

From Review to Practice: Implementing ePortfolio Research in Professional Identity Formation

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ePortfolios are generally used as a method for learning assessment; however, ePortfolio research reveals no single set of guidelines for implementation. This article translates a literature review of ePortfolios into actionable suggestions for various higher education contexts. The first part of our article identifies current challenges of and opportunities for ePortfolios. Taking the theoretical position that ePortfolios offer opportunities to transfer learning across contexts (Yancey, 2017), and, therefore, to (re)negotiate identities by assembling digital artifacts (Gries, 2019), our literature review is guided by the following question: In what ways might undergraduate college students assemble an identity in an ePortfolio? Informing our literature review is a conceptualization of identity as dynamic, situated within a specific context, and always in negotiation with social and material forces (Oyserman et al., 2012). We identify four approaches that point to the relationship between ePortfolio use and students' assembled identities; these approaches include co-curricular integration, shared ownership, intentional purpose, and ongoing reflection. The second part of our article considers how the above approaches illuminate best practices for using ePortfolios as a process for assembling a professional identity.

Portfolios have been long celebrated for documenting learning across experiences. The assemblage created through portfolios often becomes more meaningful than the material documentation; they also reflect students' identities. This understanding offers new instructional possibilities for implementing portfolios, but it does require us to think of portfolios beyond their typically technology-bound definitions.

Batson et al. (2017) lamented that portfolios have "often been defined by the technology that puts the idea into practice" (p. 4). Their recommendation was to focus on "portfolio as an idea," not just as a material form but also as a concept and practice for teaching and learning (Batson et al., 2017, p. 4). Portfolios have commonly been the preferred tool for process learning and assessing student performance across a range of experiences and time (Aitken, 1993; Camp, 1993). In fact, process-oriented instruction frequently makes use of portfolios to evaluate students based on growth from an early artifact to a later one (Gearhart & Wolf, 1997). Besides change over time, portfolios also promote self-regulation and reflection of learning (Alexiou & Paraskeva, 2019; Jenson, 2011), extending their use and value in student-centered learning. As a pedagogy, Yancey et al. (2014) provided a useful framework for how "portfolio as an idea" (Batson et al., 2017, p. 4) encouraged students to make connections between the

- Delivered curriculum: instructional design;
- Lived curriculum: prior knowledge; and
- Experienced curriculum: students' engagement with instruction.

ePortfolios, the digitation of print portfolios, emerged alongside rapidly increasing digital learning environments. As online learning promised greater

equity and access in higher education, ePortfolios were identified as an empowering assessment method (Calfee, 2000). However, as virtual learning has come to dominate so much of higher education, new challenges emerge. For one, students require a particular literacy to effectively engage ePortfolio platforms (Yancey, 2019). Additionally, students require systematic support from faculty, advisors, and administration when producing an ePortfolio, which requires students to assemble, or bring together, processes, experiences, and identities in one place—an ePortfolio (Gries, 2019; Kirby et al., 2022). While addressing these challenges is certainly important, the process of assembling artifacts to tell a story of oneself should remain the goal.

As a complex product, ePortfolios communicate not just a body of work but also a student's multimodal identity (Bauer, 2009; Blair, 2017). When a student assembles textual artifacts that tell a story of their learning through an ePortfolio, they are also assembling an identity, a particular way of being recognized in a certain social context (Gee, 2014; Kalmbach, 2017; Yancey, 2015). The current promise of ePortfolios, according to scholars, like Rhodes et al. (2014), may be their capacity to help students transfer their learning by (re)negotiating identities assembled in the moment.

Undergraduate college students experience incredible transition in Western society. They leave home, enter new communities, encounter new ideas, and become different selves. As teacher-scholars, we wondered how ePortfolios could capture and trace identity (trans)formation, learning, and knowledge transfer. In other words, we wondered how, as a method, undergraduate students could use ePortfolios to record their ever-changing identities and learning in and across contexts and time. Thus, taking the theoretical position that the ability to transfer learning across contexts,

Table 1
ePortfolio Approaches for Fostering Identity

Approach	Descriptions
Shared ownership	Both students and faculty share explicit ownership over the process, artifacts, evaluation, and use of the ePortfolio.
Ongoing reflection	Students are taught how to explicitly reflect on how their identity emerges through ePortfolio assemblage.
Intentional purpose	The ePortfolio is given a clear purpose and goal that aligns with students' needs.
Co-curricular integration	The ePortfolio connects multiple course experiences, allowing students to reflect on how their strategies, thinking, and identities change across contexts.

and, therefore, to (re)negotiate identities depends on assemblage (Gee, 2014), our review is guided by the following question: In what ways might undergraduate college students assemble an identity in an ePortfolio?

Method

From May 2021 to November 2021, we searched Academic Search Premier, PsychINFO, ERIC, and Google Scholar with the terms “writing,” “ePortfolio,” “identity,” and “assessment” in different combinations (e.g., “identity” AND “portfolio”; “portfolio” AND “assessment”). After scanning titles for relevance and removing duplicates from the search, we received 236 results. These initial results came from varying contexts.

To assess the results in relation to our guiding question, we excluded studies that did not:

- take place in a college setting;
- undergo peer review (e.g., unpublished dissertations, conference presentations);
- examine the relationship between portfolios and aspects of identity (e.g., self-reflection, self-regulation, agency), as defined in recent scholarship (e.g., see Berzonsky & Kuk, 2021; Oyserman et al., 2012); and
- assess portfolios within a pedagogical context, rather than solely evaluating portfolio platforms or types.

After testing the results against the above criteria, 31 studies remained. We organized studies based on learning context, portfolio type, and results, allowing us to present the current review so that it emphasizes shared themes across studies. In line with our guiding question, we analyzed studies based on the contextual factors (i.e., how portfolios were situated in particular learning environments) that constituted each study's results. At first, we annotated articles based on our guiding question following the grounded theory process of open coding (Glaser, 2016). We had in mind not so much the goal of generating a theory, but

rather generating themes that pointed to instructional approaches for assembling a professional identity through ePortfolio. We coded for methods that resulted in students successfully using ePortfolios to reflect upon, showcase, or otherwise develop a professional identity. We also coded for benchmarks of success used in each study. We met to discuss our process and then synthesized codes into emerging themes, which we categorized into the approaches we describe in this review.

Assembling a Professional Identity

The approaches point to instructional strategies for using ePortfolio to assemble a professional identity. Like any identity, professional identity is dynamic, situated within a specific context, and always in negotiation with social and material forces (Oyserman et al., 2012). The first two approaches—shared ownership and ongoing reflection—describe student/faculty interactions. From the writing studies literature, ePortfolio usage that resulted in students' awareness of their in-the-moment identities often invited students to negotiate ePortfolio implementation and reflect on their negotiations (Berzonsky & Kuk, 2021). Informed by Berzonsky and Kuk's (2021) findings, students should have some say on the design, execution, and use of an ePortfolio; students should also be asked to reflect on the contents and purpose of their ePortfolio. The second two approaches—intentional purpose and co-curricular integration—describe contexts and possibilities for interaction. ePortfolios are more likely to benefit students when the contextual purpose is made explicit and when content is composed of multiple samples across courses or experiences.

Even though we discuss the approaches in a seemingly linear fashion below, they are critically interconnected. The primary purpose of this article is not to provide a menu of strategies to be chosen *à la carte*, but to explore a potential framework contextualizing ePortfolios for explicit purposes.

Shared Ownership

Agency

Students can enact their agency by sharing ownership of their ePortfolios and by participating in the digital assemblage of their materials with others—students, teachers, colleagues, and/or employers (Hiradhar & Gray, 2009). According to Lam and Lee (2010), the opposite was true: ePortfolios could discourage student use and participation, and thus agency, when portfolio processes feel top-down. To encourage student agency and participation in the ePortfolio process, teachers, for instance, can allow their students to make creative decisions, like allowing them to create their own ePortfolio title pages or covers (Hewitt, 2001); teachers can also encourage agency by allowing students to make their own decisions regarding ePortfolio content based on their future orientations (Bennet et al., 2016). As Hewitt (2001) found, when students are afforded opportunities to determine their ePortfolio’s materialization, as linked to their identity as a learner and/or professional, their “vested time, interests, and energy often yield a wealth of quality writing” (p. 188). Many theorists connect agency with identity, demonstrating that feelings of capability and commitment become defining moments of individual trajectories (Stetsenko, 2008). Involving students early in the ePortfolio process does more than hold them accountable, it also encourages them to invest their whole selves.

This is not to say that students should have complete ownership of their ePortfolios. In fact, Lambert and Corrin (2007) demonstrated the importance of faculty acting as co-decision-makers, both with and for their students. What is important is that the decisions made by stakeholders (e.g., students, faculty, administration) are aligned with the ePortfolio’s purpose. Lam (2016), for instance, offered a model of portfolios as assessments *as* learning, which requires students to learn through the self-assessment occurring through portfolio use. In such a model, for themselves, stakeholders establish clear objectives and make decisions, either collaboratively or independently, in pursuit of commonly understood objectives. The negotiation required of shared ownership also emphasizes the sociocultural nature of identity—particularly, that it emerges through social interaction (Penuel & Wertsch, 1995). This point, explored in the following sections, is critical in establishing the centrality of relationships in defining identities.

Support

Agency is not the same as independence. For students to develop the agency for negotiating their

identities through ePortfolios, they need structured support. Lam (2017) provided guidelines for the roles each stakeholder might play in supporting learning through ePortfolios:

- Students monitor their own learning and make decisions based on their progress,
- Faculty model portfolio use and reflective practice, and
- Administration sustains a culture of feedback and reflection.

While much ePortfolio discourse emphasized the roles played by students and faculty in our review of writing studies literature, the role played by administration was equally important. A portfolio culture means that students are consistently exposed to feedback, as well as opportunities to reflect on and incorporate feedback in their progress (Lam, 2017). Some institutions sustain such a culture through writing centers, ePortfolio courses, or seminars that provide students with direct instruction in ePortfolio engagement (Kehoe & Goudzwaard, 2015; Lam, 2021). Institutional buy-in to portfolio pedagogy is necessary to ensure such support. Without significant investment of resources (e.g., portfolio coordinators, portfolio readers) or even explicit interest (e.g., sending the message to students that portfolios are an important material assemblage of their identities), portfolio implementation is likely to suffer. Identity development takes time and frequent reflection checkpoints. Engaging in an activity only once, in a single context, does not provide the necessary experiences to reflect on how we presented and what we might change. For students to develop identities aligned with their professional interests, they need to sustain engagement across time and space. Touchpoints need to be charted along the way, including anyone from student affairs to advising. In short, students need to stay in relation to those helping to shape their identities through ePortfolio.

Ongoing Reflection

Confidence

With a robust support system, students are not only able to develop the agency to construct an identity with ePortfolios, but they are also able to develop confidence in their constructed identities. Writing Across the Curriculum (WAC)/Writing in the Disciplines (WID) research has frequently documented how students’ learning confidence is often connected to feeling supported (Meehan & Howells, 2019). Building ePortfolios within supportive systems can enable students to confidently reflect on the possible identities materializing through their assembled artifacts (Phan,

2014; Trent & Shroff, 2013). Further, while working within supportive spaces, students can be encouraged by educators to revisit their reflections and locate areas where superficial, rather than deep reflection, is offered, encouraging students to revise these discussions so they show readers why and how certain things matter and why and how they bear significance in the student's life. It is through deep reflection that students are likely to build metacognitive awareness, helping them transfer knowledge and skills across contexts (Adler-Kassner et al., 2016; Yancey et al., 2014; Yancey, 2015). This way, students can become alert to how multiple identities overlap and integrate to make up the whole person, as well as how they shift amongst varying contexts.

Metacognition

Metacognition is a frequent goal of reflective practice with many benefits to achievement (Goupil & Kouider, 2019). For example, Nezakatgoo (2011) showed how an ePortfolio aligned with clear objectives and formative feedback could assist English as a foreign language students in developing an awareness of variable language rules. The awareness of one's learning, assembling, or communicating, directly impacts one's identity as a learner, assembler, and communicator (McAlpine, 2005). ePortfolios are considered tools for enhancing metacognition because they not only provide students artifacts of performance over time, but they also provide opportunities to make explicit connections to learning and identity across artifacts. In our review, WAC/WID studies referred to the metacognitive processing of artifacts as a "narrative identity" (Cordie et al., 2019; Graves & Epstein, 2011; Nguyen, 2013). Narrative identity can be simplified as the belief that identity is, fundamentally, a life story (McAdams, 2018). ePortfolios can become explicit platforms for narrative identity through the following approaches.

Intentional Purpose

Clarity

Just as task-specific clarity is critical to fostering reflection and decision-making clarity is critical to fostering ownership, clarity is also needed when it comes to ePortfolio purpose. All involved agents need a shared vision of what any ePortfolio is meant to accomplish. WAC/WID studies indicated that an ePortfolio can be situated within a discipline's discourse (Hunter & Tse, 2013), a "real world" setting (Thibodeaux et al., 2017), or students' personal lives (Buyarski et al., 2015). The ambiguity surrounding what an ePortfolio is meant to accomplish can have several drawbacks.

One drawback is that students may not engage or use the ePortfolio (Thibodeaux et al., 2017), and even when students do persist in their use, their engagement might be so varied that little meaning might be applied to students' identities. For example, in the context of an information literacy course, Scharf et al. (2007) found that students did not improve information literacy skills through an ePortfolio when information literacy, as an objective of the ePortfolio, was not clearly defined. A second drawback emerges during assessment when, as in the case of Kelly-Riley (2011), raters created their own idiosyncratic criteria rather than agreeing on explicit expectations. As Kelly-Riley (2011) argued, the purpose of any portfolio must not just be clear, but it must also be consistently defined across agents of a portfolio system. A consistent definition must also reach the student, and the literature suggests the importance of the definition aligning with students' professional needs.

Connection

Based on the many studies in this review, "consistency" does not just signify a longitudinal alignment of goals. While some scholarship positioned ePortfolios as a culmination of learning, such as in a capstone (Harver et al., 2019; Scharf et al., 2007), others used ePortfolios as an opportunity to make horizontal connections (Alexiou & Paraveska, 2019; Hunter & Tse, 2013). Connecting different courses, programs, disciplines, or experiences seems to be an important component of successful ePortfolio implementation. The intended connections need to be clearly understood by all involved agents.

Clear connections across experiences create moments of reflection (e.g., thinking about how experiences connect) and ownership (e.g., autonomous movement along connected pathways). Pedagogically, ePortfolios can connect experiences by focusing on key threshold concepts, the "portals" that lead into each discipline, potentially changing the way people think (Meyer & Land, 2005, p. 373). For example, Lewis (2017) studied the effects of ePortfolio in an education program that asked participants to document and reflect upon the key threshold concepts for teaching particular disciplines. With explicit connections made between courses and the ePortfolio, students could assemble key threshold concepts, transforming the ePortfolio into a passport, which helped provide students entry into different spaces. As Meyer and Land (2005) argued, each new spatial entry requires students to "extend their use of language in relation to these concepts, . . . [creating a] shift in the learner's subjectivity, a repositioning of the self" (p. 374). This repositioning of the self is a critical moment for ePortfolios, as it brings together the other approaches identified in this review,

specifically that students and teachers should feel a sense of shared ownership of their ePortfolios (i.e., a student might realize that their ePortfolio was not possible without their teacher's feedback).

Co-Curricular Integration

Collaboration

Successful ePortfolios need large-scale collaboration on multiple levels (Lam, 2021). While the reported approaches identified in this review mainly describe faculty and student collaboration, administration and staff are also important collaborators in facilitating co-curricular ePortfolios. Administration can provide support by offering credentials or badges (Kehoe & Goudzwaard, 2015), portfolio pedagogy training (Lewis, 2017), and/or technology support (Mueller & Bair, 2018). Coordinating collaboration requires a more global view of ePortfolio use. In fact, Morreale and Zile-Tamsen (2017) found that barriers, such as learning how to use an ePortfolio platform, could be mitigated by linkages across agents. For instance, teachers in first-year university courses could allocate time to introducing students to a particular ePortfolio platform, which could then be used in a capstone course (Lewis, 2017; Morreale & Zile-Tamsen, 2017). Unfortunately, as in the case of Roberts et al. (2016), these connections do not happen on their own. As Roberts et al. (2016) and Mueller and Bair (2018) found, it is not enough to simply hold the expectation that students will create an ePortfolio. Rather, explicit touch points must be built into the process, giving students multiple opportunities in different contexts to practice negotiating and transferring intended identities across time and space.

Transfer

Teaching for transfer indicates a pedagogy that emphasizes the ability to move knowledge, concepts, skills, and identities across contexts (Adler-Kassner et al., 2016). Co-curricular ePortfolios tend to promote awareness (and, therefore, metacognition) of how identity is socially formed. This awareness calls attention to the fact that learning does not always result in direct application. On the other hand, students need to reorient themselves to novel situations by identifying and employing appropriate strategies in particular contexts (Adler-Kassner et al., 2016). Transfer does not mean copying a learned skill or concept from one context and pasting it directly into a new context. As novel challenges emerge, learned skills or concepts need to be negotiated. Transfer requires what Yancey (2017) called a "remix" of prior learning to fit new situations (p. 189). Transfer is both critical and creative, and it can be facilitated using co-curricular ePortfolios.

As illustrated in this review, the subtheme of collaboration depends on a student's awareness of the role they play in a particular context; this awareness also depends on the awareness in other agents. According to Zhu (2004), students were more likely to transfer writing across contexts when faculty from both writing programs and disciplines shared the labor of teaching/contextualizing writing. Related to this finding, Roberts et al. (2016) demonstrated the need for ePortfolios to be introduced as early as possible in students' learning environments. By introducing ePortfolios early in a student's learning, teachers can scaffold ePortfolio use and emphasize the importance of adapting identity in response to uncertain contexts. Kelly and Le Rossignol (2022) offer the phrase "shape shifting portfolio" to describe a process in which students have structured opportunities to (re)assemble the digital narratives about their learning, making changes to meet different needs (p. 789). With teaching for transfer in mind, ePortfolios can address current challenges of higher education by encouraging students to view their identities as strategic choices, set within particular contexts, that have the power to adapt to changing professional dynamics.

Discussion

This review was guided by the question: In what ways might undergraduate college students assemble an identity in an ePortfolio? The following recommendations are derived from our synthesis of the reported Writing Studies literature in this review and our personal experiences.

The reported literature suggested that when students are encouraged to take ownership of their ePortfolios, and further, when they are encouraged to deploy their creative talents to tailor their ePortfolios to their own interests, tastes, and identities, students are more likely to acknowledge the value in ePortfolio assemblage and how their product can assist them in upward learning and professional mobility (Bennet et al., 2016; Hewitt, 2001). However, for students to see the value in ePortfolio assemblage and usage, they must be guided by trusted teachers and/or mentors, showing them the possibilities for their ePortfolios and what they can offer to others at the university and beyond (Kelly-Riley, 2011; Lam, 2017). Support, then, is crucial.

Support and mentorship also have implications for student confidence and metacognition. When students are supported in their roles as learners, assemblers, and communicators during ePortfolio building, revising, and editing (Lam, 2018), they are more likely to become confident in these roles and, often, in their final product—their ePortfolio (Meehan & Howells, 2019). When students are especially confident in their final ePortfolio product, they are more likely to make use of their work and share it with others.

How does one help students to (further) develop their confidence in ePortfolio assemblage? One way is to ask students to reflect (Adler-Kassner et al., 2016; Yancey, 2015; Yancey et al., 2014). Teachers, for instance, might ask students to free write in a dedicated journal, taking the time to identify their fears and challenges surrounding their ePortfolio work (Yancey, 2015; Yancey, 2017; Yancey et al., 2015). Students could also report in their journals the successes they experience in their ePortfolio assemblage, even detailing how they worked through a challenge in their ePortfolio building. Teachers should encourage students to identify, in detail, how they specifically worked through their challenges, noting what they did first, second, third, etc., before arriving at a solution to their problem (Adler-Kassner et al., 2016; Yancey, 2017; Yancey et al., 2014). Teachers should also encourage students to speak to the learning challenges they encountered and how they moved through those challenges (Adler-Kassner et al., 2016; Yancey, 2017; Yancey et al., 2014). To prompt this level of thinking, teachers could ask students, for example, “How might the problem you encountered exist in other contexts, and, if you find yourself in a similar situation in the future in a new context, how do you plan to apply the knowledge gained from working through your challenge in a new context?” Such prompting by teachers can help students acquire metacognitive awareness of their procedures, leading them to transfer knowledge and skills beyond one context (Adler-Kassner et al., 2016; Yancey, 2017; Yancey et al., 2014). Through reflection, students can gain confidence in their ePortfolio process and product and transfer knowledge about their ePortfolio assemblage efforts across contexts.

As noted in this review, much of transfer stems from a student’s ability to understand the goal of a task or assignment and how working toward that task or assignment might prove beneficial—or help them—in other learning and/or professional contexts (Tur et al., 2019). Simply, students want to understand the purpose for and value of what their teachers are asking of them. In terms of ePortfolios, when teachers clarify to students the purpose of building an ePortfolio and identify clear examples of how an ePortfolio later assisted a student in acquiring scholarships, badges, or even internships, for instance, then students will likely recognize the value of the work they are being asked to take on (Yancey, 2015; Yancey et al., 2014).

The reported scholarship in our review also identified the importance of collaboration among faculty, students, administration, and staff. When collaboration exists across the university, when teachers, administration, and staff across the university take seriously the value of ePortfolios, and when they collaborate on building and presenting an ePortfolio pedagogy, then, early on, students from across the disciplines can be introduced to the value of ePortfolios

(Kehoe & Goudzwaard, 2015; Lam, 2021; Lewis, 2017; Mueller & Bair, 2018); students can also begin building ePortfolios, gathering artifacts and arranging them to reflect their own creativity and values. Instilling an ePortfolio pedagogy culture, as Yancey (2019) reminded readers, is central to the success of students understanding not only the purpose and value of ePortfolios but also the process and presentation of them. Without collective commitment, students lack necessary ePortfolio support (Kehoe & Goudzwaard, 2015; Lam, 2021; Lewis, 2017; Mueller & Bair, 2018) and may become less likely to value skills and knowledge pertaining to ePortfolio process and product. So, “In what ways might undergraduate college students assemble an identity in an ePortfolio?” The answer is complex, as it all depends upon a dedicated network involving ownership, reflection, purpose, and co-curricular involvement. In other words, it is dependent upon assemblage.

Conclusion

ePortfolios are not new, but the re-emergence of ePortfolio interest seems to come in response to the eruption of digital environments. Given the disruption of education and social connection due to COVID-19, it becomes critical to understand the significance of digital, virtual, and web-based identities. Because of the web’s dynamism of forms, assemblage makes sense as a framework not just for analysis but also for thinking about ePortfolio implementation. As a process, knowledge materializes not so much from creating something new through synthesis, but by bringing together familiar artifacts and forms that reveal, via their relationships to one another, new understandings. For instance, the web’s ability to archive and document various “selves” (e.g., the self we present on Facebook versus the self we present on LinkedIn) provides opportunities for a layered reflection of the transferability and negotiability of identity, critical skills to survive the hyper-dynamism of professional environments. Everything from image-sharing to re-posting contributes to a rapid exchange of artifacts that momentarily snapshot who we are in particular contexts. Thus, forms like digital storytelling become increasingly important as methods of deep reflection (Kelly & Le Rossignol, 2022).

In this review, we indicated that for undergraduate college students to assemble an identity in an ePortfolio, much must fall into place. ePortfolio process and product are interconnected with assemblage. Moving forward, we suggest that ePortfolio assemblage is an ecology, “emerg[ing] through complex networks of interrelations, depend[ent] upon adaptation, fluidity, and the constant motion of diverse rhetorics and discourses” (Reiff et al., 2015, p. 4). Given this notion of assemblage, we argue that

successful ePortfolio design does not rest on the shoulders of an individual. The process of implementing an ePortfolio also needs to be an assemblage so that students receive personalized feedback, collect artifacts from experiences that might extend beyond the boundaries of a single class, and revise their assemblages across different experiences. By offering opportunities to (re)assemble digital selves, ePortfolios become a valuable tool for navigating uncertain professional contexts.

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