ePortfolios in Political Science: The Interplay Between Independent Learning Space and Collective Knowledge Building

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Learning spaces are constantly being redesigned to provide students with engaging and effective learning experiences. ePortfolios enable a strong connection between independent learning and continuous teacher scaffolding and feedback. Research shows ePortfolios can facilitate deeper integrative learning, equipping students to start their careers. While these are among the main goals of teaching political science, very little research has been done on the use of ePortfolios in this discipline. By analyzing the role of the ePortfolio in a political science course, from both the teacher's and the students' perspectives, this article aims to bridge that gap and examine whether ePortfolios contribute to the emergence of a hybrid learning space, at the intersection of online and offline, individual and collective. Data gathered through various qualitative research methods confirms to a large extent the initial expectations regarding the value of this tool in studying political science. Nevertheless, while ePortfolios have the potential to transform the educational experience, our research highlights the crucial role of the teacher and the importance of learning design in creating a stimulating learning experience with the help of technology. Based on our findings, we develop an instructional model for using ePortfolios in political science in conjunction with other assessment methods.

ePortfolios are increasingly used as learning tools due to intrinsic features that provide students with a personal learning space while also enabling teachers to monitor, scaffold, and assess knowledge and skill building. This interface role between various types and environments of learning is captured by Mohamad et al. (2015) in the definition: "E-portfolio is a collection of authentic and dynamic documentation of a learner's progress which includes learning, assessment and reflection to support formal, informal and non-formal learning anywhere and at any time" (p. 270). By blending information literacy, technology fluency, and domain knowledge (Reese & Levy, 2009), ePortfolios facilitate a multi-layered learning experience that adequately equips students for starting their careers. On an instructional level, ePortfolios provide a more personalized and authentic way of assessing students' attainment of learning outcomes, as compared to quizzes and exams (Gordon, 2017), especially on assignments designed to facilitate higher order thinking (Chittum, 2018). More importantly, unlike other assignment types that test specific knowledge, ePortfolios enable a deeper, integrative form of learning, whereby students build connections, reflect, analyze, and transfer ideas and concepts (Chittum, 2018). Thus, ePortfolios prove to be a versatile learning tool that can be used in a variety of tasks, with a focus on self-directed learning, collaborative knowledge building, or a combination of both.

There are various ways to categorize ePortfolios according to their core objectives and the task design. Three broader types emerge from the existing literature: (a) learning ePortfolios, (b) assessment ePortfolios and (c) personal development ePortfolios (Hallam & Creagh, 2010). The difference is mainly one of focus: while learning ePortfolios emphasize and support the learning process, as a meta-tool, often linking various courses within curricula, assessment ePortfolios have a mainly evaluative purpose and are usually connected to specific assignments. Personal development ePortfolios go a step further, allowing students to reflect on and document their own learning process. These can be refined further and developed into showcase ePortfolios used to present their work while accessing the labor market (Simatele, 2015).

ePortfolios have been used extensively in several study areas, such as teacher education, creative disciplines, communication, and medicine, with numerous examples in the existing literature (Meeus et al., 2006) spanning specific activities linked to a course to developmental ePortfolios whereby students manage their learning throughout an entire program. However, the use of ePortfolios in social science, and more specifically in political science, has been sparse at best. This is surprising as the aforementioned roles and benefits of this approach accurately reflect some of the core learning objectives of this discipline, such as connecting theory and practice, deep understanding of complex concepts, analytical abilities, a critical mind-set (Ishiyama et al., 2015) as well as writing and information literacy skills (Curtis & Blair, 2009). Moreover, by facilitating integrative learning, ePortfolios seem to provide a suitable approach to tackle the interdisciplinary and heterogeneous nature of political science (Warleigh-Lack & Cini, 2009). In a discipline with a rapidly moving content that is set up at multiple levels of analysis and is highly reliant on text (Gonick & Weisband, 1992; Shapiro et al., 2004), ePortfolios have the potential to provide students with a space where they can monitor, reflect on, and creatively express their perspectives on what and how they learn.

In this article, we aim to contribute to the existing body of literature by analyzing a case study of ePortfolio use in a political science course, bringing in both teachers' and students' perspectives and looking into whether the use of this technology-enhanced tool supported the achievement and measurement of learning objectives. More precisely, we aim to examine whether/in how far the affordances of technology in the form of the ePortfolio enabled the attaining of learning goals otherwise inconceivable in the context of the current course. Moreover, we look into how the ePortfolio relates to the other assignments and class activities and explore its role as a developmental tool and space for formative assessment, at the intersection of individual and collective learning. Based on the findings, we develop an instructional model for using ePortfolios in political science in conjunction with other assessment methods. Further recommendations on the role of ePortfolios in the specific context of this discipline will be elaborated, with a focus on its use as a formative assessment tool.

Conceptual Framework and Research Questions

Among the various roles the ePortfolio can play in the learning process, we have chosen the two that are the most relevant for our research in the context of political science: ePortfolio as a tool for integrative learning and as a space for independent learning. After reviewing the literature on these topics, we will turn our attention to the opportunities enabled by technology in the case of ePortfolios and make connections with the levels of technology integration according to the substitution, augmentation, modification, redefinition (SAMR) model (Puentedura, 2014). Lastly, we look at literature analyzing how ePortfolios are embedded in the overall course structure, with a focus on their use as assessment tools. This brief exploration of existing research provides a conceptual framework for the interpretation of the data collected in our case study. Moreover, it enables us to place our discipline-specific research into a broader context and to provide an instructional model for the use of ePortfolios, useful for practitioners and researchers alike.

ePortfolios as a Tool for Integrative Learning

Based on the theoretical foundations of constructivism and connectivism (Selwyn, 2017), the various aspects of learning enabled through the use of ePortfolios range from deep learning (Brandes & Boskic, 2008) and higher order thinking—analytical and critical abilities (Chittum, 2018)—to reflection (Wakimoto & Lewis, 2014) and problem-solving skills. Peet et al. (2011) used the term "integrative learning" as a narrative grounded in the idea of purposefully making connections between concepts and experiences and being able to apply them in new situations and challenges. The Association of American Colleges and Universities' (AAC&U) rubric describes integrative learning as "an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus" (AAC&U, 2009, para. 2).

ePortfolios can assist students in making meaning out of the various sources of knowledge to which they are exposed (Pelliccione & Dixon, 2008), thus creating the framework for a holistic learning experience. This idea accurately reflects the challenges of teaching and learning political science, especially in terms of connecting theory and practice as well as combining different views and transferring knowledge in an interdisciplinary context.

By facilitating these various angles of the learning process, the ePortfolio is valuable both as process (how one learns) and as outcome (what one learns), as pointed out by Hallam and Creagh (2010), O'Keeffe and Donnelly (2013) and Yang et al. (2016). However, when designing learning activities, the teacher needs to navigate the inherent tension among those two aspects (Chau & Cheng, 2010). Besides being used as an assessment tool both in a formative and summative manner, the specific strength of the ePortfolios is their role as a meta-tool for learning. They can provide support and structure to the learning process, allowing the teacher to scaffold knowledge construction (Brandes & Boskic, 2008). At the same time, an ePortfolio activity can capture and document students' learning beyond the final product, be it an essay, an exam, or a presentation. Thus, teachers can gain deeper insights into learners as persons (Hallam & Creagh, 2010) and can connect to them at a different level, which adds authenticity and enriches the overall learning experience.

ePortfolios as Spaces for Independent Learning

Due to its individual character, the ePortfolio often acts as a space for independent learning. Irrespective of the immediate purpose, the existence of such an environment, where students have ownership of their own learning, is intrinsically valuable for the self-development process as it covers aspects often disregarded in more traditional forms of education. Challenging the idea that learning is confined to the classroom, ePortfolios provide a space for self-regulated learning (Chau & Cheng, 2010), whereby students are in charge of when, where, and how they learn. This does not come without its challenges, as it requires self-discipline and a sustained sense of

purpose. But once these attributes are mastered, a tool like the ePortfolio can support students in documenting and managing their learning process (Beckers et al., 2016; Meeus et al., 2006).

Depending on the task design, this space can sometimes be structured by the teacher who provides reflection prompts and guidance. Often, ePortfolio content is brought back into the classroom to feed into group activities. But the ultimate responsibility lies with the learners, who can personalize the style and content of the ePortfolio to reflect their own perspective (Chau & Cheng, 2010). This can be a strong motivational factor, as it provides an intrinsic impulse for learning rather than a solely reactive approach to external prompts (Meeus et al., 2006).

Technology-Enabled Features of ePortfolios

The pedagogical uses of the ePortfolio cannot be addressed without reference to its technology-enabled features. Multimodality (Kress, 2001) has long been considered an effective approach to learning. By facilitating the use of various media, ePortfolio platforms encourage creativity, allowing students to express themselves in a more personalized manner (O'Keeffe & Donnelly, 2013). Making connections between old and new knowledge, theory and practice, or different types of sources are trademarks of integrative learning. Brandes and Boskic (2008) looked into how electronic linking (i.e., hypertextuality) within ePortfolios and cognitive linking might be connected. ePortfolios provide students with the opportunity to train in writing using different styles, and more importantly in this context, they allow them to construct work in an authentic digital environment (McWhorter et al., 2013), thus equipping them with a very useful skill for their future careers. The use of digital technologies brings about new attributes of human information processing, such as nonlinearity, multimodality, visibility, persistence, editability, and association (Schwan & Cress, 2017). The learning space thus becomes a fluid and hybrid concept, a continuum, dynamic, and digitally enhanced (Middleton, 2018).

Technology enables a smooth transition between individual and collective learning spaces, by means of teacher guidance, class discussion, and peer review (Yang et al., 2016). Cognitive and social systems stimulate each other and co-evolve, as learning at individual levels and group levels follow each other in logical progression (Schwan & Cress, 2017). One aspect not to be neglected is the need for both teachers and learners to be familiar with the platform in order to use its features effectively for learning (Ishiyama et al., 2015).

In the context of political science, technology-enabled tools can provide students with a more informal and dynamic environment in contrast to the purely academic one and with efficient tools to monitor current events in a discipline whose focus is a constantly moving target. Even though there is no literature on the explicit use of ePortfolios in political science, there are several accounts on the use of blogs and other social media platforms often with the same aim as ePortfolios (Blair, 2013; Lawrence & Dion, 2010). The advantage of ePortfolios compared to these tools is that they combine knowledge production with skills development in an integrated manner, thus answering to the students' demands for a more applied approach to learning political science.

Analyzed from the perspective of technology integration in teaching and learning, the use of ePortfolios can arguably be situated at one of the "transformation" levels of integration, as conceptualized in the SAMR model (Puentedura, 2014). Among the four levels—substitution, augmentation, modification, and redefinition—the technological characteristics of the ePortfolio place it at either the modification or redefinition level, depending on the task design. This implies the ability of ePortfolios to transform the teaching and learning process, enabling activities and outcomes that would otherwise not be possible.

Integration of the ePortfolio in the Course

While the intrinsic values of the ePortfolio as a learning tool, as outlined previously, are noteworthy, it is equally important to shed light on its various instructional uses and the way it is introduced and embedded in syllabi and curricula (Watson et al., 2016). Designing learning activities using ePortfolios needs to reflect the built-in connections with the rest of the course—in terms of knowledge building, assessment and workload—as well as a careful alignment with the learning objectives (Kahn, 2014).

ePortfolios can be used ideally as formative assessment tools (Housego & Parker, 2009), in line with the assessment for learning paradigm (Black et al., 2004). Their authentic nature, as compared to essays or exams, serves two main purposes: evaluative and developmental, as mentioned by Chau and Cheng (2010), remarking on the inherent tension among the two, to which we will return in the discussion part of this article. The product versus process dilemma referred to earlier is now translated to the task design level, where the teacher needs to strike a balance between a rigorous assignment with a prescribed outcome and a clear assessment rubric (McWhorter et al., 2013) and providing students the freedom and flexibility to express themselves. They also need to constantly adjust the amount of guidance they provide without impinging on students' ownership (Chau & Cheng, 2010).

Feedback is the key to formative assessment, and ePortfolios facilitate various forms of feedback from both teacher and peers, which constitutes cognitive and

social support (Yang et al., 2016). Because the ePortfolio documents the learning process, the teacher is able to provide ipsative feedback at various stages of the assignment, commenting directly on students' progress (O'Keeffe & Donnelly, 2013), an approach that has been shown to increase motivation.

Research Questions

Based on the review of current literature, this article has two main research objectives: (a) from the students' perspective, we inquire into whether or not the use of the ePortfolio in studying political science can enable a hybrid learning space in between individual and collective learning, allowing students to build and communicate knowledge; (b) from the teacher's perspective, we aim to establish whether or not the use of ePortfolios can make previously inconceivable learning activities and learning designs possible. The two research questions are:

1. In what ways do ePortfolios enable a hybrid learning space powered by the interaction between individual and collective learning?
2. To what extent does the use of ePortfolios as a course assignment lead to the modification or redefinition of learning activities?

Methodology

Research Context

We conducted the research in a master level course, Political Economy of Development in Asia. This is an elective course and part of the second-year curriculum of the Master of Public Policy at the Hertie School of Governance in Berlin. The course took place in the spring semester of the academic year 2018-2019, had a duration of 12 weeks, and was attended by 11 students with ages between 25 and 35. The main learning objectives were: (a) to demonstrate critical understanding of the most important issues in development studies; (b) to gain a deeper political economy understanding of why and how some countries have developed; (c) to learn how to construct coherent, independent and critical research reports and assessment of development policies; and (d) to become an expert in an Asian country of your choice and gain specialist knowledge of development issues faced by the Asian country.

Throughout the course, the students were assessed using a variety of formats, including more traditional assignments such as a literature review and research paper as well as active learning in the form of debates. The ePortfolio represented one of the four course assignments and accounted for 30% of the final grade. The literature review was worth 10%, the final paper

40%, the two debates 10%, and class participation 10%. Thus, in terms of typology, the ePortfolio fits between the learning and the assessment categories, as it was aimed both at evaluating a specific task and at supporting learning throughout the course. The tension between these two aspects will be explored in the discussion section.

Students had to complete the ePortfolio task in the first six weeks of the course through weekly assignments on the respective topics of the sessions: poverty, conflict, health, inequality, and demographic transition. They were provided with specific questions to guide their ePortfolio contributions; for most of the topics they had several questions to choose from. In the fifth week, besides their own weekly contribution, students had to do a peer review task for which they received suggestions for structure, tone, and content. The use of ePortfolio was new for the majority of the students and for the teacher, and no training was provided. The teacher received one-on-one coaching on the use of the tool from the institution's teaching and learning center. As the institutional LMS had no integrated ePortfolio platform, the teacher chose to use WordPress. The choice and use of platform will be further discussed in this article.

The ePortfolio was designed to serve as a backbone of the course, providing students with a personal learning space where they conducted independent research, connected it to the concepts learned in class, and prepared for other assignments.

Research Methods

This article uses various qualitative methods, including ethnographic research in order to obtain data from both the teacher and the students.

Teacher Journal and Interview

A teacher journal in three parts documents the various stages starting with (a) course design, through (b) teaching the course and (c) assessing the students, with a specific focus on the ePortfolio task. Teaching journals or diaries are first-person observations of experiences that are recorded over a period of time (Krishnan & Lee, 2002). They are an important self-reflective tool for the teacher (Wiegerová & Lampertová, 2012) and can play a role in professional development, especially when teaching a new course or using a method for the first time, like in our case study. Besides the intrinsic value for the teacher, teaching journals are also a useful qualitative research tool. We used a semi-structured journal model: the teacher was asked to reflect in the three time-dependent sections (while designing the course, while the task was ongoing, and after grading students' performances) and some guiding questions for

each section were provided (see Appendix A). Within this general framework, she was encouraged to record her reflections spontaneously, without a specific sequence or length of entries. The journal entries were analyzed and coded and the main topics were taken up in a structured manner in the final interview, with a time interval of a few weeks in-between.

The interview took place after the completion of the course including final grading and focused on the teacher's perception of the role the ePortfolio assignment played within the entire course and whether or not it had any impact on students' performances in class and final learning outputs. This mix of methods allowed us to capture both the stream of consciousness of the journal entries and the more consolidated end-of-the-course reflection, facilitating a deeper understanding of the ePortfolio use.

Student Surveys

Students were surveyed twice, once at the mid-term point after submitting the ePortfolio and again at the end of the course. While the first short questionnaire aimed to capture their immediate reactions after task completion, the final survey (see Appendix B) allowed them to reflect on if and in what way the ePortfolio contributed to their overall learning in this course and possibly beyond within the context of the program. They were also asked about their perceived benefits and drawbacks of using ePortfolios as a learning and assessment method as well as the challenges they encountered in the process.

Direct Observation

To complement these methods, we conducted direct observation that was documented by means of an observation diary. Triangulated with the data from the aforementioned sources, the field notes enabled a better understanding of ePortfolio use. The observation model chosen was the complete observer (Kawulich, 2012), as we opted not to actively intervene in the class activities and thus minimize potential bias. Observation took place during three sessions, two sessions with the debate format as the main activity and the last session of the course with a more reflective focus. The observation guide used an event sampling technique (Kawulich, 2012) with notes taken every time the students or the teacher referred to the ePortfolio in class; in these instances, we recorded the interactions and behaviors of participants.

ePortfolio and Document Analysis

For the purpose of this case study, class observation only provides information on the non-technological aspect of the ePortfolio use, namely on how it is used in connection with class activities and other assignments. To complement class observation, we accessed a random selection of student ePortfolios. We did not analyze the ePortfolios from the point-of-view of content but rather to complement the data collected through the other methods by examining samples of the assignment output. Accessing the ePortfolios revealed information about how students interacted with the online platform and with the course content, their colleagues, and the teacher, given the technological affordances. The observation in two different contexts—in-class and on the online platform—provided interesting insights into the extent to which the two learning environments are interconnected, enabling students to construct and retrieve knowledge throughout the course.

Moreover, we analyzed a series of course-related documents provided by the teacher (e.g., the syllabus, assignment handouts, grading rubrics) in order to gain more information on the course design and to put the ePortfolio into context.

Results

After analyzing the data collected from students and the teacher and based on the literature review, four main themes emerged. We will use them to structure the overview of our research results: (a) ePortfolios as a tool for integrative learning, (b) ePortfolios as a space for independent learning, (c) the technological affordances of ePortfolios in connection to learning, and (d) the role of the ePortfolio within the course. For each theme, we provide both the students' and the teacher's perspective.

ePortfolios as a Tool for Integrative Learning

This rather broad theme can be broken up into several sub-themes: ability to make connections, deep learning, analytical and critical thinking skills, reflection, and continuous learning. AAC&U's (2009) integrative learning rubric provides five elements that can be assessed in the context of integrative learning: (a) connections to experience, (b) connections to discipline, (c) transfer, (d) integrated communication, and (e) reflection and self-assessment. All of these topics support the idea of the ePortfolio being valuable both as process and as outcome, as it plays the role of a meta-tool for learning. For the teacher, this goes to the core of one of the learning objectives: becoming an Asian country expert and demonstrating critical understanding of the most important issues in development studies. The ePortfolio format enables her to test all the aforementioned skills in a more authentic way than a traditional essay. Moreover, it allows her to monitor and assess students' learning process:

"Learning is a process of accumulating knowledge gradually and updating ePortfolio each week before the session is such a knowledge accumulation process."

The students, for most of whom this was the first ePortfolio experience, acknowledged that this new format facilitated a more integrative approach to learning. One student said "The ePortfolio was very useful in making us think about development holistically" by providing the necessary support and scaffolding. It also offered a framework for a crucial objective of political science studies—linking theory and practice—as one student remarked, "The country assignment was useful to move away from pure theory and analyze individual countries. It really focused us to think beyond our readings." This supports the second element of the AAC&U rubric: connection to discipline. As it spanned several weeks of the course, in contrast to a one-off written assignment, the ePortfolio task allowed students, as one individual mentioned, "to think about each lesson meaningfully." By analyzing some of the ePortfolios, we observed signs of student progress throughout the process and confirmed by the teacher in her journal.

While not at the core of students' perception of the task, reflection was also mentioned as a benefit of this approach; for example, one student noted, "It's a different style of assignment and it allows us some reflection on the topics we found most interesting." By developing their ePortfolios, students also felt this method enabled them to delve deeper into the topic. One student said, "it forced me to keep track of the concepts while contextualizing them within one country," while another believed that the ePortfolio assignment was "more successful at giving us long-term memory and learning than an exam." This echoes the fifth element of the AAC&U rubric: reflection and self-assessment.

Also, a peer review feature was integrated in the assignment as part of the ongoing learning process, as the teacher believed ePortfolios are "the very foundation for the creation of a collective and peer learning space." Initially planned towards the end of the task after students became familiar with the environment, it soon became clear that the peer review exercise would be more effective at an earlier stage and possibly multiple times, as it allowed students to interact with each other's work and practice giving and receiving feedback.

ePortfolios as a Space for Independent Learning

This second theme confirms one of the well-established roles of ePortfolios, that of a space for self-directed learning. From the teacher's perspective, "the concept of ePortfolios as personal learning spaces which enable students to visualize their own learning path" was at the core of her learning design. She combined it with the idea of letting all these independent spaces flow into a "collective learning space whereby everyone including the instructor learns from each other." The ePortfolio task captured the value of having students explore by themselves the topics from the perspective of the country of their choice before discussing them in class. The teacher remarked, "a thorough understanding of the theories has to be grounded in specific countries and a lot of learning has to be done by the students in their own time through country specific study." Moreover, it is worth noting that throughout the duration of the assignment, she thoroughly monitored and, when necessary, reacted to the students' ePortfolios in order to create a smooth transition between the online and offline, personal, and collective environments.

When asked about the value of the ePortfolio for their learning in this course, seven out of 10 students ranked independent learning and personal learning space the highest, aforementioned features such as reflection, making connections, or deep learning. This points to the fact that the students appreciated having a personal, more informal space where they had the freedom to address the topics in their own manner, more creatively. Although it involved a higher workload, this aspect, often missing in the study of political science even at the postgraduate level, is perceived by students as an important vehicle for self-development in terms of both knowledge and skills.

As an integral part of the independent learning space, skills acquisition and training is also an important aspect of this course. Besides the analytical and critical thinking skills already mentioned in the first theme, writing and public speaking skills were also reflected in the ePortfolio assignment, linking back to two of the elements in the AAC&U rubric: transfer and integrated communication. Although not all students were familiar with the format, similar to blogging, they appreciated the opportunity to train, as students noted, "writing informed opinion pieces less formally" and "presenting a lot of information into a more concise manner . . . telling a narrative in a creative and engaging way." The difference in style was also noted by one of the students who acknowledged that "translating academic literature into a more general piece that mainstream audience can easily understand" is a useful skill to have for the future career.

The Technological Affordances of ePortfolios in Connection to Learning

Intrinsically linked to the previous two themes, the technological affordances of the ePortfolio are also closely connected to the course design as well as students' performance on the task. From the teacher's point of view,

the digital aspect of the ePortfolio played a crucial role in the way she structured the course as well as her choice of teaching approach, which she described as "flipping the classroom": "Through reading ePortfolios, I gain understanding of student learning process and can re-purpose in-class time for inquiry, application, and assessment that better meets the needs of students and addresses their problems." Through its inherent features, such as multimodality and hypertextuality, the digital learning environment facilitates the use of ePortfolios as integrative learning tools as well as personal learning spaces, as seen previously. Arguably, this can enable designing certain learning activities that are otherwise inconceivable, pointing towards a higher order level of technology integration according to the SAMR model.

The majority of the students felt that the multimodal nature of the ePortfolio assignment enhanced their learning by proposing a "refreshing," "less formal" approach, allowing them to "think more creatively." However, some limitations linked to the task design were pointed out; for example, one student noted, "Having to use different media, especially video and podcast, was actually more of an additional pressure and didn't really help. Some topics or some countries just don't have enough available multimedia input." Striking a balance between a rigorous assignment structure and providing students with enough freedom and flexibility to make the most of the technological affordances of their personal learning environment seems to be the key for an effective use of ePortfolios, as already acknowledged by the existing literature (Meeus et al., 2006).

As the institutional LMS (Moodle) offered no integrated ePortfolio solution, the teacher decided to use WordPress, which was recommended by a colleague for being "free and relatively easy to use." She added, "I use WordPress to create my personal professional website and I am familiar with it." While most of the students felt comfortable using the online environment, for some of them, gaining familiarity with the platform proved to be an obstacle in the task delivery and added to the already high workload; one student noted, "Spent too much time trying to figure out WordPress." The flip side of the coin is that students acknowledged the assignment enabled them to learn web design skills, which was not an objective of the course but appears to be a positive consequence of having students engage with technology in their learning. The increase in students' digital literacy was confirmed by the teacher in the final interview. Indeed, most of the ePortfolios accessed for our research showed a good understanding of developing content in a digital environment.

The Role of the ePortfolio Within the Course

The course was designed with the ePortfolio playing a central role in its overall setup. Its timing—during the first half of the course—and its function as a space for independent learning point towards a close connection with the other learning activities. Even though the ePortfolio represents just one of the course assignments, worth 30% of the final grade, "it enables students to analyze literature and evidence on the specific topic about their Asian countries . . . to be used later when they start to write the research paper," as the teacher noted in the first part of her journal. Thus, "ePortfolios form the very foundation for their performance in other tasks throughout the course." What that means in practice is that she referred to the ePortfolios often during the sessions and prompted students to reflect on how their weekly research related to the day's topics: "Sometimes, students would be called upon to tell their classmates the key findings of their ePortfolio entries. Sometimes, I will also point out some interesting findings from ePortfolios and ask them to elaborate." This corresponds to the data gathered during class observation in the second part of the course, where students were engaging in class discussion based on the expertise they had built through the ePortfolio. Moreover, as the teacher reflected later in her journal, the ePortfolio proved to be a very useful tool of collaborative knowledge building, or co-creation, and thus an effective way to keep students motivated: "Reading their ePortfolios before each session also equips me well with country-specific knowledge and I can better structure the discussion." She furthermore admitted that she "would not have been able to come up with these detailed challenges and solutions" without the input from students' independent work.

Students acknowledged the close links between the ePortfolio assignment and the other aspects of the course. They especially noticed that the research put into the ePortfolio enhanced the quality of class interaction; for instance, one student stated, "[the ePortfolio] adds considerable value to class discussion because everyone came prepared to discuss the topic." Other students also recognized the connection with the final paper, which indicates the internal alignment between the different assignments and the course objectives: "It is also excellent preparation for the research paper and the two make a good pair." This is also reflected in terms of workload, with most of the students recognizing that the comparatively high workload for the ePortfolio task helped reduce the effort necessary for the final paper: "The workload was more than will probably be spent on my essay—but on the other hand the essay uses a lot of the information collected during the ePortfolio process."

Looking at students' overall learning outputs after assessing the research paper, the teacher acknowledged a clear link between the ePortfolios and students' performance in the other assignments, especially the final paper, as well as their engagement in class. She noted that the students with a good ePortfolio were able

to achieve a higher level of analytical, critical, and reflective thinking in their research paper, as they had already completed the evidence collection stage using the ePortfolio. Moreover, they were more active in class discussions, willing to contribute their knowledge but also very interested in learning about their peers' research. Thus, the assumptions made during course design that the ePortfolio would represent an essential building block in the overall course structure seem to be confirmed by students' performance.

Discussion: Towards a Model of Using ePortfolios in Political Science

Two main themes emerging from the research results are worth bringing forward for discussion in order to answer our research questions: (a) the role of ePortfolios as hybrid (individual/collective) learning spaces in political science and (b) the level of technology integration achieved using ePortfolios. The ideas discussed will then be taken forward to the instructional design level where we develop a model for teaching political science integrating an ePortfolio approach.

The Role of ePortfolios as Hybrid Learning Spaces in Political Science

As outlined in the existing literature and confirmed by our case study results, the most valuable contribution brought by the ePortfolio is its role as a new, hybrid learning space, between individual and collective learning and, as such, as a suitable formative assessment method. The process aspect, in which the ePortfolio helps strengthen students' overall course performance, reveals itself as more relevant than the final output (i.e., ePortfolio as a product, a collection of artifacts as is the case in creative disciplines). One can conceptualize the ePortfolio in the context of political science as a "sandbox," an environment where students have the freedom to explore various types of learning experiences in a personal way. In a discipline where mostly traditional teaching methods, such as lectures and seminars, are used (Blair et al., 2007), the use of ePortfolios enables students to personalize their learning and to build knowledge in a creative manner together with their peers. The key role of the teacher is to scaffold this process, while not impinging in students' ownership, and provide the necessary guidance and formative feedback as well as facilitating peer feedback and collective knowledge building.

Because of this intrinsic developmental function of the ePortfolio, summative assessment, while possible, does not appear to be the optimal solution; as it requires rigorous grading criteria, it often limits the teacher's freedom in designing and evaluating the task as well as students' creativity. To balance the lack of a specific

grade and to keep students motivated, the links among various activities and assignments as well as their alignment with the learning goals need to be made explicit. In this context, the ePortfolio could be assessed as an integral part of a larger task, such as a research paper, like in our case study. Alternatively, the ePortfolio could be extended to be the largest assignment of the course, including smaller, concrete tasks that relate either to knowledge or skills and for which grading is a more straightforward process.

The results of our research, backed by existing literature, emphasize the crucial role of learning design in enabling the intrinsic ePortfolio features to make a difference in the learning experience by facilitating the coexistence of the individual and the collective learning spaces and blurring the lines between online and offline environments. As with many other technology-supported tools, their transformative power should not be taken for granted; their effective use is strongly dependent on the capacity of the teacher to design learning activities whereby technology supports learning and does not distract from learning.
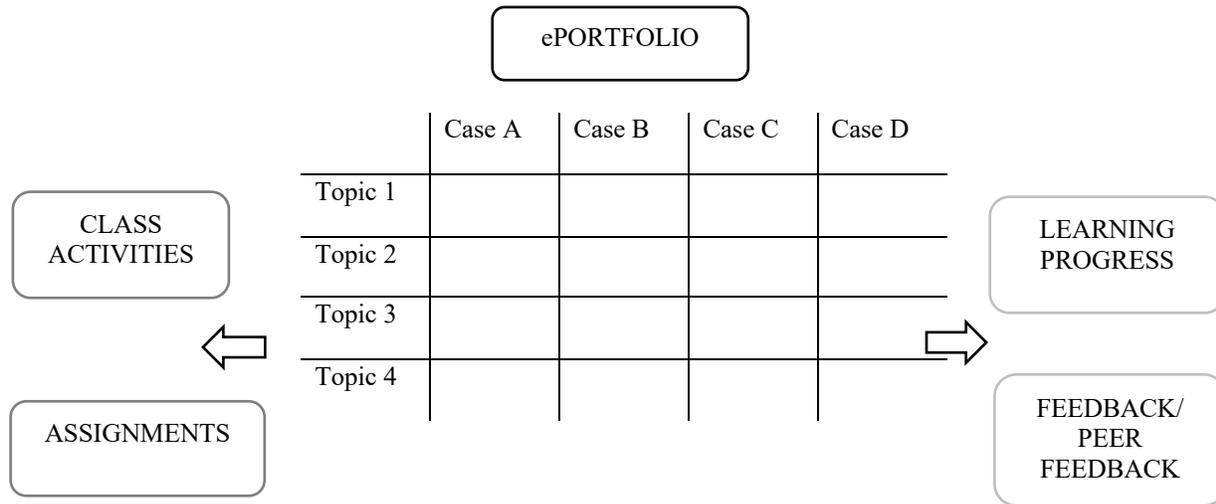
The Level of Technology Integration Achieved Using ePortfolios

Evaluating the ePortfolio as a technology-enabled teaching and learning tool, we wanted to establish if its use can be placed at the transformation levels of technology integration, as proposed by Puentedura in the SAMR model (i.e., modification and redefinition). The ePortfolio tool, as used in our case, enabled the teacher to develop a course design that could not have effectively been put into practice otherwise to serve the learning objectives. The core of her teaching approach was to create an interface between the individual learning environments (mainly online) and the collective learning space (in the classroom).

The weekly ePortfolio entries served an important purpose: they allowed students to visualize their learning process while being consistently prepared for class, and they supported the teacher in preparing and constantly recalibrating the class to best suit the learning needs and overall course goals. Moreover, the ePortfolio acted as a framework for class interaction and collaborative knowledge building; with each student being "the expert" in one country, the teacher could design and organize class activities in a more effective and inclusive way by enhancing the potential for exchange and peer learning.

When asked about using ePortfolios in the future, this was the aspect she mentioned she would like to strengthen by planning more structured types of interaction on a more regular basis. Based on the previous consideration, the teacher placed her experience with the ePortfolio at the redefinition level

Figure 1
ePortfolio Model in Political Science

	Case A	Case B	Case C	Case D
ePORTFOLIO				
Topic 1				
Topic 2				
Topic 3				
Topic 4				

CLASS ACTIVITIES

ASSIGNMENTS

LEARNING PROGRESS

FEEDBACK/ PEER FEEDBACK

on the SAMR scale, as it facilitated a smooth transition between the personal and the collective, the online and the offline learning spaces. Moreover, she mentioned this was her first experience of meaningful technology integration in teaching.

Instructional Model and Recommendations

Our research focused on one master level course with a small number of students, which makes it difficult to generalize the results. Even though the data collected from both teacher and students provided valuable insights into the role of the ePortfolio, in order to thoroughly evaluate this tool and the learning experience it facilitates one needs to conduct research at larger scale, including a variety of course designs. Moreover, a research design using control groups can provide more accurate results of the impact ePortfolios have on learning.

Nevertheless, the data collected through our case study can support us in attempting to transfer the results into an instructional model for using ePortfolios in political science courses. Our research suggests that the ePortfolio approach can bring most added value in course designs based on a comparative methodology whereby students are asked to collect evidence from a variety of cases such as: Comparative Politics courses, where each student can focus on one country, or International Relation courses, where students can choose to research a specific organization or actor.

To provide substance and structure to the ePortfolio, the entries are linked to the main themes or topics that constitute the building blocks of the course content, usually the equivalent of the sessions in the syllabus. Based on the students' independent work, the class can take different formats whereby the knowledge from the ePortfolios is retrieved, collated and compared. The combination of independent and collective knowledge can be used in various class activities like role plays and debates. Moreover, the ePortfolio can be an assignment in itself or it can be connected with other assignments such as research papers or projects (see Figure 1). It is important to remember that the main value of the ePortfolio in this context is the ability to mirror the learning process, thus providing the students with a useful reflection and self-assessment tool and the teachers with an insight into students' learning progress.

This model can provide answers to some of the challenges of teaching political science by: (a) engaging students in a coherent and sustained way in collective knowledge building; (b) facilitating integrative learning by enabling students to make connections between theory and practice and (c) providing them with a space for independent learning where they can also train their information and digital literacy skills.

Conclusion

By analyzing the use of the ePortfolio in a political science course, this article aimed to contribute with a different disciplinary perspective to the already extensive literature focusing mainly on teacher education, medical studies, and creative disciplines. Our case study, including both the teacher's and the students' perceptions, confirmed the value of the ePortfolio as a space for independent learning and at the same time as a tool supporting integrative learning, thus

answering some of the main challenges of teaching political science. Technology has the potential to not only enhance but transform the learning experience, by enabling a course design that blends independent inquiry and collective knowledge building. However, our research results indicate that learning design plays a crucial role in using this potential to the benefit of students' learning. In this respect, the teacher is in the position to shape and design learning environments that use the affordances of technology but have the quality of the learning experience at their core. As presented in our instructional model for political science, ePortfolios can be used to facilitate various inquiry and evidence-based pedagogical methods, providing on the one hand structure and diversity to the class and on the other hand a meta-tool for learning that allows students to visualize their learning progress and teachers to better adapt to the learners' needs.

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Appendix A
Teacher Journal Guidelines

Journal	Timeframe	Reflection prompts
Part 1	Course design	GENERAL ABOUT THE COURSE • A brief introduction to the idea of the course (how you got it, how you planned it) • The learning objectives of the course • How you designed the learning activities (explain briefly what the various activities are, how you envisage the sessions) • How you designed the assignments ABOUT E-PORTFOLIOS • Why you chose e-portfolios: any inspiration? For what learning objective(s)? (always think in terms of knowledge AND skills) • Any prior experience with that? • How did you design the e-portfolio assignment specifically? i.e., using specific questions for each entry, clear specifications in terms of length, workload expected, etc. • What platform are you using for the e-portfolio? Have you used that before? • What are your expectations from the use of e-portfolios? • What do you think can be the challenges in using them? • How do you plan to assess them? Do you think it will be more difficult/ time-consuming than with other types of assignments? • Do you plan to offer students feedback on them? LINKS BETWEEN EPORTFOLIOS AND REST OF THE COURSE • Are the e-portfolios linked (explicitly) to the other parts (and other assignments) of the course? • Can then contribute (implicitly) to the students' performance in other tasks throughout the course?
Part 2	While assignment is ongoing	Reflecting on the period when the assignment is ongoing • Students' initial response to it • Any further reaction, questions, concerns that you noticed • Engagement with the assignment (i.e., weekly task, presentation, etc) • Any other preliminary observations (maybe some collateral outcomes you were not expecting?)
Part 3	While/ after grading assignment	Reflection on the overall assignment • Overall student performance • Your satisfaction with it, by comparison to your initial expectations • Strengths and weaknesses of this particular format in light of your learning objectives (this is the *immediate* reflection, we will go deeper on that in the end-of-course interview) • Do you think the students understood the assignment in an appropriate way? • Any challenges you noticed or students told you they were facing when working on the e-portfolios? • Did you notice any change in their level of knowledge and/ or commitment to the course after they completed the e-portfolios? • Any other things you noticed that you did not initially foresee but you think might be linked to the assignment? • Has the assessment process been more difficult and time consuming than in the case of other types of assignments and in comparison to your initial expectations?

Appendix B
Survey on the Use of ePortfolios in the Course "The Political Economy of Development in Asia"

1. Did you have any **previous experience** with e-portfolios?

Yes	
No	

2. Were the following aspects of the assignment made **clear** to you from the beginning?

	Not at all clear	Somewhat clear	Sufficiently clear	Very clear
Objectives of the assignment				
Instructions on how to approach the task				
Assessment criteria for the assignment				

Comments

3. Please evaluate the usefulness of the following aspects:

	Not at all useful	Somewhat useful	Sufficiently useful	Very useful
Guidance provided by the teacher **throughout** the task				
Feedback provided by the teacher **at the end** of the task				
Peer review exercise				

Comments

4. Did you feel comfortable using the e-portfolio **tool** (WordPress)?

Yes	
No	

Comments

5. What **skills** did the e-portfolio assignment help you develop?

6. Do you think the fact that you could **use different media** in portfolios helped enhance your learning? (as opposed to an essay assignment)

Yes	
No	

Comments

7. How would you evaluate the **workload** required to fulfil this assignment? How does it compare to other assignments (in this course and in other courses)?

| Less work than for other assignments	Same work as for other assignments	More work than for other assignments

Comments

8. Please comment on how you think the e-portfolio assignment **links to the rest of the course** (learning goals, content, other tasks). Does it **add value** to it? How about the link to other courses?

9. Did you face any **challenges** on fulfilling the e-portfolio assignment? If so, please give some examples.

10. What do you perceive to be the **benefits and the drawbacks** of using this assessment method?

Benefits	Drawbacks

11. Please **reflect on the personal learning value** of this assignment. Order the following e-portfolio related actions/features according to **their value for your learning:**
    (1 = *most important*, 6 = *least important*)
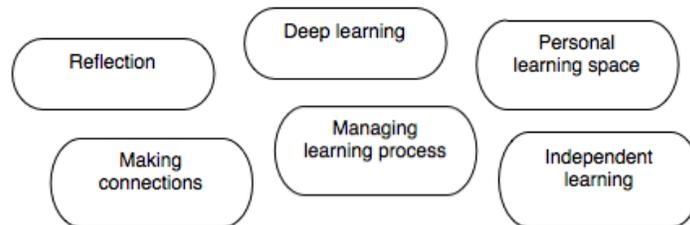
12. Please evaluate your **overall experience** with this form of assessment:

Not at all satisfied	Not so satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied

Do you have any further **comments** or **suggestions** on whether/how e-portfolios could be used in the future?