

Students as Co-Designers: Peer and Instructional Resources for Novice Users of ePortfolio

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Several decades of ePortfolio research confirm the power of the tool for helping students make meaning of varied curricular and personal experiences. For first-time users, however, the learning curve may be steep, and the gap between institutional or instructor goals and student experiences may be wide. Some studies suggest that students themselves may address this gap by taking a direct role in the implementation of ePortfolio as planners, sources of examples for others, or as peer reviewers. This study explores the use of student co-designers in a linguistics course requiring a cumulative ePortfolio project. Student co-designers held a number of roles over the course of the project and provided feedback to the instructor on the principle challenges students faced with the project. Class-wide feedback reveals that, while most were anxious about this unfamiliar tool at the beginning of the course, peer assistance and continued practice increased their belief that ePortfolio is an effective way for them to see and appreciate their learning progress over the semester.

The strength of ePortfolio as a teaching tool is the ability it lends the learner to weave his learning story from academic and social threads. Increasingly appreciated as a tool to make learning visible and encourage deeper thinking (Enyon, Gambino, & Török, 2014), ePortfolio could be an especially powerful for enhancing learning in areas that require personal, sometimes frightening risk taking. Language learning is such an enterprise. Humans use language to both understand and assert our identity, and we do it with ease and little conscious thought. The use of ePortfolio in language courses is not unique but is most often documented as a cumulative program requirement wherein many of the outcomes of the project relate to acquisition of target language skills and related cultural experiences (Karsenti & Collin, 2010), or is a tool for blended learning (Young & Pettigrew, 2012) or a core component of language teacher preparation (Scida & Firdyiwiek, 2014). These contexts are appropriate for ePortfolio pedagogy, as the intensely personal process of language learning takes the learner out of the comfort of the familiar and forces confrontation with new words, personalities, cultures and more, and the space afforded by ePortfolio is the perfect place to create meaning from such experiences. Yet beyond language acquisition, how do we confront language on a daily basis and, more importantly, how do we learn from it?

The study described here is a collection of firsts. It details the implementation of a cumulative course ePortfolio project for first-time users, students in a second language linguistics course wrestling with an analytic approach to language study, and further, explores the benefits of collaboration between professor and students who are acting for the first time as co-designers of a course project. This study is unique to the use of ePortfolios cited above in a couple of significant ways. This is the only course in the larger degree program that uses ePortfolio pedagogy, and the

resulting anxiety is a variable of the study that will be discussed in the following pages. Additionally, because the course assumes a certain level of conversational competence in the target language, the goal of the project is not acquisition but rather the use of and reflection upon language in its many forms and contexts. Students were encouraged to observe and reflect on not only the target language (Spanish) but also other languages spoken or studied, for the larger purpose of becoming more critical observers of language as it occurs in a multi-modal world.

Literature Review

ePortfolio for Learning

An ePortfolio can serve several purposes and a variety of stakeholders. Lorenzo and Ittelson (2005) described four broad uses of ePortfolio: (a) as a mechanism for showcasing student work, perhaps to potential employers; (b) to monitor and assess student learning and development; (c) to document the learning process; and as (d) a hybrid approach that satisfies some combination of the aforementioned purposes. Abrami and Barrett (2005) and Barrett (2007) distinguished a process-based portfolio, as one that documents student learning in perhaps a loose, messy fashion, from a product-based portfolio, with an end goal of showcasing a neat final product to external stakeholders. Bass (2012) notes the ability of ePortfolio to organize learning around the individual rather than the course or curriculum. In language learning, constructivist pedagogies enhance learning by situating the learner among other learners (Bass 2012; Carson, McClam, Frank, & Hannum, 2014), and ePortfolio provides the electronic space to support observation, interaction, and reflection. The ePortfolio described here was learner-driven, often loose and sometimes messy, and connected to but not dictated by course content. The primary function

of the current project was to encourage students to document their personal learning experiences as they drew connections between course content and previous and current language learning experiences in both native and second languages.

One major benefit of ePortfolio is its role in helping to shift learning to the student as participant rather than as mere observer (Shulman, 1998). Even in courses or programs in which the format of the ePortfolio is prescribed or the outcomes defined by non-student stakeholders, the ability of the student to author his own story about learning yields numerous benefits. Perhaps the greatest of these is the ability to connect what is learned in the academic context with what is experienced or learned in any number of other contexts, both in and outside of the academic environment (Acosta & Liu, 2006; Enyon et al., 2014; Tosh, Wedmuller, Chen, Light, & Haywood, 2006). This benefit is the chief reason that portfolio pedagogy was a key feature in the course described in this study. One of the stated course learning outcomes was that students would develop the ability to critically observe language use outside of the classroom. The ePortfolio was both a mechanism for instructor assessment of that outcome (Barrett, 2007; Zaldivar, Summers, & Watson, 2013) as well as way for students to construct their learning and reflection with a great degree of freedom.

Difficulties for First-Time Users

While the benefit of ePortfolio to student learning is widely and increasingly accepted, research also documents the potential difficulty for students engaging in portfolio building for the first time. Jenson (2011) described the difficulties faced by first-year students in producing quality reflections in an ePortfolio study and pointed to the need for specific instructional strategies to help students develop skills for reflection and self-regulation. O’Keeffe and Donnelly (2013), eliciting student feedback on the challenges they faced with an ePortfolio assignment, noted difficulties to be in the area of understanding what was needed, how to present information in diverse ways, and the time involved in putting it all together. For students who are motivated by the end goal (final project, final grade) rather than the process, the task of documenting their learning through artifact creation and reflection can be quite difficult. If, as Neary and Winn (2009) suggested, students approach learning passively, without deep thinking, the development of “folio thinking” (Penny Light, Chen, & Ittelson, 2012) can be difficult.

Instruction That Promotes Portfolio Building

There are ways to mitigate the learning curve of ePortfolio. Previous research has pointed to the need for

specific instructional strategies to better support students’ ability to integrate learning experiences and reflect on them. Clearly stated guidelines and expectations, a well-structured medium, scaffolding, mentoring, and assessing the process of portfolio building have all been shown to be beneficial to students (Bowman, Lowe, Sabourin, & Sweet, 2016; Hadley 2007). Also, research has noted the need for professors to better integrate ePortfolio into the instructional process (Bowman et al., 2016; O’Keeffe & Donnelly, 2013). The timing of that integration is particularly important, and previous studies show that the scaffolding of activities—artifact creation and reflection—should be done over time and presented as an iterative process (Bowman et al., 2016; Hadley 2007; Qvortrup & Keiding, 2015). Lastly, inclusion of the ePortfolio as some percentage of summative assessment is recommended, as it increases student perception of the value of the effort invested (Bowman et al., 2016).

Students as Participant Designers

The purpose of ePortfolio and the outcomes attached to it are most often decided by instructors, course designers, program leaders, and perhaps institution administrators directing learning initiatives. The degree to which the ultimate stakeholders—the students themselves—determine the purpose and approach to ePortfolio construction is still an emerging area of study. It is far more commonplace for teachers and designers to infer or predict student perspectives in course planning than it is for them to actually include students in the process of design and implementation (Könings, Brand-Gruwel, & van Merriënboer 2010). Yet valuing the student stakeholder has been shown to improve student engagement and acceptance of the final work (Lizzio & Wilson, 2013) and, perhaps most importantly, may bridge the gap between teacher and student perspectives (Könings et al., 2010). Previous research has examined the ways that students can act as participant designers in the creation and implementation of ePortfolio, and suggests several broad areas of involvement: as designers, as models for ideas and examples, and as peer reviewers.

Könings et al. (2010) examined a number of teachers from two secondary schools in the Netherlands that collaborated with students in the instructional design process. Teachers and students together designed instruction, discussed student perspectives, and made changes. Evaluations of all students showed agreement with proposed changes, suggesting the benefits of including peer perspectives in the planning process. McNair and Borrego (2010) involved graduate engineering students as collaborative co-designers in a problem-based learning assignment that utilized ePortfolio. Data revealed that students developed increased awareness

about program and career assessment as a result of their involvement in the design process.

Involving students as sources of ideas and examples has also been cited as good practice.

O’Keeffe and Donnelly (2013) cited student feedback indicating that learning from peers, and specifically seeing what others had done, provided the inspiration to try new things. Similarly, Sadler (1989) found that giving students the opportunity to review peers’ high-quality work can increase understanding of requirements and what constituted a good artifact. Parkes, Dredger, and Hicks (2013) also gave their teacher education students access to the work of a previous cohort so that they might have good models for their own. Carpenter, Apostel, and Hyndman (2012) cited a need for peer review of the technical aspects surrounding the design, layout and organization of ePortfolio.

Perhaps the greatest role for students to play is that of mentor and reviewer, to listen to, reflect upon, and question each other’s experiences (Ring, 2015). Wade, Abrami, and Selater (2005) cited the critical element of self-assessment and peer-assessment in successful ePortfolio projects. Yet, as Ring noted (2015), while we know the advantages of peer feedback in general, there is abundant evidence supporting the advantages of peer feedback related to the use of ePortfolios. Hadley (2007) found the mentors and peer mentors to be essential in helping students to engage in deeper, more thorough reflection. Through portfolio forums, students felt safe to share their work and reflections with classmates, an activity that promoted their attainment of program learning outcomes. Silva, Delaney, Cochran, Jackson, and Olivares (2015) collected data from undergraduate students involved in the developmental phase of an institutional ePortfolio system. Students reported that ePortfolio design influenced their thinking and engagement in the project, and the authors suggest a larger role for students in institutional assessment.

Research Aims

This study seeks to answer two questions. The first asks if ePortfolio increases students’ ability to connect course content to language usage in context outside of the classroom, and if this skill increases over the semester. In particular, can students demonstrate the ability to think critically about their own language use or the language they observe in others? The second question asks if the student experience with ePortfolio is aided by assistance from peers. This study explicitly involved students in the implementation of an ePortfolio project by enlisting them as designers and implementers and sources of peer review and assistance; does their assistance benefit their peers?

Methodology

The Course and Students

The backdrop for this study is an upper division Spanish linguistics course, required for students majoring in the language and also popular with many pursuing a minor. The course is offered by the department in both fall and spring semesters, with several sections offered each term. It is designed to introduce students to the major subfields of linguistic study. While the course focuses on the Spanish language and is conducted in Spanish, it incorporates a small degree of cross-linguistic comparison to English. Language data analyzed throughout the class is derived from written and oral sources. This course is a gateway course in that it introduces many students to linguistic study and requires them to view and analyze language differently than they had in previous conversation, writing, and literature courses.

Twenty-four students were enrolled in the class during the semester of this study. All students were native speakers of English, and three were heritage speakers of Spanish. Students at all levels of class standing were enrolled in the course. Two of the students were also Honors students at the university and were pursuing Honors credit in the course. They earned that credit by serving as peer designers and reviewers on the ePortfolio, and their responsibilities in that role will be discussed below.

The inclusion of the ePortfolio stems from the instructor’s belief that the knowledge and skills targeted by the course can only be attained and, ideally, generated to other language courses and experiences if students are led to connect course content to authentic language use outside the classroom. The implementation of this project grew from a pilot study conducted in a previous semester and jointly with an instructor of another section (Gordon & Mata, 2014). Several key findings from the pilot resulted in improvements and additions to the current study that will be detailed in the following pages. The ePortfolio project described in this paper was a required component for all students and accounted for 35% of the total course grade. Other course requirements included participation and preparation (10%), practice sets and pop quizzes (25%), and two exams (30% combined). Several intermediate deadlines were set in order to stimulate consistent work on the project, so that students had to submit or prepare for (1) a general design plan; (2) the first three artifacts and reflections; (3) three more artifacts and reflections; and (4) remaining artifacts, reflections, and final format of the ePortfolio. These dates aligned with the timing of in-class workshops led by the Honors students, and those

Table 1
Timeline of Course Requirements and Data Collection

Week	Course Requirement	Data Collection
2	ePortfolio guidelines distributed	Pre-portfolio survey
3	Students select preferred platform	
4		1 st peer workshop (3 artifacts, reflections due)
8		Mid-semester survey
10		2 nd peer workshop (6 artifacts, reflections due)
12	Student presentations of ePortfolios	
14		End-of-semester survey

will be described further on. Table 1 outlines the timeline for meeting the checkpoints just described.

Situated in the context of the larger aims of the course, the ePortfolio provided a way for students to show attainment of learning outcomes in a personalized fashion, distinct from the other, more traditional assessments of the class (practice, quizzes, and exams). Learning outcomes that targeted the broader skills of analyzing language data, identifying linguistic processes, and using appropriate tools and terminology, among others, could be assessed with evidence that students sought or encountered in their individualized learning both inside and outside of class.

Instructional Strategies

The current project employed a number of the recommended pedagogical strategies previously cited for improving the student experience with ePortfolio. Throughout the semester the instructor employed several of the strategies recommended by previous research for the purpose of giving continual assistance to students for building their ePortfolios. In the second week of class the professor distributed and explained the guidelines for the project, which outlined (a) the definition and characteristics of ePortfolio; (b) the definition and examples of artifacts and reflection; (c) the required number of topics, artifacts and reflections to be included; and (d) the grading rubric and weight of final ePortfolio in final course grade calculation (30% of final grade). The professor consistently emphasized the importance of reflecting on artifacts as they were added. The students were also given links to examples from other institutions and also to the work of students in the pilot project. Lastly, the guidelines also included an assessment rubric for the final project. Two days were scheduled for in-class workshop time in which students could engage in peer review and also receive help from the Honors student assistants. More detail follows on these workshops.

On several occasions during the semester the professor's content included an artifact and reflection that demonstrated the concept under discussion, shared

in a way that scaffolded the process for the class. These examples came from both the professor's own bank of artifacts and reflections, collected over time, and also from the work of students in the previous pilot experiment. For example, given a topic of discussion, the instructor would provide an artifact and a complete example of an accompanying reflection. A second example in the same class or the following day would provide the artifact but an incomplete reflection, perhaps with prompt questions, that students worked on individually for a few minutes in class and shared with others. Figures 1 and 2 are examples of artifacts and reflections included in class presentations.

Student Designers and Reviewers

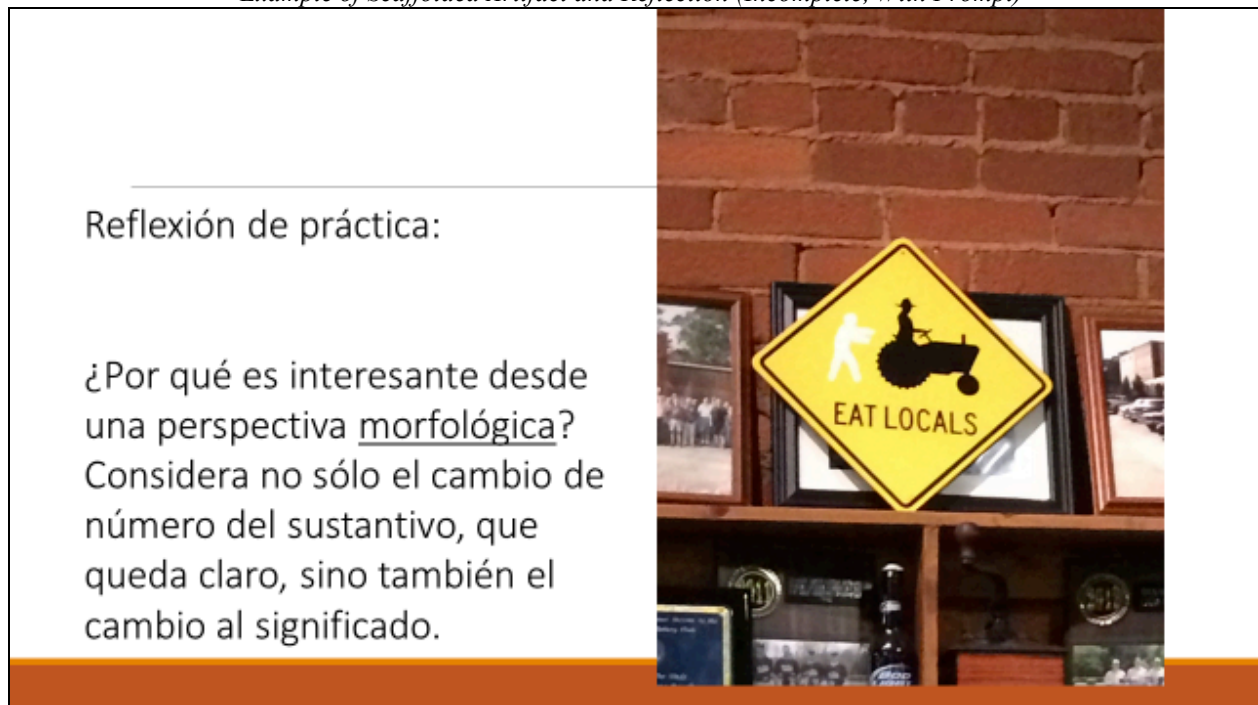
To determine the benefit of student assistance and peer review, two Honors students participated in the project as co-designers and reviewers. The procedure for obtaining Honors credit for non-Honors courses is to obtain the permission of the instructor and to enter into an agreement about an advanced project that the student will complete in order to earn the credit. The required ePortfolio project had already been announced to the class, and was for the instructor an opportunity to extend the research started on the aforementioned pilot. At the invitation of the instructor the Honors students agreed to participate on the project for Honors credit. Their responsibilities were to assist the instructor throughout the semester by (1) assisting in the development of pre- and post-portfolio surveys, (2) participating in the first class workshop on the project and facilitating the second workshop, (3) relaying classmates' feedback to the instructor, and (4) writing their own blogs about their experience as ePortfolio creators and as participant designers. These students also had to include four more artifacts and reflections than their peers in their final ePortfolios. As one of the students described their role in her blog:

Our real emphasis is on acting as co-designers for this project. We are going to try to stay one step ahead of the class in the portfolio so that we can help our peers understand what the project entails,

Figure 1
Class Example of Artifact and Reflection



Figure 2
Example of Scaffolded Artifact and Reflection (Incomplete, With Prompt)



and we want to achieve a deeper understanding of how the process works for each student. [Our professor] used the term “participatory research” to describe this.

Data Collection and Analysis

In order to address the research aims of the study, data were collected from two sources: (a) brief surveys on the student experience administered at three points over the semester, and (b) the Honors students’ blogs. Additional feedback collected from various students, not included in the sources just noted, were also archived by the instructor in order to provide fuller understanding of the student experience and to motivate improvements to instruction in future classes.

Brief surveys were administered to all students at the beginning of the semester (week 2), at the midpoint of the semester, and at the semester’s end, after submission of final ePortfolio projects. The first and third surveys gathered pre- and post-project data, while the second was designed to monitor the progress of student work and elicit feedback on their concerns and problems, for the purpose of informing the instructor’s intervention strategies. The mid-semester survey included one item related to the role of peer assistants. The survey items are included in Appendix A-C. The timeline of required assignments and data collection methods are presented in Table 1.

The Honors student blogs had two goals: for the Honors students to reflect on their own experiences as ePortfolio authors, discussing challenges as well as rewards, and to note their experience as designers and reviewers on the project. In their role as assistants on the projects, they had several opportunities to interact with other students on the ePortfolio project, and were encouraged to describe their experiences in that role as well as to note common challenges the class faced on the project. Two in-class workshops were a prime opportunity for these students to assist their classmates. The first workshop was led by the professor and students worked with each other in small groups. All students completed a peer review feedback form that was returned to the professor and then to the students. The second workshop followed the format of the first but was led by the Honors student assistants. After the second workshop they submitted to the instructor a written report of any persistent challenges or questions coming from their classmates. Lastly, their blogs were an additional way to report on their observations. A component of their own ePortfolios, the blogs recorded their processes as portfolio authors well as their findings as project assistants. Some extracts from their blogs will be shared in the following pages.

Results

Beginning of Semester Survey

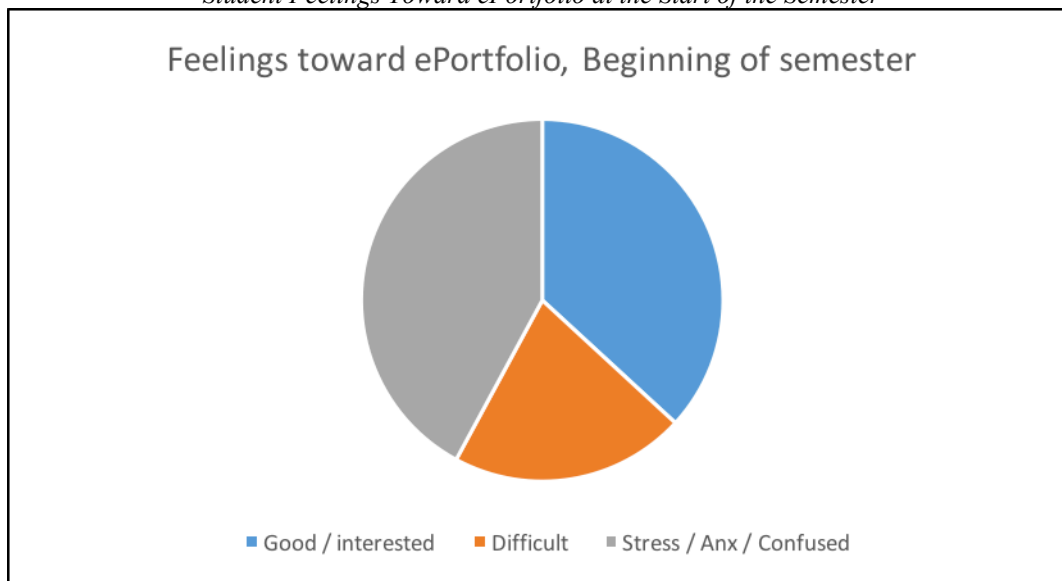
Data collected at the beginning of the semester shows that most students were truly new to ePortfolio and were anxious about the project. Twenty-three students responded to the beginning of semester survey, and 18 indicated no previous experience with ePortfolio. Four of the remaining five respondents indicated that their previous experience came at the same institution. While the survey did not ask for additional information on that item, it is likely that those students had completed a portfolio required in the university’s first-year writing program. Figure 3 shows the predominant themes mentioned by the students when indicating their feelings at the outset of the semester. In open-ended responses to the question “What are your feelings toward the ePortfolio at this time?” answers were divided between those who felt good or possibly even interested in the project and those who indicated stress or anxiety. A smaller number of comments explicitly predicted difficulty with the assignment. Of those indicating stress or anxiety, the focus of that feeling was evenly distributed between worries over the time it would require (four comments), a feeling of technical inadequacy (four), and uncertainty about what would constitute an artifact or where to find them (five). The final survey item asked if students anticipated any benefits from the project. Of the 12 open-ended responses given, seven expressed the expectation that the project would help them with their daily Spanish or other language skills. The remainder cited the expectation for technical skills that could be used in the future for other purposes (e.g., classes, resumes).

The Honors student blogs reflect some of the concerns expressed by their classmates. However, the predominant worry was in regard to time, and how to work regularly and consistently to find artifacts and, more importantly, write the accompanying reflections in a timely way. One entry noted, “The hardest thing for me thus far has been gathering the willpower to actually sit down and write these things.” Another said, “I keep having ideas for artifacts but I don’t know to which category they should belong.”

Mid-Semester Survey

At midpoint of the semester 21 students completed a brief survey designed to check their progress on the project, their feelings toward the project, and specific comments on particular components (artifacts,

Figure 3
Student Feelings Toward ePortfolio at the Start of the Semester



reflections, technology, time investment). Regarding their progress, only one-third indicated that they had four to five artifacts (of the required 12). Ten students had only completed one to three artifacts. Half of the students indicated that they did not have reflections to accompany all of their artifacts. The midpoint survey asked where students were finding their artifacts, and the two most popular sources were personal interactions and entertainment (e.g. tv, music, internet).

The final question of the mid-semester survey asked students to give open-ended responses to their feelings regarding several aspects of the ePortfolio. Almost all students still indicated concern for their ability to find artifacts. Time invested and the design and function of the ePortfolio were also major concerns. These two items received the same number of responses, and it might be that the two were related if students were investing a lot of time around design and technical issues.

End of Semester Survey

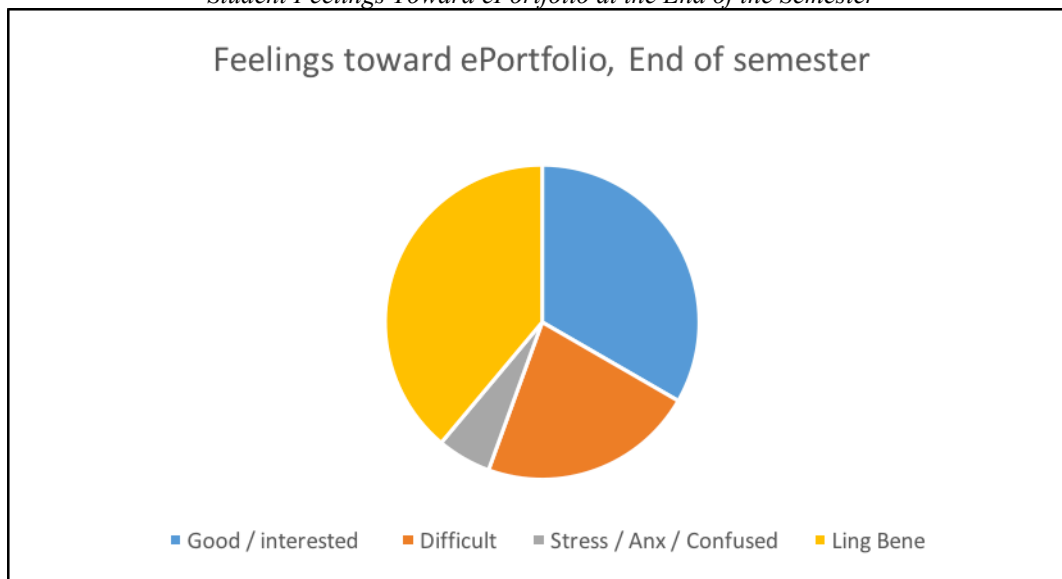
Upon completion of the ePortfolio, students completed a survey that targeted their feelings toward the project, their reactions to the help they received during the semester, benefits of the project, and things they might do differently if they could do it again. Results indicate that, while students found the project to be difficult, they made fewer comments regarding the stress or anxiety that the project produced for them. In addition, students frequently cited benefits to their linguistic learning. Figure 4 shows the predominant

themes mentioned by the students when indicating their feelings at the completion of the project.

When noting the benefits to learning, several comments in particular stand out: For example, (a) “I feel that it helped me learn the material more and really showed me how much I had learned throughout this class”; (b) “Good way to apply themes learned in class to our daily lives”; (c) “I think it challenged us to be more aware of examples of linguistics in our everyday life”; (d) “I think it was pretty fun and similar to how I look for language use naturally in life”; and, (e) “It was neat to connect what we were learning in class with the real world. This helped me be more aware of real-world linguistic phenomena, and it helped me to internalize what we learned in class.” Furthermore, when noting the difficulty of or time invested in the project, several students mitigated those responses with a positive observation. For instance, (a) “It took a lot of time and effort but I feel accomplished”; (b) “It was difficult, but I enjoyed it”; and, (c) “I think it was an enjoyable way to learn a lot—‘a spoonful of sugar.’”

The survey asked if students experienced any other benefits from doing the ePortfolio, and a sample of their responses follows: (a) “Designing skills and learning about different cultures”; (b) “Used and analyzed Spanish in a more daily setting”; (c) “I made one for another of my classes for a project because I was introduced to it this semester. It was also an extra thing that forced me to think about linguistics every day”; (d) “It kept linguistics in my everyday life in a way that I would not have been able to do otherwise”; (e) “I enjoyed seeing what I have been learning in class in

Figure 4
Student Feelings Toward ePortfolio at the End of the Semester



everyday life”; and, (f) “I was able to explain some linguistic concepts to my family!” The Honors students’ blogs echoed to some degree the responses of their classmates. One of the two, reflecting on the experience as a whole, said the following:

I expected this class to be easier than it was. But I don’t regret taking it at all because I had always wanted to learn about linguistics and now, having [completed this project], I am able to notice things about language that I didn’t before, both in English and in Spanish.

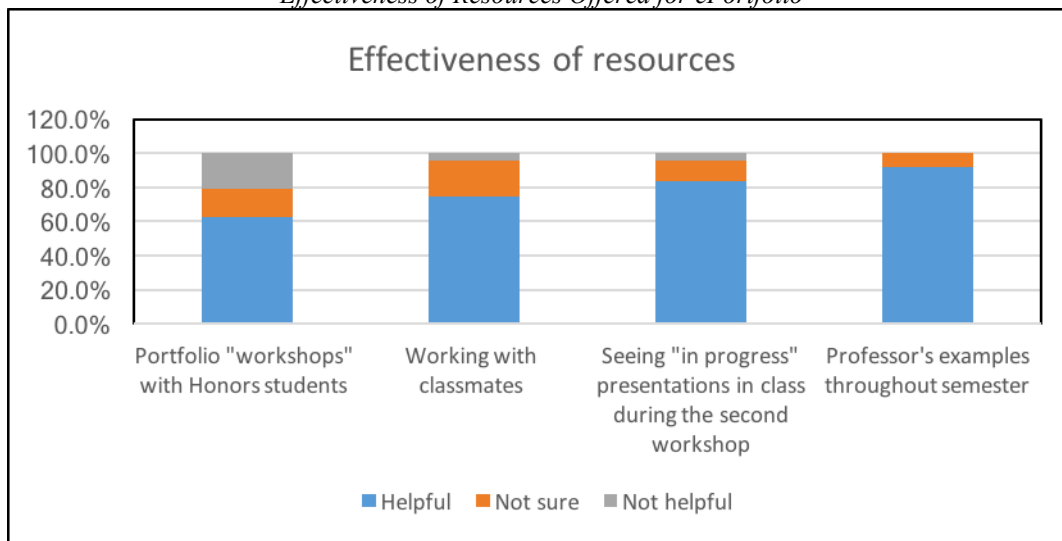
A second student wrote, “This blog project has really succeeded in making me think about linguistics pretty much all the time on some level. And I think this project has improved my time management and Spanish composition skills.”

The final survey also gave students the opportunity to reflect on the things they might do differently if doing another ePortfolio. The dominant themes among the 23 responses pertained to earlier completion of artifacts and reflections, choice or organization of platform, and the type of artifacts selected and, for some, the thematic organization of them. These themes are consistent with the concerns expressed at the beginning of the semester, yet the responses convey a sense of personal responsibility for the choices made and the work done. Some also indicated a realization of the integrated nature of the artifacts and reflections and the need to work on both in a consistent manner. For example, some students noted the following:

- “I would make sure I wrote reflections at the same time of finding artifacts, it was mentioned in class that that was important, but I did not feel the motivation to do it and then suffered later for it.”
- “Find artifacts more tailored to my personal everyday life.”
- “Find artifacts earlier and look out for more unique and interesting ones.”
- “I understand that [writing reflections on time] is important because the longer I spend between posting artifacts and reflections, the more I forget what I found notable about the artifact in the first place.”

With regard to the value of peer assistance with the ePortfolio, 88% of students responded that it was helpful to receive help from others. In a follow-up survey question, students indicated specific sources of help that were helpful or not helpful. Response options included the various forms of human assistance and examples that were offered throughout the semester. Figure 5 displays the responses to this survey item. Most students felt that seeing the professor’s examples during the semester was helpful, followed by working with classmates, as happened in and outside of class. The in-class workshops in which students worked in groups of three and were assisted by Honors students was least frequently cited as being helpful, and in fact a

Figure 5
Effectiveness of Resources Offered for ePortfolio



small number of students also indicated that those sessions were not helpful.

When reflecting on their observations of their classmates' experiences, the Honors students noted a range of reactions as the semester moved along. One of the two did not sense many technical issues at work at the time of the first survey, and noted, "I doubt that even the people who were anxious about working with these sorts of sites could be having too much difficulty." Later in the semester the other Honors student noted a continued sense of worry among her classmates with regard to potential sources for artifacts, saying, "One thing I think students understand better now is where artifacts should be coming from, after seeing [the professor] show several examples in class. Despite that, I think they are still worried about finding their own artifacts." After the first peer workshop, assisted by the Honors students, one of them noted the positive effects of the peer review process and exchange of ideas, writing,

At the end of the peer workshop, everyone seemed to have a better idea what was going on an even a new motivation to continue working on the portfolio. After class, one classmate asked if he could email me with more questions.

Discussion

The findings from this study suggest that for first-time users of ePortfolio, the challenge is great but for many, so is the reward. The first question asked by this study was if the student experience with ePortfolio

improved over the semester, and it appears that it did in terms of overall satisfaction with the experience. While the anxiety that students noted at the beginning of the semester regarding what constituted an artifact, how to reflect on them, and how to organize it all in the electronic space endured through much of the semester, this stands to reason, as the development of folio thinking is one that requires time and a great deal of practice. Yet the findings also suggest that the students left the project with a sense of accomplishment and an ability to see their progression over the semester, progression not only in their ability to construct an ePortfolio but also to observe language more critically and reflectively. These results echo those found by O'Keeffe and Donnelly (2013), whose students expressed that despite the challenges, the endeavor of building a portfolio was ultimately worth the effort. Particularly noteworthy were the comments, such as those cited earlier, that referenced a heightened awareness of language use around them, and an increased amount of time that they thought about language outside of the classroom. Overall, the findings suggest a shift in the way students thought about ePortfolio, from initial worry about its contents to a realization that it increased their awareness outside of class of principles discussed in class.

The second question addressed by this study was in regard to the value of peer review and assistance. While students did find peer review and workshop time with co-designers to be helpful, it did not rank as the most helpful resource offered to them. Rather, the instructional strategies implemented during the semester—additions motivated by the instructor's pilot

project the year before—were cited as most helpful in moving students toward a better understanding of how to find artifacts, categorize them, and reflect on them. Such examples were, in large part, the instructor's personal artifacts that she used to model for the class the way they might encounter language data and think deeply on it. Some of the examples given in class were from the pilot project, the work of students who succeeded in achieving folio thinking in their linguistic experiences. Surprisingly, the time spent with the Honors student co-designers in the class workshops did not rate as very helpful for most students. While these students were a few steps ahead of their classmates with regard to the project and the work they were required to do, it is possible that their classmates did not perceive them as authoritative sources. This was not the case for all students, of course, as some did reach out to the co-designers for assistance after the workshops and at other times during the semester.

The blogs written by the Honors students reveal that these students took their responsibilities to the project seriously as they reflected on the multiple roles they played in the project. These students wrote honestly about the challenges they faced as authors of their own ePortfolios: time needed to build the space, types of artifacts needed, and most notably, the ability to keep up with reflection writing. These students, just like their classmates, were ePortfolio novices, but their blogs reveal a desire to use their own experience to give good counsel to their classmates. Ironically, their roles in this project may have helped them as much as, or possibly more than it did their classmates.

The findings on these two questions may be of greatest utility for anyone thinking to implement ePortfolio in a course or program. While the implementation of this pedagogy in a single course immediately introduces certain challenges, it is nevertheless a worthwhile endeavor to explore the initial stages of the student experience with ePortfolio. As discussed earlier here, gaps often exist between the instructor's vision and goals for student learning and student perceptions about what they want to learn and can do. In the work of ePortfolio creation, the first gap one might encounter is a technological one. There is an assumption on the part of many digital immigrant instructors that our digital native students have an intuition for all things technological and all forms of social media. Yet research has stated (Carpenter et al., 2012), and it has been observed here, that there are hurdles that some of our students must overcome in order to build the space, before they can begin to acquire, demonstrate, and refine their critical and reflective thinking skills. The experience of the students described here underscores the importance of giving adequate consideration and resources to students' technological preparation.

Peer assistance was a valuable addition to this iteration of the ePortfolio semester project. The value in peer review is in the safe space it creates, a time for students to express insecurity and lack of ability and to find help. Findings from this study suggest that peer assistance of any type is valuable, and that the help offered through the study co-designers was perhaps on par with, and no more valuable than, assistance from other peers in the class. This finding may be attributable to the limited time allotted to training these two students, confined to a few hours of meetings with the instructor and several discussions by email. Nevertheless, as their blogs reveal, their experiences as both novice ePortfolio authors and project assistants attributed an additional measure of depth to their experience, and confirms that peer review is a key component of the ePortfolio experience.

The findings of this study are relevant to teaching in many disciplines. As asserted here and elsewhere, the time required for the development of folio thinking suggests that ePortfolio use is most powerful when it spans courses or related experiences. An interesting extension of this research would be in service-based courses or programs, such as service-learning courses or programs that engage students in experiential learning. Students involved in such experiences tend to seek out other such experiences, so that tracking the learning journey from the first experience and subsequent experiences could provide compelling evidence for a robust educational experience over time. Additionally, ePortfolio could be effective in large classes such as those often required in the hard sciences or social sciences. In such a context, the ePortfolio might provide a way for smaller working groups of students and teaching assistants to learn together in a different space, thus reducing the anonymity that many students experience in such courses. Given that the large science class of the first semester is often the starting point for students who declare a science major and ultimately pursue graduate study, ePortfolio would be an excellent tool for tracking several years of learning. There are many avenues yet to be explored with this versatile pedagogy.

Limitations

The chief limitation of this study is that it was carried out in one semester. As noted elsewhere here and in the larger body of ePortfolio research, acquiring the ability to document and reflect on synthesized learning experiences requires time and practice. While the student experience did improve over the course of the semester, it is worth noting that those gains might be even greater had more time been given for students to become more proficient in their efforts. The same might be said for the co-designer students in their roles

as peer assistants. With more time and practice, and the confidence of a completed project, their efforts might have been more impactful to their classmates.

Conclusion

The present study makes unique contributions to our understanding of the benefits of ePortfolio for learning. The context of a single course and a short project timeline provides a very focused perspective through which to view the experience of the new ePortfolio user. The findings give a glimpse into the opinions, concerns and initial outlook of students who are creating their first ePortfolio. Despite initial anxiety, the data collected at the beginning, middle and end of semester reveal that students ultimately found value in the project and could describe the progression of their learning.

As a study of language learning, this research has a unique focus on linguistic study. In the course and program that provide the backdrop of this study, students are introduced to tools of language analysis, and the metacognitive strategies employed by students in this context are ideal for ePortfolio learning. This course, like many similar courses in programs around the country, is often the course that changes the trajectory for students with declared interest in language, but for whom language study may have been limited to classes in conversation and literature. This is an instructional context ripe for future research.

Peer connections are vital to both language learning in particular and classroom learning in general. In the present study student peer reviewers and project co-designers had a positive yet limited impact on the experience of the class as a whole. Future research should consider the best ways to select and prepare peer mentors for their role. One possibility would be to engage students from a previous class who have completed an ePortfolio and, ideally, who continue to study language. Their experience and motivation as language learners could prove highly beneficial for students in their first encounter with the material and ePortfolio. Additionally, as suggested in earlier sections of this analysis, implementing the project in collaboration with other class sections or other courses in a series would contribute to a fuller experience for all. The versatility of ePortfolio opens a broad avenue of research on not only the individual language learner but also the communal language learning experience.

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Appendix A
Beginning of Semester ePortfolio Survey

Q1 Have you ever done an ePortfolio before?

- Yes
- No

Q2 If you have done an ePortfolio, where?

- UGA class
- Personal
- Other _____

Q3 How would you describe your feelings toward the ePortfolio right now?

Q4 Would you be interested in receiving help from your peers on building your ePortfolio?

- Yes
- No
- Maybe

Q6 Do you think it is possible that this project will help you be more observant of language use?

- Definitely yes
- Probably yes
- Might or might not
- Probably not
- Definitely not

Q5 Do you anticipate any other benefits from doing ePortfolio? Please explain.

Appendix B
Mid-Semester ePortfolio Survey

Q1 How many artifacts do you have in your ePortfolio so far?

- None
- 1-3
- 4-5
- more than 5

Q2 Do all of your artifacts have reflections to accompany them?

- Yes
- No

Q3 Where are you looking for artifacts?

- This class
- Other classes
- Personal interactions
- Entertainment (TV, movies, music)
- Internet search
- Other _____

Q4 How would you describe your feelings toward the project right now, with regard to the elements that follow?

- Finding artifacts _____
- Writing reflections _____
- ePortfolio design/function _____

Appendix C
End-of-semester survey

Q1 Have you ever done an ePortfolio before?

- Yes
 No

Q2 If you have done an ePortfolio, where?

- UGA class
 Personal
 Other _____

Q3 How would you describe your feelings toward the ePortfolio right now, after completing it (or nearly completing it)?

Q4 Was it helpful to receive help from others on building your ePortfolio?

- Yes
 No
 Maybe

Q7 If you answered YES above, please provide additional information as requested below

	Helpful	Not sure	Not helpful
Portfolio “workshops” led by Honors students (small groups)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with classmates informally (in/out of class, asking questions, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seeing “in progress” presentations in class during the second workshop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seeing artifacts and reflections that the professor presented in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Do you think it is possible that this project will help you be more observant of language use in the future?

- Definitely yes
 Probably yes
 Might or might not
 Probably not
 Definitely not

Q5 Did you experience any other benefits from doing ePortfolio? Please explain.

Q8 If you could do it again, what would you do differently? Feel free to repeat what you said in your in-class presentation, and to add more if you like.