

Preservice Teachers Creating Electronic Portfolios

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REFLECTION IN ELECTRONIC PORTFOLIO CONSTRUCTION

The use of portfolios stored and published in electronic formats is based on at least two assumptions. First, as performance-based assessments, they can extensively represent a preservice teacher's or teacher's competence, achievement, learning, and/or professional growth (Bartlett, 2002; Milman, 1999; Wiese, 2004). Advances in electronic and digital technology permit classroom action to be documented and stored, thus capturing classroom practice and work of teacher for asynchronous viewing by others. Because they require less physical storage space than print media portfolios, electronic portfolios are increasingly being used to document, assess, and evaluate teacher quality, including eligibility for initial teacher licensure/credential or documentation of competence with respect to teaching and technology standards (Bartlett, 2002; Peters, 2000; Wiese & Wenzlaff, 2004). A variety of models are emerging that are being labeled as electronic portfolios, not all of which portfolio experts would agree are portfolios; for example, an electronic work sample may not truly be an electronic portfolio (Barrett, personal communication, April 14, 2004; Barrett & Wilkerson, 2004). Regardless, reflection in some fashion is necessary in electronic portfolio creation. A second assumption, particularly in longitudinal electronic portfolio approaches, is that reflection will become more rich and complex as preservice teachers continue through a teacher preparation program (Levin & Camp, 2002; Mullen, Doty & Rice, 2002).

The ability to reflect, reflection-on-action, reflection-in-action, and reflective teaching are important attributes of a professional teacher and essential for teacher learning (Gilbert, 1994; Zeichner & Liston, 1996). The constructs, teacher reflection, and reflective teaching often are cornerstones in the

conceptual frameworks or mission statements of teacher preparation programs. These constructs act as fuel for professional and personal growth. The reflective process can be private and public, individually situated, and collaborative. Temporally, according to Griffiths and Tann, it can range from "rapid reflection," demanding immediate action, to "retheorizing and research" (Zeichner & Liston, 1996, p. 47). According to Griffiths and Tann, retheorizing and research is abstract, rigorous, long-term examination and rethinking of a teacher's practical theories in light of experience and academic theories.

Creating an electronic portfolio can encourage preservice teachers to be reflective about knowledge constructed during their teacher education course work (Avraamidou & Zemba-Saul, 2002; Bartlett, 2002; Carney, 2002; Kovalchik, Milman & Elizabeth, 1998; McKinney, 1998; Milman, 1999; Mullen, 2002; Norton-Meier, 2003; Peters, 2000; Wiese & Wenzlaff, 2004). A shared idea across the research studies and conceptual papers identified in Table 1 is that a portfolio process is one recognizing educators as developmental beings who construct knowledge and understanding. Collecting and selecting appropriate artifacts that document learning in relation to portfolio guidelines and expectations, the writing process, and reflection throughout electronic portfolio production can illuminate how the portfolio creator has developed as a teacher.

A previous paper in this encyclopedia, titled "Electronic Portfolios", enumerated factors thought to influence electronic portfolio development, assessment, and evaluation. These factors included: aim and purpose of electronic portfolio, "buy-in" or value factor, technology-related issues, portfolio expectations or requirements, and extent of creator freedom in design. Analysis of research findings and descriptions of electronic portfolio use suggest that these factors are also likely influences on the nature

Table 1. Preservice teacher reflection in electronic portfolios: A sampling of studies

Researchers	Nature of Reflection
Avraamidou & Zembal-Saul (2002)	Pedagogical content knowledge connections between university course work and field experiences; generic, descriptive, and brief reflection (initially) transformed to explanatory, reflective, elaborative, precise, and science-specific reflection (finally)
Bartlett (2002)	Technological issues
Carney (2004)	Dilemmas related to portfolio purpose, self-revelation, cognitive overload, ownership
Carney (2002)	Descriptions limited in scope respect to self-exposure about weaknesses, personal information, and concerns
Kovalchik et al. (1998)	Teacher as learner
McKinney (1998)	Self-awareness, evaluation of marketability, and extension of interpretive skills
Milman (1999)	Professional growth
Mullen (2002)	Context and way (oral, written) in which preservice teacher asked to reflect shape focus of reflection
Norton-Meier (2003)	Content and expectations of portfolio and audience shape writing style and focus of reflection
Peters ¹ (2000)	Understanding of self as a teacher in micro- and macro-contexts of schooling, questioning of preconceptions (phases 1 and 2) shifts to integration of practical knowledge from university course work and school learning experiences (phase 3) and ends with critical reflection on positive aspects of own teaching and challenges (phase 4)
Ring & Foti (2003)	Description, difficulty articulating connections between personal work and Florida's state teaching competency benchmarks
Wieseman & Wenzlaff (2004)	Proof of competence with respect to teacher education standards, technological survival

¹ Peters (2000) is the only study listed whose portfolio process was not electronic in storage and publication.

of preservice teacher reflection related to the portfolios. The purpose of this paper is a meta-analysis of the nature of preservice teachers' reflection in electronic portfolios when they are used for assessment and evaluation.

META-ANALYSIS OF THE NATURE OF PRESERVICE TEACHER REFLECTION

Preparation of an electronic portfolio requires a creator to act as an agent, converting actions and performance into an electronic format (McKinney, 1998). A successful electronic portfolio product is one that represents the professional, psychological, and social aspects of the creator. Wright, Stallworth, and Ray (2002) stated that the electronic portfolio allows one to compile a broader collection of one's qualifications as a teacher with respect to one's philosophy and other criteria because the e-portfolio

is a "living example of [the preservice teachers'] work" and, compared to more traditional forms of assessment, demonstrates immediate status and growth throughout a program. Hence, the technological dimension of e-portfolio construction is likely to impact the nature of reflection, for example, as in Bartlett (2002).

In addition to the technological dimension, micro-level mediating influences on the nature of reflection encompass the creator's: learning idiosyncrasies (i.e., learning preferences, assertiveness in requests for assistance, risk-taking), time management, organization skills, and preferred communication style. A key macro-level factor impacting the nature of reflection is the extent to which a culture of inquiry, reflection, and learning is present and valued in the institution and institutionalized practices.

The meta-analysis in this paper about the nature of preservice reflection in electronic portfolios is informed by Van Manen's (1977) concept of reflectivity, and examines the nature of reflection in

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