

E-Portfolios: Their Creation and Use by Pre-service Health Educator

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Abstract

English:

As the utility of professional portfolios has evolved so has the sophistication of the portfolio itself. Early portfolios were no more than a compilation of written documents presented in a logical format in a manila folder or three-ring binder. However, with the on-going development of enhanced computer hard- and software, a digital format of a portfolio (e-portfolio) offers a great deal of potential. The purpose of this article is to present some insight into the development of e-portfolios, advantages over paper-based portfolios, and their application to the health education profession by pre-service health educators.

Spanish:

En la medida en que la utilidad de los portafolios profesionales ha evolucionado, así mismo ha sucedido con la sofisticación del portafolio en sí mismo. Los primeros portafolios no eran más que una reunión de documentos escritos presentados en un formato lógico en un folder de manila o en un folder con ganchos de perforar. Sin embargo, con el constante desarrollo de los equipos electrónicos de computador, un formato digital para portafolios (portafolios electrónicos) ofrece un gran potencial para el futuro. El propósito de este artículo es presentar algunas reflexiones de los educadores en salud de pre-servicio sobre el desarrollo de los portafolios electrónicos, las ventajas que ellos tienen sobre los portafolios escritos y sus aplicaciones en la profesión de educación para la salud.

Keywords: *performance based assessment; portfolio assessment; portfolios*

Introduction

The use of professional portfolios to demonstrate competence to practice has gained in popularity and utility in recent years. In education, for example, research shows that portfolios enable authentic assessment of candidates (Barton & Collins, 1993; Johnson, 1999), facilitate certification of accomplished practitioners (National Board for Professional Teaching Standards [NBPTS], 1989), and are constructive instruments for professional development of faculty (Wolf, Whinery, & Hagerty, 1995). In health education, portfolios have been advocated to link CHES competencies to academic courses (Cleary, 1992), assess health knowledge and skills of K-12 students (Cleary, 1993; Council of Chief State School Officers [CCSSO], 1997) and communicate qualifications to potential employers (Cleary, 1992; Cleary & Birch, 1997).

The creation of professional portfolios by students is not new to the health education profession. Many health education departments in colleges and universities have been requiring pre-service health educators to create a manila folder or three-ring binder (paper-based) version for years as a means of presenting evidence of their knowledge and skills to perform the responsibilities and competencies as entry-

level health educators. These paper-based portfolios have served the pre-service health educator well. However, with the ever developing advancement of computer hard- and software, the tools are now available and affordable to create digital formats of portfolios (e-portfolios). Many administrators believe that the e-portfolio concept will be the next major development in campus computing (Young, 2002). E-portfolios offer all the benefits of paper-based portfolios and more. "The interactive, non-linear attributes of electronic media, which may include audio, video, text, numerical data and graphs, have potential to bring depth and richness to student work and understanding and offer an efficient storage and access as well" (Mullen, Bauer, & Newbold, 2001, Background section, para. 8). For example, in paper-based portfolios pre-service health educators have attempted to *demonstrate* their competency in the area of program planning by including a copy of a program plan they developed as part of a professional health education course. However, with an e-portfolio those same students could present the same written program plan but now enhance its presentation. This may be done by adding an explanation of steps taken to create the plan or the process they went through to carry out

the needs assessment via a link in their portfolio to a video / audio component.

The benefits of creating an e-portfolio opposed to the paper-based media are not limited to an enhanced presentation of materials and competencies. For the students, using a digital format provides proof of personal advancement in new skills such as the ability to effectively integrate technology into mainstream professional tasks. The completion of such a project constitutes personal and professional confidence and provides the students with a tool they can use to enhance the marketing of themselves during the job search. In addition, the development of an e-portfolio forces both students and faculty members to further develop their technology-related knowledge and skills. Although computer use is more of a norm rather than the exception on college campuses, students and faculty alike have varying abilities with technology. This requires additional in- and out-of-class time to become familiar with both design and application processes, which in turn will strengthen computing skills. In some cases, it will mean that faculty will be learning with the students. And finally, because e-portfolios grant an immediate method of assessing learning, they can enhance the academic advising process between faculty members and students.

Starting the E-portfolio

The process of creating an e-portfolio should begin early in the professional preparation of students, preferably in an "introduction to the profession" course. This would allow students to be introduced to the responsibilities and competencies of an entry-level health educator. In addition, the students can create the "skeleton" for their e-portfolios that can be used throughout their professional preparation program. In an introductory course, it would be reasonable to expect students to be able to:

1. Determine the purpose of the portfolio. For example, students should consider how the portfolio will be used. Will it be used for assessment in individual courses and/or for program assessment? Will it be used for marketing one's skills and knowledge when looking for employment? Also, the students should consider who will be viewing the portfolio, such as instructors, program administrators, future employers and the students themselves (Claywell, 2001).
2. Establish an account (space) in the college's / university's system where the e-portfolio can be stored and accessed, thus enabling students to create a Web site.
3. Decide on the organization of the e-portfolio. The index page serves as a table of contents and a guide for finding or accessing artifacts, Web sites, and other information included in the portfolio.
4. Learn how to create a Web page including the following components:

- a. Formatting pages using the tools provided. Students have many options in choosing kind and size of print; colors for background, print and links; and graphics.
- b. Creating links (electronic connections) to artifacts (e.g., completed course assignments and projects) and Web sites.
- c. Copying and pasting documents or text artifacts to create Web pages.
- d. Inserting images such as digital photographs, Internet graphics, or scanned images.
- e. Publishing (putting the portfolio on the WWW) the Web pages.
- f. Learning the rules of copyright on the Internet, copyright of photographs and other images, and Americans with Disabilities Act (ADA) compliance issues.

The tasks listed above are skills that even the least technologically savvy students can master. Once students feel comfortable with these skills, many may experiment and add to these skills on their own. In fact, as students keep adding artifacts and links to their portfolios, the finished products will likely look very different than the originals.

It is at the beginning of the e-portfolio development that the medium of the e-portfolio needs to be decided. There are several electronic presentation software programs that could be used, but a Web-based medium offers a number of advantages (Mullen, et al., 2001). One such advantage is the cross-platform access of the Web. E-portfolios can be created and viewed with all makes of computer hard- and software. A second advantage is that the Web is compatible with a variety of media types. Third, HTML is not a proprietary format. It is an international standard and compatible with future versions. In addition, any document created in WordPerfect, PowerPoint, or Microsoft Word can be saved and retrieved as an HTML file. Fourth, Web files can be viewed on-line or transferred easily to other media. And finally, Web-based portfolios can be viewed by a number of people at the same time.

Building the E-portfolio

Once students develop an index (table of contents) page and decide upon the organization of their e-portfolio, it becomes a matter of adding artifacts and enhancing the presentation of the portfolio as the pre-service health educator moves through the professional preparation program. The content of the professional e-portfolio should be dynamic, ever changing. As a professional health educator, one major capability is to act as a resource person. Comprising a personal e-portfolio not only develops technological skills, but also familiarizes the student with ever-changing World Wide Web materials. The portfolio itself may be used as an electronic resource directory by providing links to health-related Web sites. This process ultimately improves the students' resource retrieval and management skills.

In addition to improving technological skills, the e-portfolio presents students with an opportunity to creatively express their abilities as health educators. Adeptness of the responsibilities and competencies can be confirmed by the presentation of artifacts that were developed originally as course projects. Position papers, a personal philosophy statement, and PowerPoint presentations may provide confirmation of proficient communication skills. An example of needs assessment tools, planned programs, and program evaluation procedures serve as essential artifacts in health education planning ability. Students may also include visual examples of brochures, public presentations, or internship experiences to enhance the substance of their personal e-portfolio. Table 1 presents

suggestions for artifacts, the courses in which they may be developed, and the National Commission for Health Education Credentialing, Inc.'s (1996) responsibilities for which they provide evidence. The ideas presented in Table 1 are only suggestions. All portfolios should not look alike. In fact, the beauty of the e-portfolio is that it allows for individual expression. Expression is only limited by one's creativity and originality of presentation. Having said this, e-portfolios can be too cluttered. For example, a portfolio could contain too many animated graphics or a background that distracts from the content.

Table 1. Responsibilities, Courses, Artifacts, and Media

Responsibility	Course(s)	Artifacts	Media
I - assessing needs	Program Planning	1) Data collection tool 2) Conducting focus groups 3) Data collection tools online	1) Text 2) Digital audio/video 3) Web link
II - planning	Program Planning	1) Presentation of multi-activity intervention 2) Explanation of planning model	1) Text & digital audio/video 2) Text & digital audio/video
III - implementing	Program Planning; Teaching Methods	1) Edited presentation of lessons	1) Digital audio/video & scanned photographs
IV - evaluating	Evaluation; Internship; Student Teaching	1) Evaluation instrument/test 2) Evaluation (grading) rubrics 3) Evaluation plan 4) Presentation of evaluation data 5) Presentation of logic model	1) Text 2) Scanned image 3) Text 4) Graphs, figures, charts 5) Figure
V - coordinating	Community Health Methods; School Health Administration	1) Case study of collaboration 2) Partnering on an event	1) Text & digital still 2) Digital audio/video & scanned photographs
VI - resource person	Community Health Methods; Health Communications	1) Directory of community resources 2) Listing of online journals 3) Listing of community agencies/organizations 4) Testimonials of past or current supervisors	1) Text &/or Web link 2) Web links 3) Web links 4) Digital audio/video & scanned photographs
VII - communicating	Community Health Methods; Health Communications; Foundations of Health Education; Internship; Student Teaching	1) Public service announcement 2) Program brochure/pamphlet 3) Poster/flyer 4) Presentation 5) Advocacy letter 6) SMOG application	1) Digital audio/video 2) Scanned image 3) Digital still 4) PowerPoint slides 5) Text 6) Scanned image

By requiring pre-service health educators to “build” their e-portfolios throughout their professional preparation, they are forced to document and reflect upon that preparation. This provides students with the opportunity to better comprehend and understand how the different individual courses and their content blend to prepare them for entry-level work.

The e-portfolio could also be created as an assignment in an already existing course (e.g., health communication or health technology course) or in a credit-meriting portfolio course that students are required to complete prior to graduation. This latter option allows students to spend an entire semester creating and revising a comprehensive e-portfolio of

their accomplishments to date. The advantage of this method is that there is a concentrated period of time dedicated to the assembling of the e-portfolio. Students need blocks of time working on the computer to become proficient in technical skills. The problem with including technical instruction in several different professional courses is that instructors lose class time for teaching course content. Also, unless the course is taught in a lab that contains the necessary hard- and software, finding and reserving a lab for portfolio instruction may be difficult. If class time is not provided to work on their e-portfolios, students may not have adequate blocks of time when an instructor is present to help them complete the necessary work.

The biggest disadvantage of limiting the creation of the e-portfolio in a single course is limiting the evaluative feedback for the students as they progressively “mature” as a professional. However, if

students have portfolios in progress that carry over from course to course, instructors can evaluate and review only the artifacts that are relevant to their particular courses. They will not have to evaluate an entire portfolio.

The overall compilation of an e-portfolio allows students to become more involved in their academic progress and to understand how disparate courses become a well-rounded professional education. The implementation of a required personal e-portfolio in the health education profession encourages self-responsibility and personal empowerment in a student's educational preparation. Thus, students completing the e-portfolio project enter an interview primed and more cognizant of their professional capabilities.

Table 2. Portfolio Assessment Rubric

Content	Criteria	3	2	1	0
Components	Evidence of all responsibilities are presented	All criteria met	Most criteria met	Some criteria met	Needs more work
Content	Quality of the artifacts	All reflect CHES-related knowledge & skills	Most reflect CHES-related knowledge & skills	Some reflect CHES-related knowledge & skills	Few/none reflect CHES-related knowledge & skills
Organization	Portfolio is presented in a logical order & is easy to follow	All criteria met	Most criteria met	Some criteria met	Needs more work
Navigation through the portfolio	Easy to follow and execute	No problems in navigating	Few problems in navigating	Several problems in navigating	Serious problems in navigating
Reflection and Narrative	Clearly written	Excellent reflection, self-assessment, & analysis	Good reflection, self-assessment, & analysis	Average reflection, self-assessment, & analysis	More descriptive than reflective
Multimedia/ Graphics	Nicely used; complement CHES-related knowledge & skills	Excellent computer & artistic skills	Good computer & artistic skills	Average computer & artistic skills	Poor computer & artistic skills
Visual appeal	Easy to read font with complementary backgrounds	Excellent	Good	Average	Poor
Mechanics	Punctuation, capitalization, spelling, sentence structure, & word usage	0 to 1 errors	2 to 5 errors	6 to 9 errors	More than 9 errors
Commitment to the profession		Serious commitment	Good commitment	Average commitment	Little evidence of commitment
References	Citations & references presented in correct APA format	0 to 1 errors	2 to 5 errors	6 to 9 errors	More than 9 errors

Evaluating the E-portfolio

To keep pre-service health educators on track while they build their e-portfolios, both formative and summative assessment of the portfolios are recommended. Early assessment should “be more formative in nature, attempting to guide students in their learning practices and overall career goals; later assessment will judge performance more directly, applying the range of standards in an increasingly summative way” (Mullen, et al., 2001, Portfolio Assessment section, para. 1). The formative assessment can take place as part of individual courses where the responsibilities and competencies are covered based upon artifacts that are created as part of the course assignments. Summative assessment could include the use of panels comprised of faculty and / or practicing health education professionals. These panels of individuals could review the e-portfolios of the pre-service health educators as part of a capstone course, such as an internship or senior seminar. To assist panelists in conducting their assessments, it is suggested that an assessment rubric be developed. An example of a CHES-related rubric is presented in Table 2.

Conclusion

With the advancement of digital technology, students now have the resources to present self-advocating professional information and materials in a well-structured and progressive manner. E-portfolios give students of all disciplines the opportunity to meet the needs relevant to their professional practice. The composition of an e-portfolio encourages faculty-student mentoring, peer-supported active learning, and continuous reflection of professional maturation. The methodology of creating, improving, and maintaining an e-portfolio necessitate ceaseless self-reflection and acquisition of new skills. Such skills will assist health educators to be forward-thinking and flexible professionals who will be effective in the divergent duties required of a health education specialist.

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