Handbook of Research on Teacher Education in the Digital Age

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Chapter 10

"Pretty Good Practices" for the Design of Teacher Portfolio Courses

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ABSTRACT

In this chapter, the authors argue that although portfolios are a popular means of teacher evaluation, they, like any other assessment, must be properly implemented if they are to realize their full potential. Accordingly, they offer seven "pretty good practices" (Mishra, 2008) for designing portfolio courses: peer feedback, authentic audience, diverse resources, learning by doing, open access, confidential spaces, and self-pacing. These practices were developed from the authors' extensive work helping teachers to develop portfolios that demonstrate their learning in their graduate studies, and they help students create portfolios that have value as both summative assessments and places for formative growth. In the spirit of "pretty good practices," however, the authors invite others to modify these practices for other contexts or to carry out research that would help refine and improve them.

INTRODUCTION

Alignment between learning activities and assessment is always critical but often overlooked. To teach differently than one assesses is to set students up for failure (Friedman & Heafner, 2007); conversely, to assess differently than one teaches is to underrepresent students' accomplishments in the classroom (Heafner & Friedman, 2008). In both cases, teachers are demonstrating their

knowledge (i.e. teaching) differently than they expect students to demonstrate knowledge (i.e. through assessment), creating conflicts or even contradictions at the heart of the learning process. Although "teaching to the test" is often frowned upon, this instructional approach should instead only be viewed as problematic when the assessment itself is problematic (Whetten, 2007). In an ideal world, teaching and assessment are aligned and founded on solid learning theories; however,

since testing is often more maligned than teaching, educational reform has often sought to replace assessments without ensuring that other teaching elements are adjusted properly. The result is that some educators "begin at the end"—they adopt new and improved assessments but ultimately create new problems because they haven't designed their courses to emphasize those improvements (Love, McKean, & Gathercoal, 2004, p. 24).

In the field of teacher education, portfolios are one of the most promising results of the search for improved assessments. Since their emergence in the 1980s, advocates of teaching portfolios have spoken of their usefulness for varied purposes and in diverse contexts. That is not to say there is no downside to portfolio-based assessment, even for its advocates. Like any other form of assessment, educators must support portfolio assessment with appropriate curricular and pedagogical strategies. Therefore, every promising feature of a portfolio entails potentially more changes educators have to make to ensure that those promises are fulfilled. Even if educators only focus on those features of portfolios that are most important for their particular context, the wide variety of ways that portfolios are used can make it difficult to know what other changes need to be made.

Portfolios may be used in many different contexts, spanning from the level of individual courses or teacher education programs (Zeichner & Wray, 2001) to entire states and countries (Wolf & Dietz, 1998). In fact, there is such wide range of uses for portfolios that Bartell, Kaye, and Morin (1998) described the portfolio as having been used "at every phase of teacher development" (p. 5); therefore, it is important to explain the context from which this chapter has emerged. For the last several years, we have been involved in helping teachers develop portfolios as part of the Master of Arts in Education (MAED) and Master of Arts in Educational Technology (MAET) programs at Michigan State University, which require a portfolio in the same way that many other master's programs require a thesis (DeSchryver, Leahy, Koehler, & Wolf, 2013). Just as master's students may be required to take a certain number of credits to complete their thesis work, MAED and MAET students must enroll in a *capstone portfolio course* to complete this program milestone; however, unlike many thesis credit requirements, the capstone course is a fairly structured class with specific lessons and homework assignments designed to guide teachers through the process of creating a portfolio.

From our extensive experience with capstone portfolio courses, we have come to understand effective practices for helping teachers develop portfolios; the objective of this chapter is to synthesize theory and draw from this experience in order to identify and describe seven *pretty good practices* for structuring courses like the capstone portfolio course. A number of researchers have bemoaned the lack of empirical evidence on the use of portfolios, especially digital portfolios (Abrami & Barrett, 2005; Evans & Powell, 2007; Pecheone, Pigg, Chung, & Souviney, 2005; Tosh, Light, Fleming, & Haywood, 2005; Zeichner & Wray, 2001). This chapter is, unfortunately, no exception to this lack of empiricism. While we have drawn upon empirical studies in developing these pretty good practices, we have not yet tested the practices empirically. Future work on effective practices for portfolio courses would benefit from further understanding of how portfolios are currently being used in the field and from empirical testing of proposed practices. We hope that this synthesis of existing theory into pretty good practices will serve as an invitation and foundation for future empirical work in this field.

We have intentionally chosen to refer to *pretty good practices* in this chapter. *Best practices* are commonly discussed in educational circles, and they serve as an inspiration for this work. However, as Zeichner and Wray (2001) have pointed out, teaching portfolios are used in so many ways that it is difficult, even inadvisable, to talk about

them in general terms. Chickering and Gamson (1987) have likewise suggested "the ways different institutions implement good practice depends very much on their students and their circumstances" (p. 3). Acknowledging this importance of context, Mishra (2008) has proposed the alternative term "pretty good practices" (para. 4), which captures the spirit of documenting helpful practices while remaining open to the need for adaptation, modification, and improvement. This chapter introduces these practices by providing theoretical grounding in the accountability and evaluation of teachers, the evolution of teacher assessment, and the emergence of the portfolio and its various roles. It then presents seven pretty good practices, describing them each in detail. Following the explanation of these practices, we conclude the chapter and highlight some potential areas for future research.

This chapter faces a particular dilemma with regards to vocabulary. Men and women who are enrolled in a teacher portfolio course are both students, in that they are studying under someone else's direction, and teachers, in that they have chosen a career dedicated to instructing others. As a result, it is not always clear how this chapter should refer to them. Some may argue for referring to them simply as students, since portfolio courses are largely designed for pre-service teachers. However, this would not only fail to take into account portfolio courses designed for in-service teachers, but it would also not be fully compatible with a vision of the portfolio as something that is created as a student but may be used throughout one's career as a teacher. The authors have therefore chosen to use the following conventions: To refer to the individual who teaches a portfolio course, the chapter consistently uses the word "instructor." To refer to those who are creating portfolios in such a course, the chapter uses both "teacher" and "student," depending on what role is being emphasized at the time. To refer to the learners for whom these teachers/students are responsible, the chapter uses the word "pupil."

BACKGROUND

This section describes how the portfolio has emerged as a response to the perceived shortcomings of more traditional assessments in the light of the increased importance of the teacher. We first discuss recent shifts in the perception of teacher accountability and the resulting shifts in teacher evaluation. We then specifically address the emergence of the portfolio as well as the roles it can play in teacher evaluation.

The Evolving Role of Teacher Accountability

An increased emphasis on teacher accountability as an instrument of educational reform helped create a need for improvements in teacher evaluation, including the portfolio. For much of the twentieth century, educational reform took the form of changes to schools' curricula, programs, and management (Darling-Hammond, 1990). Reformers made little connection between teacher quality and the quality of education, and teacher evaluation was therefore not a high priority (Darling-Hammond, 1990). However, teachers are now assumed to play a critical role in educational reform (Wolf & Dietz, 1998), and, as a result, expectations of teachers are increasing. As the media and the public at large pay more attention to teachers (Corcoran, 1995b; Darling-Hammond, 1990), they charge them with increased responsibility for pupils' learning and behavior (Corcoran, 1995a; Corcoran, 1995b; Pecheone et al., 2005; Smits, Wang, Towers, Crichton, Field, & Tarr, 2005) and expect higher levels of professional development (Corcoran, 1995a) and better accommodation of diversity within the classroom (Corcoran, 1995b). Teachers also face higher expectations of their abilities to use technology (Corcoran, 1995b; Gatlin & Jacob, 2002), especially in a modern context where educational technologies quickly become obsolete (Mishra & Koehler, 2006).

The perception of the teaching profession as critical for educational reform has created a need for ensuring that those who enter the profession are up to the task. As a result, policy-makers and reformers have turned to evaluation as an instrument of accountability (Anderson & DeMeulle, 1998) and have established standards to define the qualities desired in teachers (Pecheone et al., 2005). This evaluation now takes place throughout a teacher's career. Before their teaching careers even begin, prospective teachers may be evaluated to determine admission into, continuation in, and graduation from a teacher-training program (Haney, 1990). Then, during their careers, teachers are evaluated to determine their suitability for hiring and promotion, encourage the improvement of their performance, and give legitimacy to their schools (Darling-Hammond, 1990; Natriello, 1990).

The Evolution of the Evaluation of Teachers

Increased emphasis on the teacher's role in educational reform has created a need for not only more assessment but also better assessment. In the light of teachers' newfound importance, more traditional forms of assessment were seen as dissatisfying (Stone, 1998) and inadequate (Wolf & Dietz, 1998). The inadequacy of these established assessments was largely because they were either too divorced from context or too shallow to truly reflect mastery of either teaching as a whole or individual teaching skills, including educational technology (Abrami & Barrett, 2005; Wolf & Dietz, 1998). Once aware of these problems, reformers set out to identify assessments that would "faithfully reflect the richness and complexities of teaching and learning" (Wolf, 1991, p. 130) and that would promote authenticity, active learning, problem solving, and other features emphasized by modern learning theories (e.g. socio-constructivism; Abrami & Barrett, 2005; Smits et al., 2005; Wolf & Dietz, 1998).

As a result of this search, many teacher evaluators and educators have turned to performance assessments based on state or other standards (Diez, 1998; Pecheone et al., 2005). Performance assessment—which includes the portfolio—puts an emphasis on observing authentic, so-called *real world* acts and behavior (Crow, Georgi, & Crowe, 1998), thus bridging a gap found in traditional testing. There are now a large number of methods and a broad range of literature for teacher educators and evaluators to draw from as they decide how to carry out assessment in their particular roles (Darling-Hammond, 1990). It is, however, important to note that reformers have not entirely abandoned more traditional forms of assessment. Advocates for newer forms of assessment typically advocate the introduction of innovative means of evaluation alongside other, more established means in a way that allows each form of assessment to balance out the shortcomings of the others (Darling-Hammond, 1990; Shulman, 1988; Wolf, 1991).

The Emergence and History of the Teaching Portfolio

The teaching portfolio, which focuses on collecting artifacts that illustrate skills and competencies, is one of the most prominent performance assessments in the field of teacher education. The teaching portfolio is inspired by the use of portfolios in fields such as fine arts (Moya & O'Malley, 1994); just as artists' portfolios are intended to demonstrate their work, teachers' portfolios include documents and artifacts that illustrate the abilities exercised in their profession. As originally conceived, portfolios were physical collections of these documents; however, today's portfolios are more likely to be digital or e-portfolios, which collect artifacts in a digital space, such as on a website. Due to the disagreement surrounding and difficulty of coming up with an authoritative definition for *portfolio* (Challis, 2005; Woodward & Nanlohy, 2004), we refrain from reviewing

the varying definitions that have been provided or from entering into the debate ourselves. The common theme among the definitions offered in the literature is that a teaching portfolio involves collecting artifacts that demonstrate knowledge and ability; we will therefore refer to teaching portfolios in these general terms. Many kinds of artifacts can be included in a portfolio, including teaching philosophies, lesson plans, and pupils' work (Zeichner & Wray, 2001). Despite this focus on artifacts, Wolf's (1991) explanation that "a portfolio is more than a container" (p. 130) remains instructive. A portfolio is about more than just documents: Using a portfolio involves embracing a dynamic and authentic conception of assessment.

Portfolios became increasingly prominent as education researchers focused more on the role and evaluation of teachers. Portfolios have been used for quite some time in a number of fields (Woodward, 2000), but teaching portfolios seem to have first appeared in the 1980s (Zeichner & Wray, 2001; Zhou, Chye, Koh, & Chia, 2013), when the education community began to ask questions about the role of teachers. However, it wasn't until the 1990s that teaching portfolios begin to attract a great deal of attention, both from education researchers (Woodward, 2000) and teacher educators (Lorenzo & Ittelson, 2005). By the late 1990s and early 2000s, portfolios had become widespread in teacher education programs and teacher evaluation efforts in the United States (Stone, 1998; Zeichner & Wray, 2001); in fact, while portfolios continue to be used in other fields (Woodward, 2000), they are now most prevalent in teacher education programs (Lorenzo & Ittelson, 2005). Teaching portfolios are used widely enough that some states examine pre-service teachers' portfolios during the accreditation process for teacher training programs (Zeichner & Wray, 2001). Furthermore, teaching portfolios have also seen increased use in countries throughout the world (e.g. Loughran & Corrigan, 1995, Woodward & Nanlohy, 2004). The widespread use of portfolios is mirrored by the extensive coverage of teaching portfolios in the teacher education literature (Anderson & DeMeulle, 1998; Trent & Shroff, 2013; Woodward, 2000) and by the interest in portfolios expressed by private and government organizations (Challis, 2005).

The popularity of portfolios is due in part to the wide range of theoretical and empirical claims about their benefits. Many of the advantages of portfolios are related to their differences from traditional forms of assessment and their ability to fulfill the perceived needs of teacher evaluators and educators as discussed earlier in this chapter. For example, researchers and practitioners tend to explicitly or implicitly associate portfolios with a socio-constructivist learning paradigm (Abrami & Barrett, 2005; Anderson & DeMeulle, 1998; McKinney, 1998; Wolf & Dietz, 1998). It follows that portfolios are seen to be more authentic, comprehensive, and representative than more traditional assessments (Bird, 1990; Crow et al., 1998; Wolf, 1991). Portfolios are also associated with other advantages beyond those related to its theoretical foundations. For example, much of the portfolio literature focuses on its ability to inspire and guide reflection (Genc & Tinmaz, 2010; Loughran & Corrigan, 1995; Snyder, Lippincott, & Bower, 1998; Plaisir, Hachey, & Theilheimer, 2011; Prescher & Schulz, 2014; Stone, 1998; Trent & Shroff, 2013; Wolf, 1991; Zeichner & Wray, 2001). Furthermore, Zeichner and Wray (2001) noted the claim that the skills developed while constructing a portfolio (such as reflection) last long after the portfolio's completion.

The literature has also identified a number of advantages unique to digital portfolios. The emergence of the portfolio has coincided with the evolution of the computer from "a complicated instrument of a few zealots to a seamless, universally available tool" (Crow et al., 1998, p. 73), and it is therefore no surprise to see the teacher education literature's attitude toward digital portfolios shift over time. Earlier literature focused mostly on logistical and practical advan-

tages of digital portfolios (Woodward & Nanlohy, 2004). For example, it is widely recognized that digital portfolios are easier to store than paper portfolios (Abrami & Barrett, 2005; Mason, Pegler, & Weller, 2004; Woodward & Nanlohy, 2004) and can store media that paper portfolios cannot (Abrami & Barrett, 2005). In addition to being easier to store, a digital portfolio is easier for teachers to share with evaluators (Abrami & Barrett, 2005; Pecheone et al., 2005), employers and peers (Lorenzo & Ittelson, 2005), and, for some, "as many people as possible" (Pecheone et al., 2005, p. 173). However, more recent papers identify advantages that relate to expectations of teachers' technology skills (Woodward & Nanlohy, 2004). McKinney reported that students who chose to develop digital portfolios were more open towards and positive about technology than students who developed traditional portfolios (1998). In addition to promoting familiarity with technology, the development of digital portfolios is thought to help develop increased technology skills (Abrami & Barrett, 2005; Lorenzo & Ittelson, 2005), a belief borne out by student perceptions of their own technological growth (Gatlin & Jacob, 2002; Genc & Tinmaz, 2010).

Despite these advantages, portfolios, like all other forms of assessment (Shulman, 1988), have some inherent weaknesses that teacher educators and evaluators should be aware of. These weaknesses include issues of time and efficiency (Abrami & Barrett, 2005; Wetzel & Strudler, 2005) as well as the difficulties of constructing, storing, and scoring portfolios (Wolf, 1991). Furthermore, just as digital portfolios can contribute additional advantages, they can also create additional problems (Crow et al., 1998). For example, McKinney (1998) suggested that digital portfolios are impeded by a lack of time and a lack of support for learning portfolio technologies, which change frequently. Although it is critical to be aware of portfolios' weaknesses, this awareness should not diminish the impact of their advantages (Wolf,

1991). Shulman (1998), a portfolio advocate who nonetheless recognized their problems, believed that the ideal response to the weaknesses of any particular form of assessment was to supplement it with other forms of assessment that compensate for those weaknesses.

The Role of the Portfolio

Portfolios can play a number of different roles. Despite the number of existing frameworks for describing the purpose of a portfolio (e.g. Crow et al., 1998; Bartell et al., 1998; Wolf & Dietz, 1998), we use a simple summative/formative dichotomy to describe these variations. Portfolios that play a summative role evaluate a teacher's past performance. This is often done in the context of determining a teacher's qualification for certain programmatic milestones, such as graduation, licensure, relicensure, or career awards (DeSchryver et al., 2013; Lorenzo & Ittelson, 2005; Wolf & Dietz, 1998; Zeichner & Wray, 2001). On the other hand, portfolios that play a formative role help teachers prepare for their future. For example, portfolios may help teachers form their identities (Hallman, 2007; Plaisir et al., 2011; Trent & Shroff, 2013; Zhou et al., 2013), develop teacher knowledge (Grant & Huebner, 1998), advance professional practice (Bird, 1990; Grant & Huebner, 1998), and engage in critical reflection (Boileau, 1993; Hicks, Russo, Autrey, Gardner, Kabodian, & Edington, 2007; Lorenzo & Ittelson, 2005). Other researchers have suggested that a community of teachers can use portfolios to reduce the overly private nature of teaching (Bird, 1990; Boileau, 1993; Evans & Powell, 2007) by sharing work, mentoring each other, forming communities of practice, and encouraging other teachers to benefit from their own portfolios (Boileau, 1993; Evans & Powell, 2007; Wolf, 1991).

Although there is a tension between summative and formative assessments, it is possible—even desirable—for portfolios to play both roles. Snyder

et al. (1998) argued that this tension reflects a similar tension between teacher educators' summative and formative responsibilities, making it even more important for instructors to strive for a constructive resolution. It is important to remember that differing portfolio purposes are not mutually exclusive (Lorenzo & Ittelson, 2005; Wolf & Dietz, 1998). In this spirit, some institutions implement portfolio assessment in such a way that it explicitly addresses both the past and the future (DeSchryver et al., 2013; Prescher & Schultz, 2014; Snyder et al., 1998). Even if institutions concentrate on the summative purposes of their portfolios, though some advocates believe that requiring teachers to examine their past in a certain way will have an inevitable, positive effect on their future. That is, because summative portfolios require teachers to practice higher-level thinking, reflection, and analysis, they also formatively prepare teachers to use those skills in the future (Abrami & Barrett, 2005; Prescher & Schulz, 2014; Zeichner & Wray, 2001).

Institutions should strive to include both summative and formative purposes in their portfolios, which makes it even more important that portfolio elements be aligned with a clear purpose. The purpose of any particular portfolio should have an important impact on that portfolio's other features (Wolf & Dietz, 1998), and Evans and Powell (2007) expressed concern about contradictions between the purpose and other key elements of a portfolio. This becomes even more critical as institutions try to bridge different purposes: The overlap between summative and formative purposes is a "contested space in teacher education" (Hicks et al., 2007, p. 451), and the "same features that make a portfolio attractive for one purpose often render it less helpful for other purposes" (Wolf & Dietz, 1998, p. 19), requiring teacher educators to walk a fine line as they strive for balance. The practices offered in this paper have been developed as guidelines for this balancing act.

PRETTY GOOD PRACTICES FOR THE DESIGN OF TEACHER PORTFOLIO COURSES

Although portfolios have a number of advantages and enjoy a great deal of popularity, they are not a panacea (Moya & O'Malley, 1994)—they must be implemented and used properly in order to realize their full potential (Plaisir et al., 2011). This has been a concern about portfolios since they were first introduced (Bird, 1990; Moya & O'Malley, 1994) and may be even more important now that portfolios are taken for granted as a feature of teacher education (Bartell et al., 1998; Woodward, 2000). To fail to implement portfolios properly is to risk their becoming nothing more than an educational fad (Moya & O'Malley, 1994; Niguidula, 1997; Simon & Forgette-Giroux, 2000), a discredited experiment in assessment (Bird, 1990), a distraction from intended learning goals or identity development (Trent & Shroff, 2013; Wolf, 1991), "one more thing to do" (Stone, 1998, p. 105) for instructors or students who don't recognize their value (Loughran & Corrigan, 1995), or just another unpopular means of assessment (Abrami & Barrett, 2005).

With this in mind, this section presents seven *pretty good* (not *best*) practices to guide the effective implementation of portfolios. We have developed these practices in the context of designing and teaching a class to help teachers develop portfolios as a culminating requirement for their master's programs. Accordingly, this chapter is focused on course design as a means of portfolio implementation, and the practices we offer here are chiefly principles of effective course design. Educational researchers have put a great deal of effort into identifying effective principles of course design (e.g. Chickering & Gamson, 1987), and Whetten (2007) has described course design as one of the most importance influences on student learning. Furthermore, Prescher and Schulz (2014) noted that introducing portfolio assessment into

a teacher education course is naturally associated with changes in the design of that course. Based on this understanding of the importance of course design, we suggest the implementation of the following pretty good practices:

1. Peer feedback,
2. Authentic audience,
3. Diverse resources,
4. Learning by doing,
5. Open access,
6. Confidential spaces, and
7. Self-pacing.

After discussing each of these practices in detail, we offer some general guidelines for how they may be applied in a course.

Peer Feedback

Portfolio courses should incorporate peer feedback; that is, in addition to creating their own portfolios, students should be involved in constructive criticism of their classmates' portfolios. Although portfolio researchers have previously discussed the importance of creating portfolios through an iterative process that seeks out feedback from peers (Woodward & Nanlohy, 2004), other researchers have found that the kind and quantity of feedback offered during portfolio creation varies widely from program to program (Zeichner & Wray, 2001). Emphasizing the importance of peer feedback does not diminish the importance of portfolio creators' interactions with their instructor. An instructor is, in some cases, better equipped to offer advice and insight into portfolios and more likely to provide stricter feedback (Chang, Tseng, & Lou, 2012) than a student's peers. Instructors should therefore also be involved in providing regular, structured feedback. Teachers and administrators in the field may also provide welcome feedback as they can provide an experienced perspective that classmates may not

be able to. However, peer feedback is included here as a pretty good practice because it is often as valuable as instructor feedback, more practical than obtaining feedback from in-service teachers and administrators, and easily overlooked. Furthermore, one of the most important formative roles of the portfolio is to provide teachers with a means to engage in this kind of peer feedback throughout their careers (Wolf, 1991). By emphasizing peer feedback in a teaching portfolio course, the course designer and instructor give teachers practice with the skills they will need for continued formative use of their portfolios (Costa & Kallick, 1993; Reynolds, 2009).

An emphasis on peer feedback also offers a number of other theoretical and practical advantages. Researchers have suggested that frequent and meaningful interaction with others is a critical part of not only effective portfolio construction but also effective learning in general (Chickering & Gamson, 1987; Wolf & Dietz, 1998). This belief is typical of the socio-constructivist perspective on learning, which, as has been noted in this paper, is tied to the portfolio movement. Educational researchers, including portfolio researchers, have also emphasized the importance of "critical friends" (Snyder et al., 1998). Critical friends are peers who provide feedback by "ask[ing] provocative questions, provid[ing] data to be examined through another lens, and offer[ing] critique of a person's work as a friend" (Costa & Kallick, 1993, para. 5). Reynolds (2009) argued that critical friends are capable not only of seeing things that the instructor cannot but also of providing increased levels of feedback in a course without significantly adding to the instructor's workload. Furthermore, Chickering and Gamson (1987) suggested that feedback helps students "[know] what [they] know and don't know" (p. 4), which, in turn, focuses learning. Whether or not students are familiar with socio-constructivist theory or with the benefits of critical friends, they seem to recognize the importance of feedback. In one

study, students at Harvard expressed a preference for courses in which they received a lot of feedback and for courses in which their work was to be shown to their peers (Light, 2001). In studies focusing specifically on portfolio courses, students have responded positively to peer feedback (McKinney, 1998) and have even requested additional feedback (Woodward & Nanlohy, 2004). In fact, some portfolio creators have expressed a preference for electronic portfolios because their features are better suited for frequent, effective feedback (Pecheone et al., 2005).

There are a number of considerations that should guide instructors' decisions when introducing peer feedback into their classrooms. First, peer feedback should be regular and structured; Costa and Kallick (1993) argued that a formal process is necessary if peer feedback is to create critical friendships. Instructors may want to provide specific guidelines for the kind of feedback their students give and may even consider evaluating the feedback their students give. To further facilitate regular, structured feedback, portfolio course instructors may adopt certain conventions within their classes. The MAET/MAED capstone portfolio course, for example, has used both assigned groups (or *houses*) of students and one-on-one partnerships (*study buddies*) to structure feedback throughout the portfolio creation process (DeSchryver et al., 2013). Second, instructors should work to establish a class-wide attitude that is receptive to peer feedback. In a list of good practices in undergraduate education, Chickering and Gamson (1987) highlighted the importance of "reciprocity and cooperation among students" (p. 2) and encouraged instructors to remove an atmosphere of competition from the classroom. Likewise, Costa and Kallick (1993) warned that even the most friendly of critical friends must deal with the widespread tendency to equate criticism with judgment. Instructors should go to lengths to ensure that there is a relationship of trust between peers who provide such important feedback.

Authentic Audience

Portfolio courses should encourage students to identify an authentic audience; that is, students should develop their portfolios for the benefit of someone besides their instructor. The instructor is an appropriate audience for the summative elements of a portfolio, and students do have a legitimate interest in tailoring their work for those who have the responsibility of judging a portfolio and accounting for the creator's teaching competence (DeSchryver et al., 2013; Love et al., 2004; Snyder et al., 1998). However, whatever personal concerns instructors may (and should) have for their students' future, their duty, as an audience, is overwhelmingly summative. Once they have evaluated students' past performance, instructors' professional concern for the portfolio fades. If instructors want students to continue using their portfolios for formative purposes, they should encourage students to identify an authentic audience who will be more concerned with their continued growth. Otherwise, they risk inviting students to "please the professor" at the expense of building a foundation for future development (Love et al., 2004, p. 30). Even if these audiences play only an informal role, they can have a large impact on students' long-term use of the portfolio (Abrami & Barrett, 2005). This is increasingly likely to be the case with digital portfolios as portfolios hosted on the Internet are closer in place and time to their audiences (Magnifico, 2010).

This emphasis on an authentic audience is tied to the theoretical assumptions of portfolios and also offers some practical advantages. Broadly speaking, authenticity is seen as one of the chief advantages of portfolios, to the point that it is now taken for granted (Abrami & Barrett, 2005; Bartell et al., 1998; Crow et al., 1998; Gatlin & Jacob, 2002; Love et al., 2004; Stone, 1998; Zeichner & Wray, 2001). The recent emphasis of educational research on authentic educational experiences is driven by the influence of the socio-constructive perspective on learning and its close cousin, the

situative perspective. These theories argue that students should be invited to learn in much the same way that people outside a formal learning environment learn and to use the same practices that professionals in related fields use (Brown, Collins, & Duguid, 1989). Some portfolio advocates have identified formative portfolios completed by in-service teachers as particularly authentic because they are created in an authentic teaching setting (Wolf, 1991). While a portfolio course may not be able to deliver a truly authentic setting, focusing on an authentic audience will nonetheless capture the intent of the socio-constructive and situative perspectives by asking students to complete their summative portfolios as if they were formative ones. This theoretical advantage easily translates into a practical one. Portfolios can be helpful resources for pre-service or in-service teachers looking for jobs (Crow et al., 1998; Woodward & Nanlohy, 2004). Because research on writing has demonstrated that students change their writing in response to the audience that they have in mind (Magnifico, 2010), portfolios may be of even greater help during interviews if their creators specifically tailor their portfolios for potential employers.

When introducing the idea of authentic audiences into their portfolio courses, instructors can take certain steps to ensure this practice is effective. First, instructors should be clear with their goals and intentions. Loughran and Corrigan (1995) found that students did not value elements of their portfolios if they did not understand the purpose for those elements. If instructors are clear about the reasons for encouraging students to identify authentic audiences, students are more likely to appreciate the reasons for doing so. Second, instructors should require students to explicitly identify a particular audience. Woodward and Nanlohy (2004) asserted that having an audience to focus on is an important element of the iterative portfolio-creation process. By requiring students to identify an audience, instructors allow students, peers, and themselves to give more

specific feedback during evaluation by keeping the identified audience in mind. Third, instructors should allow students to choose from a variety of authentic audiences. Pre-service and in-service teachers may choose audiences such as employers, pupils, pupils' parents, colleagues, friends, family, and even themselves (Abrami & Barrett, 2005; DeSchryver et al. 2013; Woodward & Nanlohy, 2004). Different students may have different audiences that they are trying to reach (DeSchryver et al., 2013), so instructors should be cautious about imposing restrictions.

Diverse Resources

Portfolio courses should be designed in a way that allows (if not requires) students to use a variety of different resources. Lorenzo and Ittelson (2005) described four systems that programs can use when implementing portfolios: home grown systems, in which an institution develops its own portfolio tools; open source systems, in which an institution uses tools that are freely available and freely modifiable; commercial systems, in which an institution buys the rights from a vendor to use a particular set of portfolio tools; and common tools, in which an institution requires students to use common HTML editors to develop their portfolios. We recommend that portfolio courses adopt a common tools system but also argue that Lorenzo and Ittelson's conception of this system is too narrow. While HTML editors may have been one of the few practical portfolio-creation tools commonly available in 2005, they were not the only tools available at the time (Strudler & Wetzel, 2005), and they are now only one of many different tools that can be used to create portfolios. In a study published in 2004, Woodward and Nanlohy reported that portfolio creators overwhelmingly chose to use PowerPoint 2000 because it was a program that was capable of creating hypermedia and was available to them in their homes. However, a similar study published shortly thereafter reported that students at Eastern Kentucky University were

highly dependent on campus computers because they could not afford portfolio creation software on their home computers (Wetzel & Strudler, 2005).

In contrast to these visions of common tools systems, as long as today's pre-service and in-service teachers have access to the Internet, they also have access to hundreds of programs, apps, and services that can create hypermedia free of charge. Furthermore, many of these technologies can be integrated with each other. A portfolio hosted on the blogging service WordPress, for example, can easily embed a YouTube video welcoming visitors to the portfolio, display the creator's latest teaching-related tweets, and link to a résumé stored in Google Drive. Portfolio courses should take advantage of this diverse range of technologies by encouraging students to get experience with as many of them as possible. Alternatively, portfolio courses might experiment with options like the Private-Public (PrPl) platform, which allow users to collect in a single place data already stored in various cloud-based technologies (Kim, Ng, & Lim, 2010). However, while this recent development embraces the ideas of diverse resources, it risks minimizing the valuable experience students acquire while working through the integration process themselves.

Encouraging students to use a wide range of resources helps them build a foundation of technological competence. As previously explained, one of the commonly-identified advantages of digital portfolios is that their construction not only helps students create a space for formative assessment but also helps students improve their attitudes toward and skills with technology (Abrami & Barrett, 2005; Gatlin & Jacob, 2002; Genc & Tinmaz, 2010; Lorenzo & Ittelson, 2005; McKinney, 1998). Encouraging portfolio creators to use a diverse range of resources enriches their knowledge of contemporary technologies and also lays an important foundation for teachers' continued growth in technological skill, as befits a truly formative experience. Students who work with a broad range of technologies to create their portfolio become accustomed to repeatedly learning and adapting to new tools. This ability will become crucial as contemporary technologies become obsolete and are replaced by new ones throughout teachers' careers (Mishra & Koehler, 2006), ultimately requiring them to learn and adapt to the tools of the future. McKinney lists the "always changing resources" (1998, p. 86) for portfolio creation as an obstacle to successful implementation of digital portfolios; however, we argue that these changing resources are in fact one more way in which portfolios can be an authentic form of assessment. That is, teachers will leave portfolio courses to enter classrooms whose technological resources are also always changing. To fail to prepare teachers for that experience would be a missed opportunity at best and a disservice at worst.

Furthermore, the availability of a wide range of resources can help students find the tools most appropriate for particular tasks. Evans and Powell (2007) expressed concern that older Web technologies are not well suited for creating communities of practice and that a portfolio that uses the wrong technologies will actually undermine its intended purpose. However, they do suggest that newer Web technologies are better suited for this purpose and that portfolio creators and their supervisors should examine and consider adopting these new tools. If students are familiar with a broad range of technologies and are encouraged to seek out new ones, they are more likely to find those that fit best with the vision they have for using their portfolios in the future, creating a stronger foundation for future formative experiences. They will also be equipped to identify and adopt new tools that are developed during their careers and that hold more promise for their vision of their portfolios than currently existing tools. "Potentially revolutionary technologies are an everyday thing" (DeSchryver et al., 2013, p. 40), and students' experience with technology while creating their portfolios can determine how they respond to those revolutions.

A portfolio course instructor can adopt certain technology-related attitudes to most effectively invite the use of diverse resources. The first of these is to organize lessons and assignments around certain tasks, not certain technologies, and to allow students to learn technologies as needed to complete those tasks. This lack of direct instruction of portfolio creation tools may seem impractical to some teachers, especially given the concerns voiced in the portfolio literature about students' need for technology skills prior to creating their portfolios (McKinney, 1998; Tosh et al., 2005; Woodward & Nanlohy, 2004). However, this attitude toward technology has long been adopted in Michigan State University's MAET program and has seen significant success. Koehler and Mishra (2005) reported that MAET students learned an impressive number of technologies despite the fact that their instructors did not provide lists of specific skills for them to learn and did not grade them on their ability to learn those skills. The second of these attitudes is to speak of these diverse resources in ways that highlight their specific affordances and constraints. Different portfolio-creation technologies have different advantages and different limits, and Abrami and Barrett (2004) invited programs and institutions to consider these factors as they choose what technologies to use. When the choice of technology is made the responsibility of the students, this consideration becomes a learning opportunity for them as they practice evaluating features of new technologies and determining their use for certain tasks: in this case, creating a portfolio, but later in their careers, some kind of teaching task. This practice matching the features of a technology with one's goals for a portfolio gives students a different view of technology and may help students avoid problems such as valuing appearance over function or treating technology as a gimmick (Challis, 2005; Woodward & Nanlohy, 2004).

Learning by Doing

Portfolio courses should emphasize learning by doing; the chief focus of a portfolio course should be carrying out the work of constructing a portfolio rather than lectures and readings on the principles of portfolio design. While it may be appropriate at the beginning of a course to examine existing portfolios and study principles of design, the purpose of these activities should be to find inspiration for the current students' own design processes, and the transition from consumption to production should take place as soon and as quickly as possible (DeSchryver et al., 2013). In other words, learning in a portfolio course should not be a "spectator sport" (Chickering & Gamson, 1987). Evans and Powell (2007) suggested that portfolio production should be driven by rapid prototyping; that is, portfolio creators should create their products as quickly as possible and then constantly refine them based on feedback, additional inspiration, and any other developments. Woodward and Nanlohy (2004) likewise suggested a reiterative portfolio design process in which students frequently return to their creations to continue improving them. This rapid, iterative approach to portfolio design seems to be embraced by students, who have reported that they appreciate receiving feedback while still working on their portfolios (Pecheone et al., 2005), and is supported by digital technologies, which make it easy to modify existing elements of a portfolio (Mason et al., 2004). This iterative process can be temporarily halted when it is time for the instructor to evaluate the portfolio as a summative assessment (Love et al., 2004); of course, students should be expected to continue the process of iterative design as they adapt their portfolios for its more formative purposes.

Learning by doing is connected to a number of theories of learning and educational technology. For example, despite the continued popularity of lecture-based education, constructivist theories of learning have long argued that students must *con-*

struct knowledge themselves rather than receive it from their teachers (Piaget & Inhelder, 1969/2000). Papert (1993) later built on constructivist theories of knowledge to argue for a new theory, which he termed constructionism. This new theory suggested not only that students have to *create* knowledge in their own minds but also that the act of literally constructing some kind of artifact could help that process along. These theories' connection with portfolio assessment should be clear, as portfolios require students to *construct* much more than other, more traditional forms of assessment. Furthermore, both constructivism and constructionism later inspired a new approach to teaching educational technology, that of learning technology by design (Koehler & Mishra, 2005). Koehler and Mishra (2005) asserted that this approach teaches students a number of things about technology, design, and learning and that it helps teachers develop a stronger relationship with educational technology than more passive approaches.

Instructors can make this practice of learning by doing particularly effective in a number of ways. Chief among these is the way that grading and assessment is set up within the course. The portfolio literature has clearly demonstrated that students are motivated by the ways in which their portfolios are graded (Tosh et al., 2005; Valdez, 2010). Furthermore, the broader field of education research has suggested that students prefer classes with a highly structured grading system (Light, 2001) and that grades are an appropriate, if less than ideal, way to focus students' attention and motivation (Whetten, 2007). The teaching portfolios that are created during this kind of course must be evaluated in order for them to fulfill their summative purposes, and the high-stakes nature of this kind of assessment may be enough to encourage students to construct high-quality portfolios. It is important to note, however, that there is nothing preventing a portfolio course from also assigning other grades. For example, a portfolio course may set certain benchmarks and deadlines throughout

the duration of the course, each of which is associated with a grade to motivate students to move through different rounds of creation and improvement. In the spirit of learning by doing and iteration, however, instructors should grade these benchmarks based on completion rather than on quality. That is, grades should be awarded based on whether students have made a good faith effort to complete the assignment rather than the skill demonstrated in the current version of the assignment. These completion grades encourage students to make regular steps towards completing a portfolio; the quality of the portfolio will then be addressed in a final, summative assessment.

Open Access

Portfolio courses should be structured in a way that incorporates the principle of open access. In this chapter, we use the term *open access* to refer to hosting portfolios in a way that they are publicly accessible by both their audience and their author. We appropriate this term from the world of academic publishing, especially as it relates to the first idea of granting public access to an audience. An open access journal is one that can be read and downloaded without needing to pay a fee or log in to a website; this phenomenon is often presented as a natural response of media to the evolution of Internet technologies (Pearce, Weller, Scanlon, & Ashleigh, 2010). There are legitimate reasons to consider keeping portfolios out of the public eye, and the next practice addressed in this chapter discusses some of these reasons. However, open access to portfolios is a natural next step for a portfolio course that requires its students to identify authentic audiences. If portfolios are not easily accessible by those audiences, there is little use in identifying them in the first place. In addition to the more traditional understanding of open access—that is, access by its audience—it is also critical that a portfolio be continually accessible by its author. Though it may seem preposterous that a portfolio creator would not have access to

his or her own work, Lorenzo and Ittelson (2005) have pointed out that educational institutions regularly archive students' work, much of which is off limits to students once it is submitted, and raise the possibility that the same could be true of portfolios. While there are good reasons for an institution to preserve students' summative assessments, teachers must continue to have access to the portfolios after they have completed their summative functions if these assessments are also to play a formative role well into teachers' careers.

Open access is particularly important in that it relates to broader concerns about teacher education. A number of researchers have expressed concern about the "privatization" of teaching (Bird, 1990; Boileau, 1993). That is, teachers have a tendency to work on their own, neither sharing their practices with others nor learning from others' practices. Bird (1990), summarizing the claims of previous research, asserted that this failure to share ideas with others is at least partially responsible for the difficulty of enacting educational reform through changing the teaching profession. Because the privatization of teaching may begin as early as pre-service teacher education (Evans & Powell, 2007), it is of particular concern to portfolio course instructors, who may have a chance to set a more productive foundation for the future. An openly accessible portfolio is, by definition, not private; it may therefore help its creator practice teaching in a more public way. In fact, Boileau (1993) listed the creation of a public dialogue on teaching as one of the goals of the portfolio movement, and Challis (2005) identified access as an important prerequisite for the kinds of unstructured feedback teachers should receive on their portfolios throughout their careers. Ensuring that portfolios are openly accessible does not guarantee that this public dialogue will take place, but it is an important contribution to moving toward a more public practice of teaching. Furthermore, just as the practice of diverse resources is intended to increase teachers' comfort with digital tools, the practice of open access is intended to increase

their comfort with having a digital identity. Public artifacts, such as the openly accessible portfolio, play an important role in defining both individual and collective teacher identities (Hallman, 2007; Søreide, 2007), so emphasizing open access gives portfolio course students valuable practice with constructing their own digital identities.

It is likely that portfolio courses wanting to practice the principle of open access will ultimately have to avoid hosting portfolios in course management systems, on university servers, or through any other service provided by the institution in question. This may have been an impractical recommendation ten years ago, but just as the rise of the Internet has allowed a transition from "cumbersome to store" print portfolios (Wolf, 1991, p. 129) to artifacts that can be shared "anywhere, any time" (Love et al., 2004, p. 35), it has lowered the barriers to finding a place on the Internet to host one's content. While running a web server or purchasing a domain name may be beyond the capabilities (or just the desires) of many students in a portfolio course, all students have easy and free access to a number of services that allow relatively inexperienced users to host their own content online, including WordPress, Weebly, and Google Sites. Asking students to use these services helps resolve the kinds of issues brought up by Lorenzo and Ittelson (2005), including how long an institution should guarantee continued access to a portfolio, how an institution will guarantee it has the space to host an increasing number of portfolios, and who ultimately owns the content students include in their portfolios.

Confidential Spaces

While portfolio courses should incorporate open access into their design, they should also provide confidential spaces for their students. As argued in the previous section, open access is a prerequisite for the kind of feedback teachers should receive on their portfolios throughout their careers (Challis, 2005). However, it is important at this point to

distinguish between two kinds of feedback related to teacher portfolios. The first kind of feedback is the kind alluded to by Challis: feedback on teaching practices that is made possible when teachers make those practices public through their portfolios. The second kind of feedback is the kind highlighted in this chapter's section on peer feedback: feedback on portfolio and web design and on the effectiveness of particular portfolio elements. The design and appearance of a portfolio is not its most important element (Tosh et al., 2005; Wolf, 1991), but giving some attention to principles of web design can be an important part of a portfolio's role in teaching about educational technology and lowers barriers to a portfolio's accessibility to its audience. However, making room for constructive criticism of portfolio design and effectiveness creates some problems of its own. Students are highly invested in the appearance of their portfolios (Tosh et al., 2005), and, as previously explained, the feedback process can be a stressful and difficult one for students, even in a classroom that emphasizes the importance of critical friends (Costa & Kallick, 1993). Although the goal of the portfolio is to create a public space for some kinds of feedback, it is equally important to establish confidential spaces for other kinds of feedback in a portfolio course.

Confidential spaces can also be interpreted in other ways that provide additional benefits for portfolio creators. Researchers have correctly noted that the publicity of portfolios raises certain questions about ethics and privacy (Crow et al., 1998). This chapter's approach to open access—namely, the hosting of portfolios in services distinct from the institution and run by their creators—answers the question of portfolio content ownership posed by Lorenzo and Ittelson (2005) by suggesting that the teacher should ultimately have control over the content and appearance of a portfolio. As a result, it is only appropriate that the teacher be able to decide what is available to the public, what is limited to certain viewers, and what is totally private (Tosh et al., 2005). In addition

to containing much of a teacher's own work, a portfolio may, over the years, begin storing pupils' work and personal information, raising the stakes of these questions. A portfolio course that follows the pretty good practices of both open access and confidential spaces acknowledges that teachers will have to find a balance between the two as they administer their portfolios, just as the course instructor has had to find a balance between the two during the guided portfolio creation process.

The nature of a confidential space depends largely upon other elements of the portfolio course. For example, in a face-to-face course, creating confidential spaces may be as simple as setting aside time in the classroom for students to speak together about their portfolios. Confidentiality in such a class can exist at two different levels. The instructor can establish a basic level of confidentiality by allowing the whole class to contribute to feedback and setting the expectation that students will keep that feedback within the class. On a deeper level, the instructor can establish confidentiality by setting up one-on-one conferences (Costa & Kallick, 1993) between students or between students and the instructor, with the expectation that what goes on in that conference will generally not be shared with outside parties, including other students in the class. On the other hand, in an online class such as the MAET/MAED capstone portfolio course, the instructor will have to establish confidential spaces by choosing certain technologies in addition to creating certain class routines. A website such as the question-and-answer service Piazza can allow instructors to create a first-level confidential space, where students can freely critique each other's portfolios without exposing that conversation to the public eye. Thanks to the widespread use of email, it may be even easier to establish a second-level confidential space. Not only can students email each other without including the rest of the class in their conversation, but by asking to receive copies of these emails, instructors can also be involved in and ensure the quality of each of these

conferences more easily than if they had to be physically present for each one-on-one meeting. Naturally, these technologies are not limited to online classes. Face-to-face instructors who, for whatever reason, choose not to make the feedback process part of their class time can also benefit from using each of these technologies throughout their class. Using these technologies may even help further the diverse resources practice previously discussed in this chapter.

Self-Pacing

Portfolio courses should be structured in such a way that allows students to work at their own pace. The field of teacher instruction as a whole has considered self-paced approaches to teacher training, including professional development (Russell, Kleiman, Carey, & Douglas, 2009), and these approaches are particularly well suited for teacher portfolio courses. To establish a self-paced course, instructors should provide all learning material and assignment descriptions at the beginning of the course and allow students to access and apply them as needed. In the spirit of learning by doing and diverse resources, however, providing learning material will sometimes be more about teaching students how to identify and find the resources they need rather than providing an extensive list of those resources. However, it is appropriate for instructors to provide certain learning materials themselves, and the act of making them all available ahead of time with the expectation that students will go through them as needed gives instructors a great deal of flexibility in what they include. For example, rather than designing their courses "for the lowest common denominator" (Mason et al., 2004, p. 726), portfolio course instructors should feel free to include a wide variety of material that has the potential to both guide students struggling with technology and push students for whom the basics come easily.

It is this variety that makes the practice of self-pacing so important. Since the first uses of teacher portfolios, even their advocates have recognized that creating portfolios is time intensive enough to discourage their implementation (Evans & Powell, 2007; McKinney, 1998; Stone, 1998; Wetzel & Strudler, 2005; Wolf, 1991). The time-intensive nature of portfolios is further complicated by the fact that different students complete the same tasks in different amounts of time and at different paces (Mason et al., 2004; Wolf, 1991), in part because of the "spread of competencies" represented among them (Mason et al., 2004, p. 726). However, providing assignment descriptions and learning materials at the beginning of the course for students to access at their convenience does more than allow students to work at their own pace. It also frees instructors from carrying out more traditional teaching functions and allows them to act as coaches or mentors, working individually with students and providing personalized instruction (Koehler & Mishra, 2005).

While self-pacing policies create clear advantages for a portfolio course, instructors must be particularly attentive when applying them. The portfolio literature suggests that in addition to struggling with the amount of time that it takes to create a portfolio, students also struggle with working efficiently and not waiting until the last minute (Wetzel & Strudler, 2005; Zeichner & Wray, 2001). In other words, a self-pacing scheme that is totally free from constraint risks solving one problem at the risk of aggravating another. We therefore recommend that portfolio course instructors adopt policies that are not totally free from constraint. For example, instructors might establish a series of non-negotiable deadlines for different stages of the portfolio, but allow students to work ahead as far as they choose. This ensures that students do make regular progress in the course without slowing students down on the tasks that come easily to them. However, a policy such as this one may also require changes to other policies in the course. In the MAET/MAED capstone portfolio course, for instance, each stage of the portfolio is accompanied by a

deadline and a second assignment involving giving feedback on other students' work during that stage. Unless the feedback policy is also modified, students who work ahead may have to go back to give their peers feedback before the deadline. To better accommodate a policy of self-pacing, the capstone course instructors have instead required students to give feedback only to those students who finish a stage before they do. This allows students to complete each stage, give the required feedback, and then move on to the next stage with minimal disruption to their workflow. The purpose of this example is not to suggest that all courses implement that particular practice but rather to remind instructors that their implementation of a self-pacing policy of any kind will require examination of and possible modifications to other elements of their course.

Using Pretty Good Practices

Our use of the term *pretty good practice* acknowledges that these recommendations are shaped by one particular vision of what the full potential of a portfolio is and that portfolio course instructors in other contexts may have a different vision than the one presented here. Course design within an institution should be shaped by the stated goals and learning perspectives of that institution (Hannafin, Hannafin, Land, & Oliver, 1997). Although these seven practices will be of value for other portfolio contexts, there is no denying that they have been developed to support the emphasis of the course and the program with which we are most familiar. Notably, these practices were developed in the context of the institutional goals and perspectives of the MAET program and therefore emphasize "learning by design, trans-disciplinary creative cognitive tools, innovative technology, and reflective practice" (DeSchryver et al., 2013, p. 40). Other programs with different institutional goals may find some of these practices difficult to implement; however, that should not prevent them from finding inspiration in these practices.

Although these *pretty good practices* are designed as a comprehensive approach to designing a course that guides teachers through portfolio design, instructors and institutions should adapt them as they see fit. This may include adopting only those practices that are compatible with a particular context. For example, teacher educators may have the freedom to implement practices of peer feedback and diverse resources in their courses but be constrained by institutional policies beyond their control from embracing the practice of open access. Although we would hope that the institution in question would eventually make the decision to embrace open access, applying some of these practices remains better than embracing none of them. Furthermore, each of the practices can be implemented in a variety of ways, and this chapter does not include specific prescriptions. Instructors should try to embrace the spirit of each of these practices while recognizing what works best for their particular context.

FUTURE RESEARCH DIRECTIONS

We have based these recommendations on existing portfolio research, and we believe that they will be of value for instructors who work to implement them in their portfolio courses. However, further research is needed on portfolios generally and these practices specifically. Although the portfolio literature is well established, it is characterized by anecdotal evidence (Pecheone et al., 2005) and conceptual pieces. Even early in the history of the teaching portfolio, Bartell et al. (1998) expressed concern that portfolio advocates were no longer debating whether this form of assessment was useful or what form it should take. The field would therefore benefit from increased empirical research on portfolios, especially in two particular veins: a survey of how portfolios are currently being used in teacher education and evaluation as well as an examination of the effectiveness of these proposed pretty good practices.

A more current understanding of how portfolios are being used would benefit future work on effective portfolio practices. Challis (2005) has noted that despite the growing literature on portfolios, it is difficult to find systematic accounts of how this form of assessment is actually being used. This chapter draws from articles that have indicated that portfolios are being used throughout teacher education programs in a variety of ways, but this existing information is lacking for two reasons. First, these articles discuss the use of portfolios in overly general terms, without providing exact or even approximate information on how widespread portfolios are and what purposes they are serving. Second, many of these articles are now over fifteen years old, many of them coming from a time when portfolio use was expanding rapidly and when digital portfolios were a rarity. Without empirical evidence to provide a more contemporary vision of portfolio use, it is difficult to know whether these claims have changed and, if they have, how much they have changed. We have acknowledged in this chapter the variety of ways in which portfolios are used and how that affects the generalizability of their suggested practices. A better understanding of how portfolios are being used is likely to show even greater variety in the use of portfolios, but better understanding the contemporary purposes and contexts of portfolios would help refine these practices to make them more broadly applicable.

The practices outlined in this chapter would particularly benefit from a better empirical understanding of their effectiveness. The term *pretty good practices* acknowledges that there remains much to be understood about not only these practices but also portfolio implementation practices in general. We follow the example of Loughran and Corrigan (1995) in calling for research that determines "whether the ideas which underpinned our understandings of portfolios [will] be borne out by… practice" (p. 569). In exploring the effect of these practices, researchers may consider exploring student perceptions, a particular field of portfolio research that has

been underrepresented (Tosh et al., 2005). For example, instructors of portfolio courses (especially of those that include end-of-year course ratings) might develop a battery of survey items, each of which asks students to indicate the usefulness of a course practice, requirement, or other feature that was inspired by one of these practices. Likewise, portfolio course instructors might survey former students to determine whether they still use their teacher portfolios and whether they felt certain course features helped or hindered the future use of those portfolios. Studying the actual longevity of portfolios may be of particular importance since some studies (e.g. Plaisir et al. 2011) have indicated that graduates may not invest time in their portfolios despite recognizing their formative value. The pretty good practices outlined in this chapter are intended to support students in portfolio creation and encourage students to continue using portfolios after completing the course—these survey results would provide some indication of whether the students believe these practices succeed in these goals.

Researchers could also (or instead) explore the effect of these practices without concentrating uniquely on student perceptions. For example, researchers could use a case study or other qualitative approach to observe a class and examine how course features inspired by these practices relate to students' and instructors' experiences and practices in a portfolio course. This kind of study would be particularly effective if it were carried out in a course or institution in the process of adopting these practices; examining student and instructor experience before and after the implementation of these practices would give some indication as to the effect of these practices on a portfolio course. More rigorous and more experimental studies could also be performed to examine the effect of these practices individually or as a whole by comparing classes that implement them to classes that do not. Researchers would need to develop measures for intended course outcomes, such as a portfolio's suitability for future formative use

or its demonstration of technological competence, and then compare these measures between classes that have been assigned to implement these pretty good practices and those that have been assigned to continue with previously established practices. The results of these studies would permit revision of these practices based on the effects that they have when actually used in portfolio courses.

CONCLUSION

This chapter has presented seven *pretty good practices* for aligning portfolio courses with the principles of portfolio assessment. To understand the necessity for these practices, it is first necessary to understand the recent history of teacher evaluation. Assessing pre-service and in-service teachers has increased in importance as the educational community has emphasized the role of teacher accountability in educational reform. In response to this increased importance, stakeholders in the educational community have turned to the portfolio as a better, more authentic means of carrying out teacher evaluation. Despite the promise of portfolios, however, there remain many questions to be answered and many issues to be resolved. Simply put, portfolios must be implemented correctly in order to realize their true potential for teacher evaluation. We present seven *pretty good practices* in this chapter: peer feedback, authentic audience, diverse resources, learning by doing, open access, confidential spaces, and self-pacing. These represent seven suggestions for course design, one important element in correctly implementing portfolios. They further represent assumptions that portfolios can and should fulfill both summative and formative roles and that teachers create their portfolios in a class setting with support from an instructor.

However, these practices should not be applied without careful consideration for the particular context of the portfolio course. Our use of the term *pretty good practices* reflects our belief that

these recommendations have room for adaption or improvement. That is, institutions who use portfolios under a different set of assumptions than those of the MAET/MAED capstone portfolio course will have to adapt these practices accordingly. Furthermore, although they are based on established theory and practice, these practices have not been empirically tested. We therefore invite members of the teacher education community to evaluate and improve these practices as needed. We hope that, in concluding this chapter, we are beginning a conversation on the nature and evolution of valuable practice in portfolio courses.

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KEY TERMS AND DEFINITIONS

Authentic Audience: A person or group other than course instructors that a student keeps in mind when creating a portfolio and making specific decisions about that portfolio.

Confidential Spaces: Classroom practices or means of communication that allow students to give each other feedback in a private way.

Course Design: The process of making decisions about what and how to teach and assess students in a particular course. Ideally, these decisions are focused on aligning teaching and assessment with course objectives and pedagogical theory.

Diverse Resources: The practice of encouraging or mandating the use of a variety of technologies as they are needed to accomplish certain tasks rather than focusing on only a few tools.

Learning by Doing: The principle of using the completion of tasks to help students acquire knowledge rather than treating the latter as a prerequisite for the former.

Open Access: In a portfolio course, the practice of hosting digital portfolios in a way that allows students to access, edit, and publicly share their portfolios even after the completion of a portfolio course.

Peer Feedback: A practice in which students' work is evaluated by their peers in addition to or instead of their instructor.

Portfolio Course: A course designed to guide and scaffold the process of creating a portfolio.

Portfolio: A means of formative and/or summative assessment that involves collecting artifacts that demonstrate skills and proficiency.

Self-Pacing: The practice of allowing students to learn and complete assignments according to a self-determined schedule rather than an instructor-set schedule.