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# Everything, Everywhere, All at Once: ePortfolio Content Analysis for Program Improvement

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A university's educational technology and media programs have used student ePortfolios as a culminating activity and assessment. Because students choose which work artifacts to include in their ePortfolios, I investigated these choices from 2020-2023 student ePortfolios in the spirit of scholarship of teaching and learning. The content analysis of the students' choices of artifacts indicated that the program's ePortfolio has served as an informative summative assessment instrument over time and is not dependent on the program's delivery modes or the program track. The design and implementation of the ePortfolio assignment appear to reflect good instructional design. The findings can help optimize student learning and facilitate faculty decision-making for program improvement.

Mainstream educational portfolios were noted as early as the 1970s, and digital portfolios—ePortfolios—date back to the 1990s (Farrell, 2020). *The International Journal of ePortfolio*, launched in 2011, is one piece of evidence of ePortfolio's increasing use. ePortfolios are used for both formative and summative assessment. When COVID-19 caused much of education to pivot to online delivery, ePortfolios became even more important as a flexible way to assess students' progress and achievements authentically (Koris & Pál, 2021).

At a large Western comprehensive university, its educational technology and media leadership (ETEC) program has used student ePortfolios since 2003 as a culminating activity and assessment tool for its students. One of the key elements of the ePortfolio was the requirement that students choose artifacts from their coursework to demonstrate that they met the program's learning outcomes. This feature intrigued me to examine students' choices to discern possible patterns, particularly longitudinally, considering changing program delivery modes. Furthermore, exiting students had remarked that some course content and activities seemed to duplicate or overlap other courses within the program, so a cross-course examination was called for.

These examples let me leverage this information to inform the rest of the program faculty so that all of us could make good decisions about our program design and delivery to improve student learning. This kind of evidence-based inquiry fits under the concept of the scholarship of teaching and learning (SoTL): "an informed, questioning, reflecting, critical and inquiring teacher, whose focus is on the improvement of their teaching so as to improve their students' learning" (Tight, 2018, p. 64).

Therefore, I investigated this program's students' ePortfolios from 2020 to 2023, using the following research questions to guide the research:

1. Which courses did the students draw upon as they chose the artifacts to demonstrate that they met each learning outcome of the program?
2. What artifacts did students choose to demonstrate that they met each learning outcome of the program?
3. What trends in students' chosen artifacts existed between 2020 and 2024?
4. To what extent, if any, did the program's delivery mode impact the choice of artifacts?

## Literature Review

A portfolio is a collection of work that demonstrates a person's expertise. While common in the art world to represent one's best representative work, portfolios gained traction in mainstream education as a reaction to quantitative standardized testing (Johnson et al., 2009). As technology afforded more formats to gain and demonstrate knowledge and skills, ePortfolios became the default medium (Farrell, 2020). In their digital form, ePortfolios also have the advantage of easy, convenient centralized storage and sharing, which fosters transparent learning. ePortfolios also show that learning can occur any place any time, according to Farrell.

Buente et al. (2015) considered ePortfolios as a useful framework to document the intersection of learners' experiences, achievements, and reflections. ePortfolios also drew upon constructivist learning theory whereby the learner constructs meaning from engagement and reflection (Farrell, 2020).

As a learning tool, ePortfolios have several advantages. Not only do ePortfolios emphasize learning responsibility and accountability, but they also support learner autonomy (Marinho et al., 2021). Pitts and Lehner-Quam (2019) pointed out that ePortfolios help learners value their courses more, and see the overall meaning of their program, which motivates learning. More generally, ePortfolios help students to reflect, frame, and integrate their disciplinary learning with intention (Galeucia et al., 2023). In that process, Beckers et al. (2016) noted that creating ePortfolios helps learners gain curation skills and construct a professional self-

identify. Fu et al. (2022) also noted how ePortfolios help students interconnect learning and think like a professional, thus helping to form an assessment identity. In short, ePortfolios serve as a model for self-regulated learning and empowerment, which generates more motivation, active learning, and higher learning outcomes (Segaran & Hasim, 2021).

ePortfolios also have their disadvantages. From the students' perspective, ePortfolios take time to plan and construct (Douglas et al., 2019). They require some technical skill that may overshadow the artifacts being shared. If the program stipulates which artifacts to include, learners have less control and sense of ownership in providing evidence of their competence. On the part of educators, assessing ePortfolios can be time-consuming (Farrell, 2020). Furthermore, rubrics and pre-assessment calibration are needed to ensure consistent assessment.

These factors reveal the importance of designing the ePortfolio experience. As Segaran and Hasim (2021) noted, learners need to understand the task and how to do it, as well as why to do the task, to shape their ePortfolio. In that respect, instructors need to align assessment with program outcomes and define criteria for assessment (Sowers & Meyers, 2021). Even for ePortfolios that are used for summative evaluation, formative instructor feedback is needed to deepen knowledge and reflection (Marinho et al., 2021). Koris and Pál (2021) went further to state that ePortfolios need to be student-driven, that the artifacts should reflect complex tasks, and that both artifacts and processes should be considered. While these studies illustrate the advantages of using ePortfolios, they also reveal that a deeper dive into student curation is needed.

## Program Use of ePortfolios

Since 2012, the university's ETEC program has used ePortfolios as a summative evaluation of students' meeting the program's learning outcomes. This practice originated with the teacher librarian (TL) services credential program, which required a print-based portfolio of evidence to demonstrate meeting state preparation standards as early as 1998, before I became the current program coordinator in 1999. In 2003, when the credential led to a master's degree in librarianship, I transitioned the print portfolio format into a required ePortfolio digital format to reflect the need for teacher librarians to be competent technologically. Then, in 2012, when the credential program merged with the existing educational technology program because of the overlap in learning outcomes, the ePortfolio served as a culminating assessment for both aspects of the overall program. It should be noted that learners could earn the TL credential without the master's degree, but they still needed to submit an ePortfolio that showed they met all the program learning outcomes.

The ePortfolio assignment was introduced in the ETEC 523 Information and Digital Literacies course, where students learned how technology impacted education, and they created an initial ePortfolio to show how they met program learning outcomes in their course. Each course included a signature assignment that demonstrated the student's ability to meet the course's learning objectives, and students were encouraged to use those assignments as part of their ultimate program ePortfolios. In their culminating credential program course (ETEC 580 Field Experience) and/or their master's degree ETEC 695 Comps course, students were required to complete and submit their ePortfolio to demonstrate that they met the program's learning outcomes (PLO). Each course served as the main source of accomplishment, providing several assignments that assessed specific learning outcomes that supported the program learning outcomes (PLO), which follow. In each case, an abbreviated term (in parentheses) is provided to facilitate reading.

- PLO #1: Apply knowledge of multicultural, ethical, and legal issues pertaining to using educational technologies and communication within the global community. (Culture)
- PLO #2: Synthesize leadership principles within the practice of information and educational technology (Lead)
- PLO #3: Apply instructional design principles to design and develop educational materials (Design)
- PLO #4: Integrate theoretical perspectives to review, interpret, and apply research in learning technology (Research)
- PLO #5: Demonstrate effective written, electronic, and oral communications that reflect critical thinking and information literacy (Communicate)
- PLO #6: Locate, assess, and apply online resources to create learning experiences (Experience)
- PLO #7: Promote reading for learning, personal growth, and enjoyment (Reading; Teacher Librarians only)
- PLO #8: Organize collections according to standard library cataloging and classification principles (Cataloging: Teacher Librarians only)

The master's program consists of six core courses:

- ETEC 510 Foundations of Educational Technology and Media (Foundations)
- ETEC 523 Information and Digital Literacies (Literacies)

- ETEC 525 Digital Culture and Society (Digital Society)
- ETEC 530 Leadership in Technology and Media (Leadership)
- ETEC 551 Education and the Internet (Educational Internet)
- ETEC 570 E-Learning Design and Development (E-Learning)

All students took two elective courses, which could draw from several departments. The most popular course was ETEC 535 Accessible Electronic and Information Technologies (Accessible Tech), which is offered every other year. All TLs are required to take ETEC 540 Organization of Resources (Catalog) and ETEC 545 Reading for Leisure and Learning (Read), which are offered alternative year. The culminating program options are a comprehensive exam (ETEC695 [Comps]), a thesis, or a project. Only three students chose the thesis option during this time period, and they too had to submit an ePortfolio.

The directions for assembling the ePortfolio required that artifacts had to be arranged by PLO. A rubric was made available to provide students with the criteria for assessment: choice of evidence/artifact/artifact, self-reflection in terms of the basis for choice and its evidence of learning and professional impact, technical skills, and communication skills. Students could choose any assignments or even those workplace artifacts to showcase their competence. In all cases, student coursework had been graded within the associated course so that reviewing the ePortfolio could concentrate on the curation, reflection, and technical aspects of the ePortfolio.

Students in the master's degree program shared their draft ePortfolios in terms of process and artifact to their classmates and the instructor to receive feedback to polish their ePortfolios. At least half of the master's degree students also pursued their TL credentials, so they also received peer feedback.

## Methodology

### Research Design

To answer the research questions, I conducted a content analysis of the students' ePortfolios for the years 2020 to 2024 as provided in ETEC 695 (Comps): the culminating course that helped students to synthesize their knowledge across the program and demonstrate their knowledge through a comprehensive examination and their ePortfolios. I taught the course and assessed the students' ePortfolios for years 2020, 2022, 2023, and 2024. I copied the course content and structure for 2021's instructor, and I worked with that person to ensure an equitable ePortfolio experience in 2021.

For all five years, I assessed the students' ePortfolios at the end of the Comps course. I located each artifact, which assignment it fulfilled in which course the artifact was created, and the program learning outcome that the student identified for each artifact. To facilitate my documentation, I created a spreadsheet that listed all the assignments that the students chose, by row; the spreadsheet columns indicated which PLO was addressed, as designated by the student. I tallied each time I saw an artifact. I also read the students' reflections about how they met the PLO. All data were anonymized.

### Participants

The student population consisted of 19 students in 2020, 20 students in 2021, 18 students in 2022, 17 students in 2023, and 15 students in 2024. About half of the students each year were pursuing their TL services credential, and half of those students were also pursuing their ETEC master's degree (which consisted of just two additional courses to the courses taken for the credential). The majority of students pursuing the credential were females, and the majority of degree-only students were males. The ethnic representation was diverse; while the majority were White, at least a quarter were Latinx, a smaller proportion were Asian/Pacific Islander, and less than 5% were Black. These demographics did not vary significantly from the university's graduate demographics. The ages ranged from the 20s to the 60s, with the majority of the ETEC-only students in their 30s and the majority of credential-only students in their 40s. Most students were K-12 classroom teachers, and about half of the TL credential students were working in the school library by the end of their program.

Students in the 2020 Comps course had experienced mainly hybrid courses (i.e., about half the time face-to-face and half the time asynchronously). Mid-March, the program pivoted completely to online, replacing the face-to-face with synchronous online class sessions. Students in the 2021 course were almost completely online. Students in the 2022 course experienced some hybrid courses at the end, although the Comps course remained completely online. Students in the 2023 course had a couple of hybrid courses, but the program moved completely online starting spring 2023. Just a few students in 2024 Comps course had taken any face-to-face sources. The instructors did not change during this time period, although they occasionally switched which courses they taught.

## Findings

The content analysis of the artifacts chosen for students' ePortfolios answered the research questions. No two ePortfolios completely duplicated the choice of artifacts. Nor were the ePortfolio designs the same across students.

Table 1
*Frequency of Assignments Chosen Within Each Course by Year (*indicates required course)*

| Course | 2020 | 2021 | 2022 | 2023 | 2024 | Total |
|---|---|---|---|---|---|---|
| ETEC 510 Foundations of Educational Technology & Media* | 26 | 53 | 29 | 38 | 25 | 171 |
| ETEC 523 Information & Digital Literacies* | 31 | 48 | 35 | 46 | 59 | 219 |
| ETEC 525 Digital Culture & Society* | 22 | 22 | 21 | 19 | 27 | 111 |
| ETEC 530 Leadership in Technology & Media* | 23 | 20 | 15 | 22 | 26 | 106 |
| ETEC 551 Education and the Internet* | 32 | 32 | 17 | 29 | 24 | 134 |
| ETEC 570 eLearning Design & Development* | 17 | 20 | 21 | 24 | 21 | 103 |
| ETEC 580 Field Experience | 0 | 0 | 1 | 1 | 5 | 7 |
| ETEC 695 Seminar in Educational Technology & Media | 2 | 1 | 0 | 2 | 2 | 7 |
| ETEC 540 Organization of Resources | 10 | 15 | 12 | 16 | 14 | 67 |
| ETEC 545 Reading for Leisure & Learning | 13 | 27 | 16 | 23 | 19 | 98 |
| ETEC 535 Accessible Electronic & Information Technology | 5 | 3 | 0 | 5 | 0 | 13 |
| Program total | 181 | 211 | 149 | 225 | 222 | 1018 |

For RQ1, "Which courses did the students draw upon as they chose the artifacts to demonstrate that they met each learning outcome of the program?", Table 1 shows the frequency that artifacts from each course were chosen to meet at least one PLO, both by year and as a total. Of the six core courses (noted by an asterisk), the frequency of core course artifacts chosen ranged from 104 for the design course to 219 for the literacies course.

All students included at least one artifact from each core course. Very few students drew upon their capstone course (field experience, Comps, or thesis) or their workplace, although they were allowed to. Every assignment worth at least 10% of the course grade was chosen by at least one student. All courses had at least one collaborative assignment, and most students chose at least one such assignment in their ePortfolios.

For RQ2, "What artifacts did students choose to demonstrate that they met each learning outcome of the program?", Appendix A details the frequency of each assignment chosen to meet each PLO. Some assignments met several PLOs. The following assignments from single courses were chosen to meet the majority of PLOs (abbreviated course titles in parentheses, signature assignments noted with asterisks). When two assignments were both frequently chosen, their rank is noted.

- PLO #1 Culture: Action research* (Digital Society)
- PLO#2 Lead: Staff development or technology plan (Leadership)
- PLO #3 Resources: Online course design* (Instructional Design)
- PLO #4 Research: Literature review* (Foundations)
- PLO #5 Communicate: (1) Podcast, (2) infographic, (3) Webquest* (Literacies)
- PLO #6 Experience: (1) E-course evaluation, (2) online tools comparison (Educational Internet)
- PLO #7 Cataloging: Process evaluation (Cataloging)
- PLO #8 Read: (1) Booktalk, (2) display, (3) graphic novel* (Reading)

A few assignments were seldom chosen. Those that were chosen less than 10 times altogether are listed next by course (individual assignment noted with *). Only core courses are mentioned; elective courses are omitted as fewer students enrolled in them.

- Foundations: Technology timeline, learning/teaching theories, professional development plan*, final exam*
- Literacies: Information theories comparison*, transliteracy lesson*, pathfinder*
- Digital Society: Global project*, reflective paper*
- Leadership: Grant plan (compared to the staff development or technology)*, CUE talk*, vision/mission essay*, leader style essay*, final exam*
- Educational Internet: Final exam*
- Design: None

Within each core course, every PLO was met by some assignment within that course, except for the Leadership course, which did not have an assignment that those chosen to meet PLO #5 Communicate. PLO #1 Culture included artifacts from every course. Artifacts for PLO #2 Lead drew almost completely from the Leadership course. PLO #3 Resources also included artifacts from every course, although mainly from the Educational Internet course. PLO #4 Research drew largely from the introductory courses (Foundations and Literacies), although theories were also addressed in more advanced courses (Leadership and Instructional Design). PLO #5 Communication/Information Literacy

drew mainly from the Literacies course. Likewise, PLO #6 Learning Experiences artifacts drew mainly from the two lab-type courses: Literacies and Instructional Design. Interestingly, the TL-only PLOs #7 Cataloging and #8 Read drew from their two focused courses: Cataloging and Reading.

Several other findings emerged from the data. For instance, the number of assignments varied by course. In general, introductory courses had more, smaller assignments, and more advanced courses had fewer, more complex assignments. To show mastery, the more substantial assignments (signified by boldface in Appendix A) such as literature reviews, action research, substantive plans, WebQuests, and online course development were chosen by the majority of students. It should also be noted that a few types of assignments—literature reviews, book presentations, and tool presentations—were used in two or three courses, so it was not surprising that they were often chosen. The ethnographic study was a feature of an introductory course and field experience, so it was not surprising that it was seldom chosen; nevertheless, it was linked to five PLOs.

For RQ3, "What trends in students' chosen artifacts existed between 2020 and 2024?", Appendix B shows the frequency and trend of chosen assignments per year. The number of assignments chosen from each course fluctuated over the time period, but no distinguishing pattern emerged. Nor did the comparative frequency between artifacts change significantly from year to year. The Literacies and Educational Internet courses generally had more assignments chosen, but they also had more varied activities as well than the more theoretical courses. Most of the courses did not change assignments during this time period, which was consistent with the students' choices of artifacts. ETEC 510 and 570 assignments changed the most, which was reflected in the artifacts chosen each year; the same instructor taught these courses consistently.

For RQ4, "To what extent, if any, did the program's delivery mode impact the choice of artifacts?", Table 1 and Appendix B show the trends of artifacts chosen each year. There appears to be no impact of delivery on the assignments chosen.

## Discussion

Findings about RQ1, which courses students drew upon for their artifacts, revealed that every core course was represented by every student. Findings about RQ2, which artifacts were chosen, revealed that students tended to select signature assignments and individual projects, but they usually included at least one group assignment. Every assignment worth at least ten percent of a course group was chosen by at least one student within the study's time period, and no two individuals chose the same set of artifacts. The range of artifacts chosen to meet each PLOs differed per PLO; some PLOs were met by largely assignments in one course (e.g., Resources) while other PLOs were met by assignments in every course (e.g., Culture). Finding about RQ3, trends in students' chosen artifacts between 2020 and 2024, revealed a stable set of artifacts. Likewise, findings about RQ4, possible program delivery mode, revealed that the presence of the pandemic and the switch to a completely online program did not impact the choice of artifacts. The following paragraphs delve into the discussion of each research question.

### RQ1: Course Representation

The fact that each course provided several opportunities to demonstrate competence enabled students to tailor their ePortfolios to their strengths while meeting the overall PLOs (Meth et al., 2020). While the program faculty identified one core course for each PLO, the students drew from across courses, except to some degree the leadership course for PLO #3 Lead. PLO #1 Culture had assignments drawn from every core course, probably because the college has a strong diversity/equity/inclusion emphasis that the program' faculty wove across the curriculum. The programs also try to balance theory and practice/skills, so it was no surprise that artifacts for theory, resources and learning experiences were widespread as well.

In terms of SoTL, this finding reinforces the concept of providing learning activities that build a knowledge and skill base for substantive projects, and that these introductory activities can cross course lines to program-level outcomes (Stagg-Taylor, 2004).

### RQ2: Student Selection of Artifacts

These findings confirm the importance of student-driven assessment (Farrell, 2020; Koris & Pál, 2021), student autonomy (Marinho et al., 2021), and the development of professional identity as part of the learning process (Beckers et al., 2016; Sowers & Meyers, 2021); each ePortfolio reflected a unique combination of artifacts and reflects. Nevertheless, for over 90% of the ePortfolios, alignment of the artifact and PLO was clearly appropriate, which indicates that students were able to see the connection between their coursework and the PLO (Meth et al., 2020). In effect, their choices reflect a constructivist approach to meaning making, which optimizes their internalizing of learning (Kuhn et al., 2009). A few times, their choices were unusual, such as the Learning Theory for PLO #1 Culture, but the accompanying reflection usually made a satisfactory case for its appropriateness. All students drew from all core courses, which showed a widespread basis for satisfying the program's goals and signaled broad preparation. Fieldwork and Comps assignments

were rarely chosen, probably because the TLs had to create a web page about their field experience, so that set of artifacts was already represented. Some students may have felt that Comps assignments would constitute "double dipping" for the ePortfolio.

Nevertheless, the frequency of assignments chosen from any individual course varied. These differences inform faculty who teach each course regularly. For instance, to show mastery, students tended to choose more complex assignments; in their reflections, they tended to state that the assignment was hard, they learned a lot in doing it and were proud of their resultant artifact. Typically, these larger assignments also gave students the opportunity to choose the topic that they wanted to address, and the instructors encouraged students to choose something that would be personally or professionally meaningful to them. Because one of the advantages of ePortfolios is to capture professional growth (Fu et al., 2022), directions for the ePortfolio might require an introductory artifact and a later masterful artifact with a reflection to explain professional growth for each PLO.

A deeper dive into book presentations revealed the relative impact of updating course materials over time. For instance, two newer books replaced older titles in the Culture course, with a corresponding higher frequency of those new titles being mentioned. One of them, *Algorithms of Oppression* (Noble, 2018), was especially impactful for students because of artificial intelligence implications and the need for social justice. In short, the findings can serve as a catalyst for continual program efforts for currency and improvement (Angel & Robinson, 2017; Beckers et al., 2016), which informs SoLT.

In terms of an assessment instrument as a pivot point of SoLT, the ePortfolio offers an insight into the assignments that the students consider worthy of showcasing; every assignment in each core course was chosen by at least one person. The less chosen artifacts also provide opportunities for the program faculty to consider the role of those assignments in advancing students' learning. For instance, the information theories assignment in the Literacy course serves as a preparatory basis as information theory is one required aspect of that course's ethnographic study. Furthermore, for TL students, one of their required activities in their field experience is to conduct an ethnographic study.

### RQs 3 and 4: Trends Over Time and Across Delivery Modes

No significant difference was found in terms of artifacts chosen over time or in reaction to delivery modes. This finding was also observed by the program faculty, which helped them to decide to transition to a completely online program. The findings were not surprising as most assignments did not depend on a face-to-face in-course setting. Even those assignments that were site-based did not require face-to-face data gathering. In that respect, the assignments were delivery-mode neutral, which made them more robust in terms of learning environmental context.

## Conclusions

The culminating ePortfolio assignment has served as an appropriate summative assessment instrument for the ETEC and TL programs as it provides a means for students to synthesize their learning experiences and deliberately align them to the program learning outcomes. The design and implementation of the ePortfolio assignment appears to have captured each individual's priorities through those choices and reflections (Segaran & Hasim, 2021). Furthermore, the ePortfolios confirmed that students not only met the PLOs but that they applied critical analysis to select appropriate artifacts that showcased their competencies.

This study was a fruitful investigation, and it confirmed the usefulness and quality of ePortfolios for assessment and engaged learning for the program under investigation. The study was limited to one program, one assessment type, two instructors, and four cohorts for a total of 74 graduate students. Nevertheless, this exploratory research provides a proof-of-concept approach to ePortfolio assessment and use, not only to optimize student learning but also to facilitate continuous program improvement. Furthermore, the scope and methodology of ePortfolio use can be used in several disciplines and, to some extent, different educational levels. In many other programs or institutions, students have little say in which artifacts to include (Walland & Shaw, 2022), but I found that student-driven assessment that gives student agency in choosing what artifacts to represent their professional competence and identity offers a more authentic and personalized assessment.

In reaction to these findings, and in the context of SoTL, several recommendations may be considered. For instance, faculty might explicitly explain how in-class activities and individual assignments lay the groundwork for substantial, often signature, assignments in their course and more advanced courses, thus transparently demonstrating a systematic programmatic design where faculty link learning activities across courses to prepare student for signature assignments (Meth et al., 2020). Faculty might also check for possible overlapping assignments, such as tool presentation, to make sure that distinguishing features are emphasized and that different types of tools are being presented.

As another recommendation that arises from the findings and informs SoTL, faculty should provide students with several opportunities to learn, practice, and master PLOs, which can also lead to more professional growth (Galeucia et al., 2023). This practice can be

conveyed by having students include artifacts from early on to the program's end and provide reflections that analyze their professional journey including next steps in their careers. Indeed, although I reminded students at the end of each course to store and keep track of professionally meaningful assignments, it might be a good idea to take time during class time to have students revise their ePortfolios as they go along, and have peers give feedback in the process. Particularly since the program addresses instructional design, instructors might frame this activity as an iterative instructional design process (Matthews-DeNatale et al., 2017).

This study also lends itself to further research. Portfolio reflections could be analyzed and compared to the artifact more thoroughly. Students could be interviewed about their process as part of the data analysis. As mentioned above, ePortfolios could be used as formative assessment and then assessed for their impact, including the usefulness of feedback, on the quality of culminating ePortfolios. Portfolios could be assessed by potential employers (Mitchell et al., 2021). Portfolio effectiveness could be assessed and compared for different disciplines at different educational levels. Different levels of technology self-efficacy and competence could be studied in terms of ePortfolio development and its validity in assessing student performance; in cases where designing ePortfolios is a cognitive overload, to what extent would boilerplate templates facilitate the process and result in more equitable assessment (Gladhart & Kaltenbach, 2006)?

In sum, instructors can learn just as much from using ePortfolios as their students, and these efforts can lead to improved learning and curriculum.

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Appendix A
Frequency of Assignments Chosen for Each Program Learning Outcome

| Course Number, Title Assignment | Total | PLO 1: Culture | PLO 2: Lead | PLO 3: Resources | PLO 4: Resea-rch | PLO 5: Com-municate | PLO 6: Experi-ence | PLO 7: Read | PLO 8: Catalog |
|---|---|---|---|---|---|---|---|---|---|
| 510 Foundation | | | | | | | | | |
| 510 Tech timeline | 9 | 2 | 2 | 1 | 4 | | | | |
| 510 Article critique | 22 | 2 | | | 20 | | | | |
| 510 Diffusion interview | 19 | | 2 | | 15 | 1 | | 1 | |
| 510 Case study | 19 | 14 | 2 | | 3 | | | | |
| 510 Learning/teaching theories | 7 | 2 | | 2 | 1 | 1 | 1 | | |
| 510 Prof. devt. | 5 | | 2 | | 2 | | 1 | | |
| 510 Final exam | 1 | | | | | 1 | | | |
| 510,695 **Lit Review** | 94 | 18 | 2 | 4 | 65 | 3 | 1 | 1 | |
| 523 Literacies | | | | | | | | | |
| 523 AT Spreadsheet | 15 | 2 | | | 6 | 5 | 2 | | |
| 523 Podcast | 61 | 2 | | 1 | | 57 | 1 | | |
| 523 Infographic | 43 | 3 | | 2 | 2 | 33 | 3 | | |
| 523 Info literacy DB | 11 | | | 1 | | 4 | 6 | | |
| 523 **Webquest** | 40 | 3 | | 5 | 1 | 26 | 5 | | |
| 523 Info. theories | 6 | 1 | | | 3 | 1 | 1 | | |
| 523 Info. formats | 12 | | | | 6 | 3 | 3 | | |
| 523 Translit. lesson | 9 | | 1 | | 7 | | 1 | | |
| 523 Pathfinder | 2 | | | 1 | | | 1 | | |
| 523 Screencast | 17 | | | 3 | 2 | 6 | 6 | | |
| 523, 580 Ethnography | 8 | 2 | | | 2 | 2 | | 1 | 1 |
| 525 Digital Society | | | | | | | | | |
| **525 Act. research** | 61 | 50 | 1 | | 7 | | 3 | | |
| **525 Global project** | 2 | 2 | | | | | | | |
| 525 Reflective paper | 5 | 3 | | 2 | | | | | |
| 525 Discussion | 38 | 13 | 23 | 1 | 1 | | | | |
| 525, 530, 570 Present Book | 67 | 32 | 19 | 8 | 4 | 1 | 3 | | |
| 523, 551 Present Tool | 46 | 2 | 6 | 12 | | 10 | 16 | | |
| 530 Leadership | | | | | | | | | |
| 530 Vision/mission | 5 | | 5 | | | | | | |
| 530 Leader style | 2 | | 2 | | | | | | |
| 530 Staff devt. plan | 33 | | 33 | | | | | | |
| 530 Tech plan | 31 | 3 | 24 | 2 | 1 | | 1 | | |
| 530 Grant plan | 6 | | 6 | | | | | | |
| 530 Interview | 10 | | 9 | 1 | | | | | |
| 530 CUE talk | 7 | | 7 | | | | | | |
| 530 **Final exam** | 2 | | 2 | | | | | | |
| 551 Educational Internet | | | | | | | | | |
| 551 Compare online tools | 37 | | | 8 | 1 | 2 | 26 | | |
| 551 Periodic table | 21 | | 2 | 13 | | | 6 | | |
| 551 eBook | 12 | | | 2 | | 2 | 8 | | |
| 551 eCourse eval. | 47 | 1 | 1 | 11 | | | 34 | | |
| **551 Website** | 24 | 2 | 1 | 9 | | 1 | 11 | | |
| 551 Final exam | 1 | | | | | | 1 | | |
| 570 Instruct. Design | | | | | | | | | |
| 570 **Online course** | 75 | | 1 | 54 | 1 | | 19 | | |
| 570 Ted talk | 28 | 1 | | 12 | 3 | 3 | 9 | | |
| 695 Comps Review | 7 | 1 | 1 | 1 | | 1 | 3 | | |
| 535 Accessible Tech. | | | | | | | | | |
| 535 Case study | 4 | 2 | | 2 | | | | | |
| 535 **Action plan** | 9 | 2 | | 4 | 1 | | 2 | | |
| 540 Cataloging | | | | | | | | | |
| 540 Process | 25 | | | | | | | | 25 |
| 540 **Catalog** | 13 | | | | | | | | 13 |
| 540 ILMS | 6 | | | | | | | | 6 |
| 540 Lesson | 16 | | | 3 | | | 3 | 1 | 9 |
| 545 Reading | | | | | | | | | |
| 545 **Graphic novel** | 20 | | | | | | | 20 | |
| 545 Public library | 1 | | | | | | | 1 | |
| 545 Storyhour | 1 | | | | | | | 1 | |
| 545 Literature circle | 2 | | | | | | | 2 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 545 Booktalk | 22 | | | 1 | 1 | 20 | |
| 545 Display | 21 | | | | 1 | 19 | 1 |
| 545 Collection devt. | 15 | 1 | 1 | 1 | | 4 | 8 |
| 545 Book review | 11 | | | | | 7 | 4 |
| 545 **Reading promo.** | 5 | | 1 | | | 4 | |
| 580 Field Exp. Lesson | 5 | 1 | 1 | | | 2 | 1 |

*Note*. Significant assignments in boldface.

Appendix B
Frequency of Assignments Chosen for Each Year

| Course number/Short title<br>Assignment and frequency per year | 2020 | 2021 | 2022 | 2023 | 2024 | Total |
|---|---|---|---|---|---|---|
| 510 Foundations | | | | | | |
| 510 Tech timeline | 1 | 2 | 4 | 1 | 1 | 9 |
| 510 Article critique | 7 | 4 | 1 | 4 | 6 | 22 |
| 510 Diffusion interview | 2 | 7 | 4 | 3 | 2 | 18 |
| 510 Case study | 2 | 7 | 2 | 6 | 2 | 19 |
| 510 Learning/teaching theories | 1 | 0 | 1 | 0 | 4 | 6 |
| 510 Professional development | 0 | 1 | 1 | 1 | 1 | 4 |
| 510 Final exam | 0 | 0 | 0 | 1 | 0 | 1 |
| 510,695 Comps **Lit Review** | 13 | 30 | 17 | 23 | 11 | 94 |
| 523 Information & Digital Literacies | | | | | | |
| 523 AT spreadsheet | 1 | 2 | 2 | 6 | 4 | 15 |
| 523 Podcast | 12 | 9 | 11 | 15 | 14 | 61 |
| 523 Infographic | 4 | 10 | 9 | 7 | 13 | 43 |
| 523 Info literacy database | 0 | 0 | 1 | 1 | 8 | 10 |
| 523 **Webquest** | 8 | 9 | 8 | 7 | 8 | 40 |
| 523 Information theories | 0 | 2 | 0 | 2 | 2 | 6 |
| 523 Information formats | 0 | 3 | 0 | 3 | 6 | 12 |
| 523 Transliteracy lesson | 0 | 0 | 0 | 3 | 6 | 9 |
| 523 Subject pathfinder | 0 | 2 | 0 | 0 | 0 | 2 |
| 523 Screencast | 5 | 8 | 2 | 1 | 2 | 18 |
| 523, 580 Field experience Ethnographic Study | 3 | 2 | 2 | 0 | 1 | 8 |
| 525 Digital Culture | | | | | | |
| **525 Action Research** | 10 | 12 | 12 | 13 | 13 | 60 |
| **525 Global Artifact** | 1 | 0 | 1 | 0 | 0 | 2 |
| 525 Reflective Paper | 0 | 2 | 2 | 0 | 1 | 5 |
| 525 Discussion Board | 11 | 8 | 6 | 6 | 7 | 38 |
| 525, 530 Leader, 570 Experience Present Book | 14 | 19 | 7 | 11 | 16 | 67 |
| 523, 551 Educational Internet Present Tool | 14 | 8 | 11 | 6 | 6 | 45 |
| 530 Leadership | | | | | | |
| 530 Vision/mission | 1 | 1 | 0 | 1 | 2 | 5 |
| 530 Leader style | 1 | 0 | 1 | 0 | 0 | 2 |
| 530 Staff devt. plan | 9 | 3 | 7 | 11 | 3 | 33 |
| 530 Tech plan | 6 | 10 | 5 | 4 | 6 | 31 |
| 530 Grant plan | 2 | 1 | 1 | 1 | 1 | 6 |
| 530 Leader interview | 1 | 4 | 1 | 1 | 3 | 10 |
| 530 CUE presentation | 2 | 1 | 0 | 3 | 1 | 7 |
| 530 **Final exam** | 1 | 0 | 0 | 1 | 0 | 2 |
| 551 Educational Internet | | | | | | |
| 551 Compare online tools | 7 | 6 | 5 | 6 | 5 | 29 |
| 551 Periodic table | 0 | 4 | 2 | 9 | 6 | 21 |
| 551 eBook | 5 | 6 | 1 | 0 | 0 | 12 |
| 551 Online course eval. | 7 | 13 | 7 | 10 | 11 | 48 |
| **551 Website** | 13 | 6 | 2 | 2 | 2 | 25 |
| 551 Final exam | 0 | 0 | 0 | 1 | 0 | 1 |
| 570 Instructional Design | | | | | | |
| 570 **Online course** | 17 | 14 | 14 | 17 | 13 | 75 |
| 570 Ted talk | 0 | 6 | 7 | 7 | 8 | 28 |
| 695 Comprehensive Exam Course Review | 2 | 1 | 0 | 2 | 2 | 5 |
| 535 Accessible Technology | | | | | | |
| 535 Case study | 2 | 0 | 0 | 2 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 535 **Action plan** | 3 | 3 | 0 | 3 | 0 | 9 |
| 540 Cataloging | | | | | | |
| 540 Process | 4 | 7 | 4 | 6 | 4 | 25 |
| 540 **Catalog** | 4 | 2 | 1 | 3 | 3 | 13 |
| 540 ILMS | 2 | 2 | 1 | 0 | 1 | 6 |
| 540 Lesson | 0 | 4 | 4 | 3 | 5 | 16 |
| 545 Reading | | | | | | |
| 545 **Graphic Novel** | 2 | 7 | 2 | 4 | 5 | 20 |
| 545 Public library | 0 | 0 | 0 | 0 | 1 | 1 |
| 545 Story hour | 0 | 1 | 0 | 0 | 0 | 1 |
| 545 Literature circle | 0 | 0 | 0 | 2 | 0 | 2 |
| 545 Booktalk | 4 | 4 | 3 | 6 | 5 | 22 |
| 545 Display | 5 | 4 | 5 | 4 | 2 | 20 |
| 545 Collection development | 1 | 6 | 2 | 4 | 2 | 15 |
| 545 Book review | 3 | 4 | 3 | 1 | 0 | 11 |
| 545 **Reading promotion plan** | 0 | 2 | 0 | 1 | 3 | 6 |
| 580 Field Experience Lesson | 0 | 0 | 1 | 1 | 3 | 5 |

*Note*. Significant assignments in boldface. Comps students chose a wider variety of evidence to meet the leadership PLO, largely because some students focused on collaboration rather than leadership.

* NOT USED: Foundations course technology timeline (4), 510 diffusion interview (4), 523 assistive technology spreadsheet (4), 523 infographic (5), 525 action research (4),530 tech plan (4), 551 compare online tools (4), 570 online course (4), 523 WebQuest (5), 551 website (5), 570 TED talk (5).