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ePortfolio: A Tool of Reflection and Self-Evaluation in Teaching

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Abstract

Emerging standards for technology integration create an opportunity for teacher preparation institutions to reshape existing curricula and academic preparation requirements. In response to these standards, as those advocated by the National Council for Accreditation of Teacher Education (NCATE), some educational institutions began to encourage and train faculty and pre-service teachers to go beyond the simple use of technology, as in the use of systemwide networks to exchange e-mail or post student assignments and grades, to utilizing more complex integration as in the development of electronic portfolios. By using these portfolios, learners in pre-service teacher programs employ the tools of learning to integrate technology, and to document and demonstrate professional growth and development. This paper discusses the theoretical underpinnings of the study of student learning and collaboration through the development of electronic portfolios and the relevant research on the efficacy of their utilization as a form of self-evaluation and reflection within the context of school reform.

Introduction

The trend in ePortfolio development evolved as universities and colleges of education throughout the world became increasingly concerned with meeting new standards in educational reform initiatives pertaining to technology integration and effective teacher preparation. The educational reform agenda, and the pressures to meet advanced standards in preparing cadres of highly qualified and technologically savvy individuals made it a necessity for higher educational institutions to explore innovative alternatives.

The ePortfolio has been one of those alternatives for it reflected a vital shift from traditional methods of teacher development to different approaches that emphasize development of technology skills to reshape and improve teacher preparation, certification and development. According to Simmons (1990) and Wolf & Dietz (1998), Portfolios are generally developed for three main functions as:

1. A learning portfolio, where it is used as formative evaluation tool to support professional development;
2. An Assessment portfolio, where it is utilized for summative performance evaluation; and
3. An Employment/professional portfolio to demonstrate knowledge and skills required for specific career choices.

The first two functions are more student-oriented, whereas the third is designed to demonstrate professional competencies, where the portfolio includes, for example, a resume, artifacts of best practice, a statement of teaching philosophy, letters of recommendation, awards, official documents, curriculum innovations, lesson plans, reflections, and personal evaluations (Hurst, Wilson & Cramer, 1998). Within the educational field, portfolios have been predominantly designed to explore the former two types of portfolios for the purposes of learners' assessment (Cole, Ryan, Kick, & Mathes, 2000).

Portfolios have been around for decades, prior to the vast advancement in informational technology and digitization, primarily in print format composed of papers, binders, copies of relevant information, paper files. These traditional portfolios were merely collections or depository of artifacts that lacked alignment to pedagogical standards, or performance indicators. The increasing reliance on technology has transformed this process to become replicable electronically where the content is easier to collect, organize, store, and edit, and made available to a wider audience, as well as connecting it to a defined set of performance standards.

The emergence of ePortfolio, also known as electronic portfolio or digital portfolio, in the mid-1990s constituted a small step within the school reform agenda and teacher accountability where learners construct, articulate, and assess their own learning. Thus, the utilization of ePortfolio by teacher education students responds to some of the challenges faced by colleges of education in preparing critical thinkers who participate in the learning process rather than act as passive recipients.

An ePortfolio is generally defined as a purposeful collection of learners work and artifacts that have been captured electronically and designed to document and measure individuals' growth and achievement over a span of time (Wiedmer, 1998). The definition makes it explicit that the collection of artifacts is purposeful, not merely a digital notebook, a media presentation, or an arbitrarily gathered and organized collection. Hence, ePortfolios are developed for a specific purpose to meet specific objectives, and to assess current growth and future needs in a standards-based process of authentic reflection. It is during this process of authentic reflection where educators may recognize and understand themselves in relationship to their profession and exploring opportunities and strategies for continued professional growth and development.

Evolving Role of ePortfolio

During the formative years of ePortfolio development, there was much anecdotal evidence about the added value of engaging students in ePortfolio and about its impact on teacher learning. Batson (2002), after reviewing over twenty 29 ePortfolio development projects of American institutions of higher education, publishers, and technology vendors, concluded that despite a general recognition of the usefulness of ePortfolios, the key to their success was how well the campus populations were prepared to use this new tool. At the time, when Batson (2002) published his research in this field he raised few questions regarding potential pitfalls back then. Such concerns included the capacity of existing systems for storage, retrieval, and security of

electronic systems. These concerns are no longer applicable in view of the vast advancements in technology, the proliferation of using cloud storage and tight online security measures.

The widespread advancement of technology and due to concerted efforts of teacher preparation institutions, preservice teachers are becoming less intimidated with this technical approach and more comfortable to pursue it. Likewise, the responsiveness of preservice teachers to using ePortfolios has improved. Ciesielkiewicz (2019) noted that majority of students in her study who were enrolled in three undergraduate courses in different Spanish universities showed willingness to use ePortfolios in the future for learning and self-evaluation and reflection, and were less focused on these ePortfolios as mere coursework to be completed for a grade or a certificate.

Furthermore, ePortfolios have become a critical tool for self-assessment and reflection by preservice teachers. According to Sharifi, Soleimani and Jafarigohar (2016), over 85% of respondents in their study of ePortfolios indicated that they had gained great benefit by using ePortfolio, noting that such medium has enabled them to reflect on their professional growth and examine their own strengths and weaknesses. Ebil, Salleh and Shahrill (2020) have also reached similar conclusions in a study of students' use of ePortfolio over an eight-week period at a technical and vocational center in Brunei. Students in this study practiced reflection through ePortfolios designed to guide them to reflect upon their own learning. The gathered data revealed that while student performance had a moderate effect on students' level of reflection, building structured opportunities, as in the use of ePortfolio, to reflect and integrate learning can improve students' ability to reflect better (Ebil, Salleh and Shahrill, 2020).

Within the last decade, ePortfolios began to play an important role in teacher preparation and development. For example, preservice teachers at Wayne State University in Detroit, United States are required to develop professional portfolios to be used in their evaluations, as well as enhancing and stimulating their reflections and professional growth. The emphasis on what student teachers should know and be able to do is based on the Interstate New Teacher Assessment and Support Consortium (INTSAC) performance standards. The outcomes are used to evaluate student teachers throughout the year in an ongoing dialogue between interns and the assigned teacher advisor. Feedback from cooperating teachers and student teachers alike indicate that real strengths of the program are reflected in the development of clearly defined outcomes and using ePortfolio as a valuable tool of self-reflection and self-evaluation. A review of research suggests that consideration of ePortfolio development and implementation has been influenced by several factors as follows:

1. **New Teachers Role**

   In exploring and developing ePortfolios, student teachers practice leadership roles that will influence how they teach, construct, and assess learning. Senge (1990) described three essential capacities required for leadership in a learning organization: leader as a designer, leader as a steward, and leader as a teacher. In the role of the designer, the student teacher exhibits leadership in designing his or her own ePortfolio to make sure it meets the desired objectives, while at the same time he or she is acting as a steward to set his or her own direction and re-evaluate the learning process. Finally, the preservice teacher becomes the teacher leader as he or she puts into classroom practice those skills learned throughout the ePortfolio development and assessment process.

   In addition, the educational reform agenda required active participation and empowerment of its entire stakeholders. However, such empowerment and participation were not intended to merely allow occupational self-direction, but also provide an enhanced sense of efficacy and competence in the teaching profession. According to Fullan (1995), reform strategies require empowerment of teachers through increased participation in decision making that impacts teaching and learning. It is this kind of empowerment that leads student teachers to be self-directed in teaching, constructing, sharing, and assessing their own learning and knowledge. Through the development of ePortfolio, educators could reflect on their development and continue to grow professionally, that is by continuing to engage in an ongoing process of self-education and evaluation, and making their practice a satisfying source of discovery and innovation. According to Wolf & Dietz (1998), portfolios allow us to examine the complexities of professional practice in a manner like no other approach.

2. **National Certification, Assessment and Alignment with Standards:**

Colleges of Education began to investigate the development of ePortfolio as a measure to achieve national accreditation and provide for a comprehensive assessment of teaching candidates. While seeking and maintaining accreditation, the ePortfolio becomes a very valuable tool in documenting candidates' qualifications, acquisition of knowledge and skills, and the mastery of concepts and competencies needed to teach effectively in a pre-kindergarten to high school environment. ePortfolios for the purpose of documentation and assessment have become a standard requirement by various educational institutions.

In developing the ePortfolio, the teacher candidate outcomes are constructed to be relevant and rigorous, where candidates must align their outcomes with specific national and state standards, content, and pedagogy. These are often pursued for accreditation, licensing, and advanced certification. They are used to determine whether preservice teachers meet the requirements for certification and graduation. These Portfolios may be viewed as high stakes assessments when utilized for such purposes. Several organizations have been leading in this effort to strengthen quality assurance and integration of technology. They include the National Council of Accreditation of Teacher Education (NCATE) and the Interstate New Teachers Assessment and Support Consortium (INTSAC).

3. Professional Development Schools:

Educational research during the period of the last two decades on the effectiveness of professional development and teacher training exposed the inadequacy of some of the old professional development notions and traditional approaches. Such notions included the short-term training models that excluded effective follow up, adequate focus, intensity and consistency (Corcoran, 1995). The inadequacy is compounded by a limited focus on modern reform initiatives while underestimating the scope of the challenges that confront educators today, and the role that technology plays in meeting these challenges. According to Darling-Hammond and McLaughlin (2011), the success of the reform agenda is dependent on educators rethinking their own practices, constructing new learning, and destructing old beliefs, practices, and paradigms.

Furthermore, Darling-Hammond & McLaughlin (2011) spoke of a new type of schools, termed as the Professional Development Schools. Within the context of school restructuring, these schools are entities in which novices enter the profession by working with experts. These schools are also characterized by collaborative relationships and continuous learning. Fullan (1995) suggested that for essential skills of collaborative and continuous learning to be enhanced, they must be fostered from the beginning within teacher preparation programs. He reminded us that educational change being initiated at the teacher level must be accomplished at every level of the system (Fullan, 1995).

ePortfolios can have a very powerful impact on teacher collaboration, if removed from the individual context and to become shared collectively. Thus, schools and teacher preparation institutions should encourage their preservice teachers to share their ePortfolios and learn from each other. This is a form of reciprocal learning that Senge (1990) described as a phenomenon where everyone makes his or her thinking explicit and subject to public examination. The enhanced utilization of technology through ePortfolio sharing enhances this phenomenon of reciprocal learning.

4. Constructivism and Student-Centered Learning:

As the reform movement continues to advance within the educational arena, it propels educators to look further into constructing learning experiences driven by student-centered approaches rather than the traditional teacher-centered approach. In employing ePortfolios, educators become active developers and creators of knowledge to demonstrate competency in solving complex problems, analyzing and synthesizing information. This is where learning is viewed as the process of building knowledge structure by linking what is known to newly acquired information, ideas, and concepts, and integrating them to form new knowledge and understandings. Unlike traditional approaches to teaching and learning, which is teacher-centered, and facts and product oriented, the constructivist approach is learner-centered and process oriented. Thus, the ePortfolio model aligns well with the constructivist view where faculty and preservice teachers construct knowledge through a process-oriented approach.

Recommendations: Integrating ePortfolio into learning and teaching

The experiences of institutions that have implemented ePortfolio programs all point to an important practice: expert ePortfolio facilitators are needed to teach preservice teachers how to develop portfolios; and information technology staff are needed to teach them how to use the relevant online mediums and web resources. In addition, a manual on how to develop an ePortfolio and utilize relevant online mediums would be very helpful. Through collaborative writing by ePortfolio facilitators and information technology staff, both dimensions could be addressed. It is also critical for faculty who oversee preservice to have a well-rounded knowledge and skills in ePortfolio design and related technical skills. The author recommends that faculty and administrators interested in experimenting with ePortfolio should first select one or more programs as pilot projects and find answers to the following questions:

- Who wants to create and/or read an ePortfolio, and why? For ePortfolio to serve the intended purpose and work well, they need to have an authentic purpose, and to become integrated into the academic and intellectual efforts of students and faculty.

- Does the university have the hardware, technological infrastructure, and software to aid in the design and development of ePortfolios and supporting preservice teachers? If not, what will it cost and who will develop the critical infrastructure? Providing preservice teachers access to web accounts and cloud storage through their universities, and a dedicated technical support is essential for the success and effectiveness of ePortfolios.

- What is the level of technical skills of students and faculty members involved in ePortfolio pilot projects? Will participants use ePortfolio long enough to sharpen their expertise and refine their technical skills to achieve a functionally acceptable level and become personally comfortable with ePortfolio as a matter of regular practice?

- What knowledge, competencies, and skills that faculty need to develop, and what kinds of technical support can be provided to them so that they can become effective mentors to their students in the development of ePortfolios? Faculty initiating pilot project may find it useful to view the critical role of ePortfolio from a perspective that values ePortfolios as a medium to enhance skills, pedagogy, and curriculum.

- What skills will students in preservice teaching programs need to develop? These students need to master basic software like word-processing, spreadsheets as well as software, online platforms and web design that will enable them to construct effective ePortfolios; they should also have equitable access to hardware, software, online accounts and reasonable cloud storage space.

Conclusion

ePortfolios, like all innovative and creative practices, benefit from metaphors that help us bridge the gap between where our individual professionals are situated in the present and where they desire to be in the future. A useful metaphor is provided by Scardamalia, Bereiter & Bereiter (2010) who wrote in the context of distributive learning. They proposed the metaphor of a network of networks – people from schools, universities, cultural institutions, service organizations, and businesses simultaneously building knowledge within their own primary groups, while advancing the knowledge of others. The web-based ePortfolio can potentially be a valuable part of a larger communal endeavour to link lifelong learners across various programs, institutions, and communities.

While ePortfolios may require more dedicated time and effort from faculty members and new or prospective teachers, university faculty and student teachers must not be discouraged to pursue this process for it is based on well-organized and best practice approach in alignment with a set of rigorous pedagogical standards. Furthermore, developers of ePortfolio should also be conscious of the pitfalls where they may focus more on the content than process and viewing the ePortfolio narrowly as an individual self-assessment without focusing on the critical outcomes of the process, which are improved educational quality for all learners and creating a collaborative learning community that is driven by best practice.

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