Digital Portfolio Workbook for Pre-Service Teachers

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Abstract: The purpose of this project was to develop an instructional workbook for pre-service teachers to develop their digital portfolios using Adobe Acrobat software, in response to California Commission on Teacher Credentialing requirements. The print-based workbook provided step-by-step guidelines for use in the development, maintenance and distribution of teachers’ professional portfolios. Content was developed from subject matter expert interviews, needs and content analysis, and existing materials on Adobe Acrobat software and professional portfolio development. The workbook was evaluated through expert reviews, one-on-one learner validation, and a peer review field test. Data were collected to ascertain the usefulness of the workbook through interviews and surveys. The result of the evaluation indicated that this workbook was an effective tool for helping pre-service teachers to develop their professional portfolios and as a subsequent resource for portfolio development and software use.

I. Background Information

Background

Significant study has been done on the validity of portfolio development as a means of assessing student work. In recent years, the California Commission on Teacher Credentialing (CCTC) adopted requirements for teacher preparation programs within the state to include the development of a professional portfolio as a means of evaluating new teachers. While in their credentialing programs, preparing teachers are required to begin developing their professional portfolio for use within the program as well as for potential employers. The trend toward portfolio-based assessment has now caught up with technology and pre-service teachers are required to develop portfolios in a digital format. While the CCTC’s requirements have caught up with current trends, technology training for teachers remains minimal at best.

Purpose

When this project began, I was approached by the principal investigator of a federal grant at my university and asked to expand the scope of the project to include more topics as the state requirements expanded. Due to the gap between expectations and available training, a print-based workbook was developed to train pre-service teachers in digital portfolio development using Adobe Acrobat as an authoring tool. The goal of using Adobe Acrobat was to create transferable skills for pre-service teachers which could be adapted to the classroom environment for cost-savings, portability, and accessibility.

Significance

The Adobe Acrobat Digital Portfolio Workbook takes a project-based learning approach to ground the learner in the software’s functionality. Since the goal of the project incorporates not only the short-term development of a professional portfolio, but also the transference of those skills to in-class development for the longer term, a project-based approach with hands-on activities allows for stronger retention of material presented. The benefits of this project are multifaceted: 1) Free training will be available for distribution to pre-service teachers; 2) Pre-service teachers will have a completed digital portfolio for educational and professional use after completing the program; and 3) Extensive cost savings can be realized by teachers within the classroom by learning Adobe Acrobat software skills while developing their portfolios.
II. Design Rationale

Introduction and Literature Review

New requirements for California Teaching credential applicants state that a digital portfolio must be completed for review by the CCTC prior to completion of a clear credential. For future teachers, adopting a technology for their portfolio that can serve them in the classroom in the future is more productive than learning new software solely to develop a portfolio. Boulware and Holt (1998) state that “an important outcome for pre-service teachers…is the development of their professional portfolio” (p.60). By learning to use Adobe Acrobat to develop their digital portfolios, teachers can build skills in software that saves time, money and is compatible with any student’s technology resources. To meet these dual needs, an Adobe Acrobat Digital Portfolio Workbook (DPW) has been developed for use with pre-service teachers in a credentialing program.

Research of existing tools for portfolio development was conducted, including the tools offered by My eCoach.com, TaskStream.com, Dr. Helen Barrett’s resources and cds, and a review of stand-alone software to author portfolios such as Microsoft Word, PowerPoint, InDesign, and Quark Xpress. The limitations of the tools and software available to teachers for this purpose, as well as learning curve required to gain proficiency, led to the selection of Adobe Acrobat as authoring tool for both the digital portfolio being developed by learners and the DPW.

A project-based learning approach was utilized in the development of the DPW to enhance learner retention, increase user satisfaction, and model future behavior for teachers to use when transferring skills to the classroom. Upon completion of the DPW learners will have completed a working digital portfolio, providing instant feedback of success and a sense of self-efficacy with technology use.

Needs Assessment

Research was conducted with students currently enrolled in the credential program, credentialed teachers, university faculty, grant administration, and resources available from the CCTC to determine the needs of pre-service teachers in developing their digital portfolios. In interviews with experts in pre-service teacher training, concern was expressed about the gap between CCTC requirements and the abilities of the target audience. In addition, they illustrated the gap between course offerings and skills needed to develop digital portfolios.

While credential students are required to take a course in technology, the courses offered currently only provide overview instruction in software. To create a digital portfolio, a higher level of understanding is necessary, and multiple options exist. Using Adobe Acrobat software to create a portfolio meets not only an immediate need, but also gives future teachers a greater understanding of a useful tool for their profession. Knowing how to create and manipulate .pdf files enables teachers to keep updated portfolios throughout their careers as well as learn productive software for use in developing handouts that are cost-effective, web-friendly and accessible to all students, parents, and/or administrators. Since the skills learned within this training are likely to be used repeatedly, print materials, which can be used as future reference and can provide detailed instruction, will be the most useful for the audience.

Content/Task Analysis

Adobe Acrobat software provides users with a wealth of functionality. The target audience for the DPW, however, is not a highly technology-comfortable group. For that reason, tasks and functionality were identified that are essential to the task at hand, digital portfolio development, rather than gaining an in-depth knowledge of the software. Teachers want to know what they need to know in order to get the job done, not spend time learning about a bunch of bells and whistles they are not likely to ever use. The core skills required to develop a digital portfolio are covered within the DPW, rather than extensive training in all of Adobe Acrobat’s tools. Key tasks were identified during the task analysis process in developing the DPW and are reflected in the final product.
Learner Analysis

Upon graduating from a credential program, pre-service teachers should have basic computer literacy, and are required to take one course in technology to meet that requirement. The target audience is college-educated, and has access to computer labs with Adobe Acrobat software and internet access on campus. They are able to self-direct their own study of materials, and operate a computer independently. Due to professional goals and CCTC requirements, the learners are highly-motivated and deadline-driven.

Goals and Objectives

During the research conducted with experts in training pre-service teachers, the goals of the DPW were developed and reviewed. The workbook was developed based on the following terminal objectives:

- Given the printed workbook and a computer with Acrobat software, learners will be able to:
  - Create their own electronic portfolio
  - Insert and extract pages of their portfolio
  - Assign titles to pages within the portfolio
  - Link pages within their portfolio to the web
  - Create a link to their personal email
  - Customize the portfolio’s opening preferences according to what they want their viewers to see on screen

Media Selection

Creating a printed workbook, a take-with resource, allows credential students easy access for immediate needs as well as serves as a springboard for future technology use within the classroom and for outside classroom materials. Teachers like to keep materials for future use, as well as take notes. An online resource, while it may contain more dense information, does not serve as a functional working tool while the user is walking through the process. In addition, as beginning technology users, the audience is not likely to be used to or comfortable with toggling between programs in order to follow their instruction.

III. Design and Development

As the instructional designer on this project as well as one of the subject matter experts, I took a linear approach to collecting information, writing content, and creating graphic elements. Beginning with researching current requirements and immediate needs of credential students, I was able to write content that was concise, directly reflected the target audience’s needs, and covered necessary content areas for the development of digital portfolios. With an outline of written content to cover, screen shots were gathered and merged with text within the workbook. The DPW was laid out using Quark Xpress design software and final pages were compiled and organized using Adobe Acrobat.

Following initial development, an iterative review process began. At this time peer and outside subject matter, design and instructional design expert reviews were conducted in order to refine content and look and feel. That feedback was incorporated and used to finalize the project to a ready-for-use state.

IV. Usability Review

Expert review was conducted with instructional design experts, graphic design experts and subject matter experts. Instructional design experts were utilized for review of the objectives, sequencing, and content integrity. Graphic design experts were utilized for the review of visual elements, styles and layout of the workbook. Subject
matter experts were utilized for their expertise in Adobe Acrobat, professional portfolio development and experience working with pre-service teachers.

One-on-one reviews and a field test were conducted to gather formative evaluation data. One-on-one reviews were conducted with users who would be potential workshop leaders and those who would disseminate materials to the target audience. These reviewers teach the target audience and maintain professional portfolios of their own. Their feedback was used to refine workbook materials, content areas, and evaluation tools for use in the DPW field test.

The field test, carried out with a group of pre-service teachers, enabled data to be collected for final revisions to the workbook content. The field test confirmed that the workbook could stand alone, be used as a future resource, and enabled successful completion of a professional portfolio, even with novice technology users.

IV. Summary and Conclusions

Upon graduating, credential students must create an electronic portfolio. With the Adobe Acrobat Digital Portfolio Workbook, teachers who choose to use Acrobat for this process will have a guide to create their portfolios and to use in their career as a teacher. Creating a printed workbook, a take-with resource, allows credential students easy access for immediate needs as well as serves as a springboard for future technology use within the classroom and for outside classroom materials. The constructivist, project-based approach implemented in the development of the DPW enhances learner retention and allows hands-on application of the material being learned. By limiting the scope of the software features covered within the training program, an audience of infrequent technology users is eased into technology usage within the scope of meeting immediate needs. In the future, expanding the scope of the materials or creating a secondary resource for more advanced applications of the software that are useful to pre-service teachers would be beneficial. Adding video and sound to a user’s portfolio would take them a step further into technology usage and interactivity experience, further engaging them in the use of technology for educational purposes.

References