completion of this requirement. However, this course does not adequately prepare future teachers to apply the pedagogical aspects of technology in the classroom. The pedagogical

aspects are covered in the other profiles (i.e., Professional Preparation Performance Profile, Student Teaching Performance Profile), which are integrated into other courses and activities. This strategy reiterates the important role technology plays in standards-based teacher preparation programs. In order to document this integration of technology into the teacher education courses, faculty members designed facilitating activities.

Documenting Facilitating Activities.

Selected faculty members in the summer of 2003 were asked to prepare facilitating activities for teacher education courses. Elements of the facilitating activities include course title, technology skill level (i.e., beginning, intermediate, advanced), ISTE-NETS addressed, overview and instructional context, curriculum with emphasis on technology, goals of the activity, advanced planning requirements, resources needed, suggested actions for completing the activity, samples of student's work, and assessment rubric. To assist faculty members in creating the facilitating activities, two faculty members from other universities consulted with ISU faculty members on the development and appropriateness of the facilitating activities.

In some instances, the facilitating activities were merely formal documentation of experiences already incorporated in the course and the development of standards-based assessment rubrics, while in other instances the facilitating activities provided ideas of how faculty members can integrate technology into the course. For the latter, the courses did not previously incorporate technology.

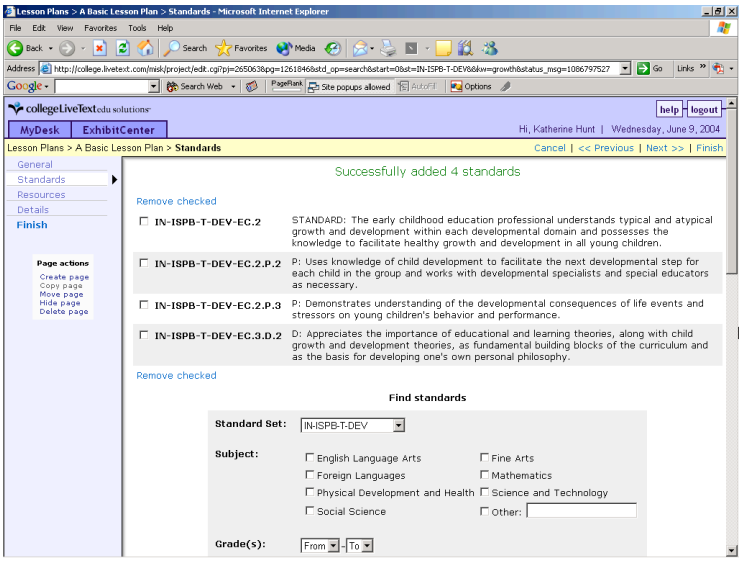
Hence, course experiences already in place were re-designed such that technology enhanced the activities and standards-based assessment rubrics were created. The goal was not to add technology as stand-alone experiences or assignments, but rather emphasize that learning can and should be enhanced through the use of technology. The creation of the facilitating

activities provided an excellent bridge to electronic documentation of standards through the use of LiveText™, a commercially available online documentation and portfolio program.

Implementing Electronic Documentation.

In early summer 2003, the decision was made to adopt LiveText™ as the electronic documentation system for the teacher education program. Students purchased access to the system much as they would a textbook when they entered the teacher education program. Elementary education majors purchased access in their freshman year and secondary education majors purchased access to the system in their junior year. The program allowed a relatively easy way for faculty and students to align standards with coursework. Figure 2 shows how standards have been added to a basic lesson plan a student creates.

Figure 2. Standards Added to a Student's Lesson Plan



Assessment.

LiveText™ allows faculty to create online assessment rubrics linked to the standards and students can submit their materials and receive feedback for the class through LiveText™.

Hence, the assessment rubrics developed for the facilitating activities are being used in LiveText™ to document the meeting of standards (See Figures 3 and 4).

Figure 3. Creation of an Assessment Rubric in LiveText™

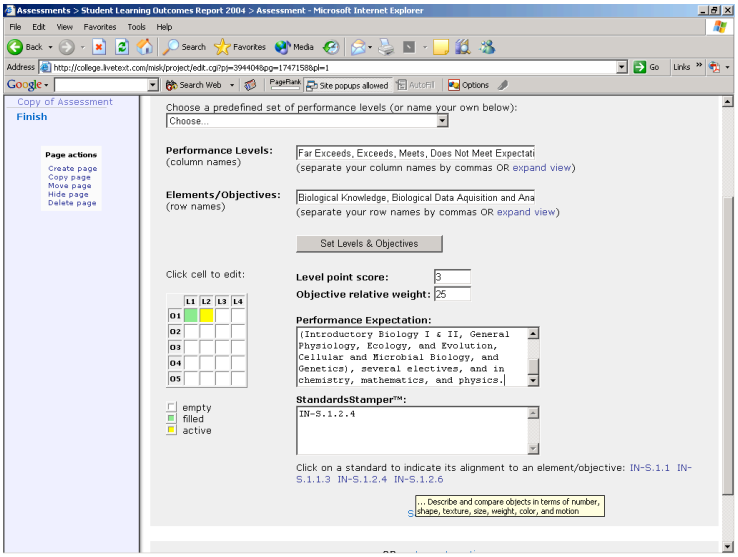
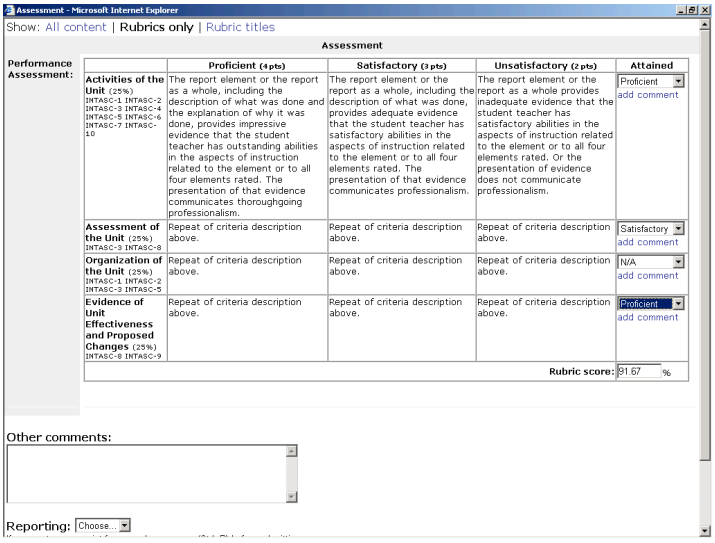
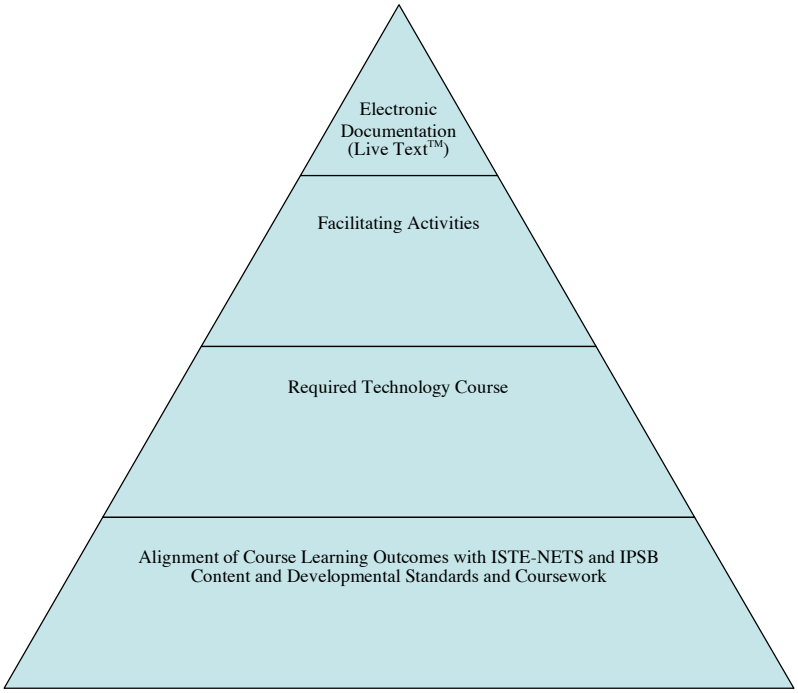


Figure 4. Example of a Completed Assessment Rubric in LiveText™



This method of assessment keeps students' artifact and the assessment outcomes in one location. This allows students to easily revisit previous work and note growth over time. Additionally, this allows the administration to aggregate data for program evaluation and to meet the growing need to provide student outcome data for accreditation purposes. Figure 5 provides a visual overview of how the various pieces align course learning outcomes with the standards and provides a mechanism for documentation of those standards.

Figure 5. Conceptual Framework for Developing the New Portfolio System



LiveText™ was planfully introduced into the curriculum. Extensive professional development, including workshops and one-on-one, on-time assistance was provided, and continues to be available, to both faculty and students. We began in fall 2003 with 24 classes and during spring 2004 the remaining elementary, early childhood, special education, and secondary education courses began using LiveText™. Some of the content area courses have begun using LiveText™ with the remaining to begin implementation this year.

Near the end of the second semester of use, we conducted a short survey to ascertain students' use and comfort with the new electronic documentation system. Faculty distributed the surveys in their classes and 248 students participated. Students reported using LiveText™ in 0 to 4 classes (M = 2.03, SD =.95). Trainings were conducted in most of these classes, and 69% of

the students reported that they understood what they needed to do at the conclusion of training. The majority of students conveyed that at least one of their instructors had posted lesson plan (79%), project (87%), or assessment (69%) templates. Furthermore, for students using the templates, most found these moderately to extremely easy to find or use. Additionally, the majority of students reported that they knew how to upload lesson plans (56%), projects (58%), or assessments (60%), and create lesson plans (55%),or project (52%) artifacts within LiveText™. Among those using these components, the majority reported feeling moderately to extremely comfortable uploading or creating artifacts. These data mirror the components that faculty reported using.

When students had questions about LiveText™ they sought help from several sources. The three most popular sources were other students (76%), their current instructor (66%), and ISU technology staff (42%). Only a few (11%) used LiveText™ training materials, LiveText™ helpline (2%), or LiveText™ e-mail (5%).

Students were also asked to consider if as a professional, they would use LiveText™ and to provide a rationale for future use or non-use. Responses to the open-ended question fell into three themes, related to a cost-benefit analysis. At one end, students provided only positive comments and planned to continue to use the system as teachers. For example, they understood the power of the tool for providing templates, keeping a current portfolio, linking standards to lesson plans and other work, and sharing ideas for unit and lesson plans with others. In the middle were those who responded that they may use LiveText™, citing that they needed to become more comfortable with the system or would use it if their school did. At the other end, students provided only negative comments relative to barriers, such as cost, lack of comfort in

using the system, or relevance. We are continuing to conduct trainings on the use of LiveText™ and discuss the use of the system, in order to address students' perceived barriers to future use.

Important to note, unlike the first attempt at implementing a portfolio system, this time the entire teacher education program was on-board. The overall system to document standards for accreditation agencies and the ability for students to create a professional portfolio that aligned with standards finally had taken place. All of the parties involved with the creation received something of value.

Recommendations

We believe several key components have lead to our success with our second attempt at an electronic portfolio system. These include the following:

- *Faculty buy-in*

  This was accomplished in four ways including: 1) showing the relative ease of connecting assessment rubrics and students' work; 2) simplifying the ability to collect artifacts for accreditation agencies; 3) providing a financial incentive for faculty to create and implement facilitating activities; and 4) providing a technical support structure that allows faculty to receive one-on-one on-time assistance so their questions can be answered when they occur.

- *Support from the administration.*

  During our second portfolio attempt, the dean's office provided the necessary vehicle to eliminate the original portfolio project, as well as the leverage required to align the needs in a common direction. This allowed all stakeholders to realize that the issue

was not whether an electronic portfolio was going to be used but rather what electronic portfolio product would best meet the needs of the programs.

- *Creation of a roadmap.*

  The electronic portfolio could not exist separate and apart from coursework. During the second portfolio process it was important to map all the standards across the courses (see Figure 5), so that it was clear which standards needed to be covered in a particular course. Then facilitating activities were created that aligned these standards to student activities. Finally, the portfolio became the vehicle to store student work artifacts, along with the faculty assessments of that work. This was vital to giving the portfolio meaning for both faculty and students.

- *Development of an extensive professional development program.*

  A number of workshops, one-on-one training sessions, and on-time assistance were all elements that helped faculty and students adopt the new system. Interviews with faculty showed this was key to making all the diverse elements of the project make sense and provided a big picture of how everything fit together.

These recommendations are a product of what we learned from our initial failure and subsequent success. These can be applied beyond developing a portfolio system to integrating technology more broadly into the curriculum. The old adage, “if at first you don’t succeed, try, try again” worked in this case. But an important element in this was learning from the mistakes of the first portfolio.

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