USING E-PORTFOLIOS FOR ACTIVE STUDENT ENGAGEMENT IN THE ODeL ENVIRONMENT

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ABSTRACT

Aim/Purpose	This study explored the use of e-portfolios in fostering student engagement with their lecturers, content, and other students during the COVID-19 pandemic.
Background	Although e-portfolios are still a relatively new trend in developing countries, they are becoming an alternative teaching and learning tool in distance education and online environments. Research has placed e-portfolios as channels through which important skills such as self-directed learning, critical thinking, and lifelong learning can be infused. Most research has focused on students' perceptions of e-portfolios and/or implementation and adoption thereof, and not on how lecturers can design learning objects that foster active student engagement with the e-portfolios.
Methodology	Within an interpretive paradigm, the research followed a qualitative approach. Semi-structured interviews were held with nine purposefully selected lecturers in the College of Education (CEDU) and College of Human Sciences (CHS) in a South African ODeL university and document analysis reviewed undergraduate and postgraduate e-portfolio modules. A thematic approach was employed to analyze data.
Contribution	This study adds to the existing knowledge on how lecturers can design learning objects that foster active student engagement with the e-portfolios taking into consideration the three presences of community of enquiry in designing learning activities and this study suggests a definition of portfolio for better understanding in a different context.
Findings	The findings revealed that e-portfolios can promote active student engagement in Open Distance eLearning (ODeL) spaces.

Recommendations for Practitioners	The study recommends that lecturers should design learning objects in e-portfolios that require a high level of level student engagement. The study also recommends that higher education institutions (HEIs) provide lecturers with appropriate technical support and relevant continuous training on the design and development of learning objects in e-portfolios.
Recommendations for Researchers	Researchers can expand the study to other ODeL institutions of learning in Africa to validate the findings and find more options.
Impact on Society	E-portfolios by their nature are designed to promote personal reflection, collaboration, and digital literacy among students, and thus are appropriate vehicles through which active student engagement can be fostered.
Future Research	A broader study can be conducted on how lecturers can design learning objects that foster active student engagement with e-portfolios for educational purposes.
Keywords	E-portfolios, learning objects, online learning, Open Distance eLearning, student engagement, student support

INTRODUCTION

Distance education (DE) and online learning are the fastest growing areas of education because they provide access to educational opportunities in a flexible manner to students from diverse backgrounds and geographical regions who are often unable to access higher education by other means (Roll et al., 2018). Research shows an exponential growth of students within online environments (Bissessar et al., 2020), which essentially began before the pandemic.

Online educational programs have been reported to equip students with the necessary 21st-century skills such as digital literacy and technical knowledge, the ability and flexibility to work individually and in teams, and the competence to learn collaboratively and independently. Other benefits of online learning include the development of lifelong learning, an important skill needed by students as they have to adapt to a world of fast-changing technology, an abundance of information, and constant change (Malan & Stegmann, 2018).

Distance education, backed by technology, has made it possible for students to fully participate in educational opportunities, especially offering access to students from developing countries. However, online learning has its own challenges, one of which is the required interaction between students and instructors to fully and successfully engage in educational activities. With the emergence of various technological innovations, instructors have had to acquire and develop creative and functional pedagogical strategies and approaches through which this vital interaction can be achieved. In this paper, we look at how electronic portfolios (e-portfolios) can be used to increase student engagement that can lead to meaningful online educational experiences, for both the learner and the instructor.

This paper also focuses on the University of South Africa (UNISA) as one of the largest open distance and e-learning (ODeL) institutions in Africa and globally (Tait, 2013). Although UNISA officially introduced e-learning in 2013 (Baijnath, 2014), thus moving from ODL to ODeL (Ngubane-Mokiwa, 2017), most modules and courses are still being offered in a blended learning mode with the aim of gradually transitioning to full online education. However, due to the Covid-19 pandemic, as with educational institutions worldwide (Modise & Van den Berg, 2021), teaching and learning have moved online, conducted mainly through a learning management system (LMS). Most modules are offered through e-portfolios, which are increasingly being adopted by HEIs in South Africa (Carl & Strydom, 2017). However, we believe that the use of the e-portfolio approach within the UNISA context is underdeveloped but if well-defined and properly implemented, has the potential for impactful integration. This research focuses on the possible level of student engagement that can be achieved through the use of e-portfolios in the ODeL context and seeks to answer the following

research question: How do e-portfolios encourage and improve active student engagement in the ODeL environment during and post such instances as the COVID-19 pandemic?

LITERATURE REVIEW

This literature review touches on using e-portfolios for active student engagement in the ODeL environment. The literature zooms into the e-portfolio definition and how it is relevant for student engagement.

DEFINITION OF E-PORTFOLIO

Definitions of terms used in higher education (HE) research, and especially in online education, have brought more confusion than clarity. Due to their nature and diverse use, there seems to be no agreement and/or common definition of e-portfolios, despite their increasing use in HE. What exacerbates the situation is that many researchers continue to write about e-portfolios without clarifying their definitions.

Barrett (2011) defined an e-portfolio as "the compilation of portfolio items stored in electronic formats such as audio-visual, graphical, or text". Jenson and Treuer (2014, p. 55) expanded by explaining that the e-portfolio is "a tool for documenting and managing one's own learning over a lifetime in ways that foster deep and continuous learning" over a tuition period (that is, semester or year). What is common in many definitions of the e-portfolio is the idea of a continuous compilation of evidence of continuous learning that is submitted for the purpose of assessing the learning. Although e-portfolios are seen as learner-centric pedagogical approaches, instructors are key role players as they are responsible for designing the learning environment and the strategies employed therein, including student engagement.

Research indicates that interactions that students experience with teachers are linked to active participation in learning, academic success, and feelings of support (Richardson & Radloff, 2014). Current e-portfolio technologies have the ability to bring a community of students together to create and share knowledge in a learning situation. The beauty of e-portfolios is that they can be successfully used for teaching and learning diverse subjects and learning content. One of the key features of distance and online education is the need for interaction, which prompts instructors to design learning activities that foster high levels of student engagement.

STUDENT ENGAGEMENT

The definition of engagement has been extensively explored in the distance and online learning literature. The Glossary of Education Reform (2016, para. 1) defines student engagement as "the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education". Axelson and Flick (2011, p. 38) define student engagement as "how involved or interested students appear to be in their learning and how connected they are to their classes, their institutions, and each other." Kuh (2012) argues that ideally, the more students interact with a subject, the more likely they will understand it better.

Taking these definitions into account, one can deduce that student engagement is about the relationship a learner has with her/his studies. This relationship is influenced by various factors, including the student's motivation and life objectives; however, the key to this relationship is the design of the learning environment. Although content previously was a central focus, engagement plays a major role in stimulating online learning (Banna et al., 2015).

Student engagement in distance and online education is vital. Engagement strategies are aimed at providing positive learner experiences including active learning opportunities, such as collaborative group work, discussions, sharing resources, and reflections. As students are faced with various

competing factors such as isolation, boredom as well as information overload, engagement is the key solution to the issue of learner isolation, dropout, retention, and the graduation rate in online learning (Banna et al., 2015).

Three basic engagement techniques for online learning have been identified as student-content, student-lecturer, and student-student (Bernard et al., 2009) and are considered some of the theorized phenomena in distance and online education reported in research (Garrison et al., 2000; Moore, 2013). In this paper, we focus on e-portfolios to achieve these interactions for ODeL students. Lear et al. (2010) assert that interactions with content, peers, and lecturers/instructors assist online students in becoming more actively engaged as interactivity and a developing sense of community result in high-quality instruction and more effective learning outcomes.

Because of their interactive nature, e-portfolios foster engagement with content, students, and lecturers. Modise (2021, p. 293) suggests that e-portfolios "have become a new phenomenon as educational institutions adopt new technology innovations, such as e-learning approaches". The important feature of e-portfolios is that they are predominantly student-centered and have been found to promote self-directed and lifelong learning (Van Wyk, 2018). E-portfolios also depend on the notion of learning by doing which Moye et al. (2014) believe supports problem-solving principles and collaborative activities, further increasing the possibility of student interaction and engagement.

THEORETICAL FRAMEWORK

Interaction is one of the key issues in distance education and online learning. Without interaction with relevant role players in DE and online learning, it is almost impossible to achieve the desired educational experience and the sought-after deep and meaningful learning. Key role players in any distance education system, such as the student, content, teacher, and technology, contribute to the success of learning outcomes. In this context, teaching and learning happen at separate times and in separate spaces; however, technology has made it possible for teaching and learning to happen simultaneously, especially in online learning environments.

This paper is underpinned by the Community of Inquiry theory (CoI) (Garrison et al., 2000), designed to inform approaches to online learning design and delivery, specifically to achieve deep learning experiences. Garrison et al. (2000) proposed the notion of groups of people, a community, collectively working together to achieve set goals. The CoI model involves "the notion of learning community and social interactions within the online environment" (Bissessar et al., 2020, p. 63). A COI consists of three intersecting elements of presence (social presence (SP), cognitive presence (CP), and teaching presence (TP)) that affect students' learning experiences.

Social Presence (SP) is defined as "the ability of participants in a community of inquiry to project themselves socially and emotionally as 'real' people" (Garrison et al., 2000, p. 94). SP involves open communication, group cohesion, and emotional expression (Bissessar et al. 2020; Feng et al., 2017; Garrison, 2009; Garrison et al., 2000).

Cognitive Presence (CP) is "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse" (Garrison et al., 2000, p. 89) and is regarded as the heart of CoI (Garrison, 2009). CP involves students' application and use of higher-order thinking skills through critical thinking (Kovanovic et al., 2017), triggering the event, exploration, integration, and resolution as key phases of critical inquiry.

Garrison and Kanuka (2004, p. 98) define *Teaching Presence (TP),* as the presence that "manages the environment and facilitates learning experiences" and is hailed as the glue that put the other presences together (Bissessar et al., 2020). TP's significance lies in its control of the level of interaction among the presences, level of student satisfaction, community spirit, and the overall learning that takes place in an online community. Bissessar et al. (2020) identify key activities in TP as involving the design and organization of learning objects, facilitation of dialogue, and direct instruction.

Garrison (2009) proposed that a CoI goes beyond mere information sharing and progresses to a shared understanding of educational experiences. CoIs create learning communities that foster active learning, collaboration, and collectivism. This result in an intentional (or even forced) interplay between the learner and his/her environment. Learning takes place when it is socially constructed at the interpersonal level, resulting in a high level of engagement and meaningful learning within the community (Bissessar et al., 2020; Wheaton, 2017). Supported by Paily (2013), Mbatha (2013) suggests that new media tools should be used to improve the interaction between learners and educators.

METHODOLOGY

This research followed a qualitative case study methodology (Yin, 2009) in line with the interpretivist paradigm, with the aim of investigating how active student engagement is achieved through the use of e-portfolios in an ODeL university in South Africa. Although qualitative methods can be time-consuming, they elicit rich data in comparison to quantitative research approaches (Bissessar et al., 2020).

The interpretivist paradigm believes reality is multi-layered, and that people have multiple interpretations, ideas, and understandings of what is taking place (Creswell, 2012). The interpretivist paradigm was appropriate for this study as it addressed questions that required participants to voice their ideas and understanding of e-portfolio through their lived experiences. It was important that these meanings and ideas are understood in the context within which they occur (Saldaña, 2021); that is, in HEI and ODeL contexts, in a developing country.

POPULATION AND SAMPLING

The study involved academics/teaching staff at a South African ODeL university who currently use the university's LMS to deliver teaching and support for students. Although the LMS and other digital tools and platforms were not compulsory (Modise & Van Den Berg, 2021), the COVID-19 pandemic forced all teaching and student support to move online and be facilitated through the LMS. However, only lecturers whose modules were regarded as 'e-portfolio modules' or modules that have an element of e-portfolio were purposively selected for participation in this study. Although known for its subjectivity, purposive sampling is "widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest" (Palinkas et al., 2015, p. 533).

Demographics of participants (Table 1) reflect an older group of five male and four female academics between the ages of 40 and 63 years. The experience of working in DE, specifically at ODeL institution, ranges from 2 to 34 years, and various levels of experience in working with e-portfolios.

Table 1. Participant profiles

Participants (n=9)	M/F	Age	College	Teaching experience in ODL/in current institution	Years Teaching with e-portfolio	Modules (n=15)	No. of students in a module	Teaching Assistant (Tas) or e-tutors
Participant 1	F	63	CHS	17	1	2 modules	1500, 500	e-tutor
Participant 2	M	61	CHS	31	4	1 module	70	N/A
Participant 3	F	40	CEDU	2	2	2 modules	5, 5500	N/A
Participant 4	F	51	CEMS	7	1	1 module	500	2nd Lecturer
Participant 5	F	49	CHS	6	4	1 module	700	3 e-tutors

Participants (n=9)	M/F	Age	College	Teaching experience in ODL/in current institution	Years Teaching with e-portfolio	Modules (n=15)	No. of students in a module	Teaching Assistant (Tas) or e-tutors
Participant 6	M	64	CHS	34	14	2 modules	16, 30	N/A
Participant 7	M	41	CHS	14	5	1 module	90	N/A
Participant 8	M	58	CHS	34	5	4 modules	160, 4, 4, 4	N/A
Participant 9	M	62	CAES	9	3.5	1 module	150	Mentors

Some participant lecturers were teaching more than one module with the student enrolments varying from only four registered students in a module to about 5500 students (Table 1). There were nine participants, six from the College of Human Sciences (CHS), one from the College of Education (CEDU), one from the College of Economic and Management Sciences (CEMS), and another from the College of Agriculture and Environmental Sciences (CEAS).

DATA COLLECTION

A semi-structured interview instrument with open-ended questions (Creswell, 2012) was used to draw contextual information from each lecturer. The interview instrument, guided by the literature and the research question, was chosen for its flexibility (Creswell, 2012), and designed to enable each participant to freely express themselves on student engagement through e-portfolios in the ODeL context. In line with the Covid-19 pandemic lockdown restrictions and regulations, the interviews were conducted and recorded via Microsoft Teams and later transcribed. Saldaña's (2021) guidelines for coding and analyzing qualitative data were followed. Collaborative manual coding was used for its flexibility, convenience, and opportunity to immerse oneself in the data (Saldaña, 2021).

The research also included document analysis (Table 2), which involved studying participating lecturers' tutorial materials and module sites on the university's LMS. Document analysis was found to be relevant and suitable in providing a greater understanding of what was happening in practice with regard to the designing of learning objects that foster student engagement in e-portfolios, as narrated by participants in the interviews.

Table 2. Document analysis of tutorial materials and module site

Participants (n=9)	Modules (n=15)	Tutorial Materials	Module Site Access (n=7)	E-portfolio Type	Assignment e-portfolio	Formative/ Summative
Participant 1	Module 1	Yes?	No	PDF	-	Summative
	Module 2	Yes	No	PDF	-	
Participant 2	Module 1	Yes	No	PDF	Assignment 11	Summative
Participant 3	Module 1	Yes	Yes	ONLINE – Mahara	All assignments	Formative & Summative
	Module 2	Yes	Yes	PDF	Assignment 4	Summative
Participant 4	Module 1	Yes	Yes	PDF	Assignment 4	Summative
	Module 2	Yes	Yes	PDF	-	Summative

Participants (n=9)	Modules (n=15)	Tutorial Materials	Module Site Access (n=7)	E-portfolio Type	Assignment e-portfolio	Formative/ Summative
Participant 5	Module 1	Yes	No	PDF	Non-venue-based examination	Summative
Participant 6	Module 1	Yes	Yes	PDF	Assignment 4	Summative
	Module 2	Yes	Yes	PDF	Assignment 5	Summative
Participant 7	Module 1	Yes	No	PDF	Non-venue-based examination	Summative
Participant 8	Module 1	Yes	No	PDF	Assignment 03	Summative
	Module 2	Yes	No	PDF	Assignment 03	Summative
	Module 3	Yes	No	PDF	Assignment 03	Summative
	Module 4	Yes	No	PDF	Non-venue-based examination	Summative
Participant 9	Module 1	Yes	Yes	PDF	-	Summative

ETHICAL CONSIDERATIONS

All ethical considerations and principles, as outlined in UNISA's Ethics Policy, were followed and guided by the University's Ethics Committee. Issues such as participants' anonymity, privacy, and consent were ensured during the interviews and data presentation. Any information that could be used to identify the participants was deliberately removed from all reporting. For example, the lecturers' names were not used in the interviews, participants were identified by their titles (for example, Prof, Dr, Mrs, Mr) without using their real names, and module names and codes were also removed (see Table 2). This ensured anonymity when giving the interview recordings to an independent transcriber.

Trustworthiness

Since the research involved two researchers, intercoder reliability in coding was achieved through constant member-checking (Hamilton, 2020) and continuous peer-review (Bissessar et al., 2020) in which interpretations of the data and the themes were discussed to ensure the quality of data interpretation. The principles of credibility, dependability, transferability, and confirmability were ensured following Amankwaa's (2016) guidelines. Dependability, which focuses on the possibility of repeatability through the process of research, was ensured by thoroughly documenting all steps taken in this research, and confirmability was achieved through member checking to avoid bias. Although this is a case study, a detailed description of the research process (Amankwaa, 2016) was presented to ensure the transferability of the findings to similar contexts.

FINDINGS AND DISCUSSION

The findings are presented under the two themes emerging from the process of coding and synthesizing the data:

- The lack of common understanding, definition, and proper guidance of e-portfolio
- An e-portfolio as a vehicle to increase student engagement in ODeL

THEME 1: THE LACK OF COMMON UNDERSTANDING, INSTITUTIONAL DEFINITION, AND PROPER GUIDANCE OF E-PORTFOLIO

The study found that the term "e-portfolio" was used loosely to refer to some assignments that are electronically submitted via the LMS for non-venue-based examinations. The findings revealed that out of 15 modules, only one module actually uses an online, web-based e-portfolio, that is Mahara e-portfolio (Table 2).

From the 15 modules, access to seven module sites on myUnisa LMS, revealed that the modules were not using online/web-based e-portfolios. Most of the modules require students to respond to specific questions related to the module content, submitted either in Word or PDF document via the university's LMS submission system, dropbox, or even via email in some cases. These 'e-portfolios' include specific questions designed to test students' learning and understanding of the content, some modules include an element of reflection, but in general, these are just essay-type assignments submitted digitally as part of the university's alternative assessment (Nkalane, 2018). Barrett (2011) argues that portfolio development involves more than just technology and suggests that the process of learning during e-portfolio development should be given priority. Jimoyiannis (2012) suggests the e-portfolio process should include constructivist actions, reflection, and collaboration. However, Carl and Strydom (2017, p. 3) recommend that an emphasis should first be placed on "developing a shared understanding" of e-portfolios and what is expected to be achieved from such a learning process.

The findings suggest a lack of a common understanding, institutional definition, and proper guidelines for e-portfolio use within the institution, as indicated by the comments from some of the participants:

> *"My concern is with the flexible definitions that are given to the term e-portfolio … Recently it has come to my attention that the definition of e-portfolio that we use in my department differs from the one used by DSAA. For example, in [our department] the summative assessments are termed e-portfolios on our module forms"*

> *"What we in the department call an e-portfolio is NOT using the portfolio tools on MyUnisa. We are using the older system where the "e-portfolio" is submitted as "Assignment 03", or whatever number is appropriate for that module."*

This participant explained how this lack of common understanding and lack of e-portfolio definition negatively affects their work:

> *"But now someone in admin has piped up 'that's not an e-portfolio, that's a portfolio'. As far as WE are concerned, a portfolio without the "e" is a paper thing…"*

The lack of a common and 'official' definition of an e-portfolio has led to many lecturers developing their own understanding, some profiling their modules as an e-portfolio when that is not the case. The module(s) that is offered with an e-portfolio has a specific link on myUnisa LMS that guides the lecturer and students to their personal learning e-portfolio environments (PLEE), as shown in Figures 1 and 2. Only one module of the seven reviewed modules had this e-portfolio link. Figure 2 illustrates the lecturer's main landing page on Mahara, accessed through myUnisa link. This image indicates that this module has used Mahara since 2017. Merely typing an assignment essay in a Word document/file and converting it to a PDF does not necessarily qualify the product as an e-portfolio.

Mahasneh (2020, p. 32) proposed a model of an e-portfolio which comprises ten components: "student biography, course plan, reports and research, homework, projects and experiments, activities, summaries and conclusions, scientific material, audio and video clips, and samples of student performance". Although Mahasneh's (2020) proposed model does not include reflection nor does it demonstrate the self-directed learning or lifelong learning skills that are made possible through e-portfolio (Rossi et al., 2008), it offers more than what is currently found in e-portfolio modules at UNISA.
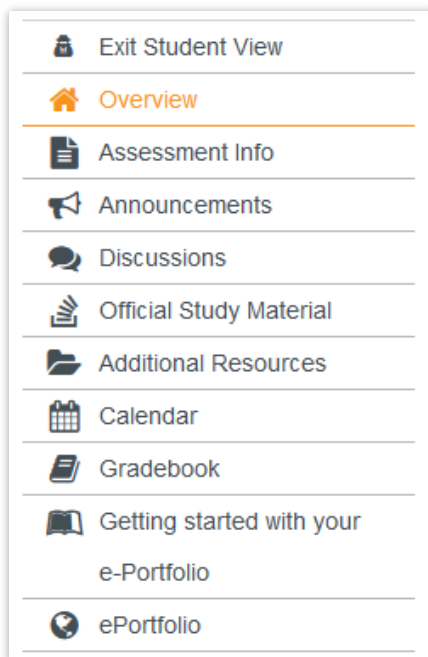
Figure 1. ePortfolio link on myUnisa LMS

Figure 2. Landing page on the Mahara e-portfolio

Jenson and Treuer (2014) identify reflection, self-directed learning, collaborating, collection, and integrated learning into other life situations, as key e-portfolio literacy skills. The definition and use of an e-portfolio found in the tutorial letters of some modules reviewed for this study do not indicate any of these characteristics that allow them to be classified as e-portfolios. E-portfolios are more than electronic documents – definitions of e-portfolios describe them as a compilation of evidence arranged and presented in various digital file formats (Barrett, 2011; Jenson & Treuer, 2014).

There is undoubtedly a need for a clear institutional definition and a shared understanding of e-portfolio within the university and in similar contexts. Consequently, the following definition of an e-portfolio within the ODL and e-learning environment is proposed:

> *An e-portfolio is a purposeful development and compilation of academic work that is presented as evidence of a student's academic achievement and learning journey through various digital artifacts in an online or web-based system.*

The artifacts may include evidence of participation in discussion forums, use of podcasts, social media tools and products, online platforms, and media (text, graphics, audio, video). All should be incorporated into one process and product of learning, according to the required module objectives. Although the content in an e-portfolio may essentially be similar to a paper-based portfolio (Barrett, 2011), most e-portfolio tasks, interactions, learning, and assessment happens predominantly online throughout the academic period

Based on the above definition and the findings in this study, an 'e-portfolio module' within the university context should be any module that uses an e-portfolio or has an element of an e-portfolio, specifically a web-based portfolio, which comprises 75% of teaching and learning and assessment activities online.

The interviews revealed that some lecturers had designed their modules to achieve a level of desired student engagement, while others were striving to design their learning content for online delivery. Most lecturers were using LMS tools such as discussion forums, blogs, announcements, and other digital tools and platforms like WhatsApp, Facebook, Microsoft Teams, and Google Apps to encourage and foster student engagement in the ODeL context. However, this is basically what is expected of any lecturer teaching at the university, especially with the pandemic moving all teaching and learning to online spaces. The university's LMS has an array of tools designed to enhance teaching and learning and using these is mandatory. However, because many of the reviewed modules do not have a specific e-portfolio platform, the modules cannot be confirmed as being taught through the use of e-portfolios. As a result, the next theme reports only on the module that actually offers teaching and learning via an online portfolio system (Mahara).

THEME 2: THE E-PORTFOLIO AS A VEHICLE TO INCREASE STUDENT ENGAGEMENT IN ODEL

Interview data revealed that the design and presentation of learning activities differed greatly between 'PDF' e-portfolios and web-based e-portfolios. It was apparent that the learning activities in the e-portfolio module were designed with various types of interactions in mind. Student engagement is greater with an e-portfolio platform whereas the LMS-offered modules had a greater degree of student-content interaction and little interaction with the lecturer and other students. The e-portfolio can be considered a lifelong learning tool, allowing students to continuously update their e-portfolios and incorporate their current career status or include their future plans. However, at this stage, the university does not offer access to e-portfolios after submission for summative examination, something that should change in the future.

Student-content engagement

Student-content interaction is regarded as the most important interaction in distance education (Moore, 2013). Distance and online education students' first contact is generally with the module content after registration. They then interact with the lecturer and other students as the tuition period advances. When asked how the lecturer encourages and ensures student-content interaction through the e-portfolio, the lecturers indicated creating a free and open environment where students can freely communicate. It offers a community of inquiry where, in addition to raising concerns about the assignments, it offers a platform for investigating, debating, and discussing the content as well as problem-solving and so develop their critical thinking skills:

> *With the postgraduate [e-portfolio] module, students engage in different levels, through different platforms … students actively communicate their concerns and questions about assignments or the content.*

Reflection is one of the important tools' lecturers can use to encourage engagement and deep learning and thus develop critical 21st-century skills. Reflection should be embedded in the e-portfolio module to encourage continuous engagement and active reflection throughout the tuition period. This reflection allows students to think deeply about their learning and consider where they need to improve using the feedback to inform future learning.

Student-lecturer engagement

The role of lecturers (TP) is to manage the online learning environment and focus on facilitating learning experiences (Garrison & Kanuka, 2004) and it is hailed as the glue that holds other presences together (Bissessar et al., 2020). This is important for successful learning and helping students function as well-rounded people despite times of crisis and being distance education students. Lecturers are also able to observe non-participation and provide support to students. Although learning may happen on various platforms including social networks, TP is effective if felt by students in those contexts, as indicated by a participant:

> *I engage with students through different platforms WhatsApp, email, and discussion forums where I provide feedback on lessons posted for discussion.*

In addition, the lecturer's role is to help students to bring together (compile) all their artifacts from various digital places and package them accordingly in one e-portfolio platform. TP, in the learning process, as alluded to by Garrison and Kanuka (2004), plays an important role in making sure that there is control of the level of interaction among learners, and that a level of student satisfaction and community spirit is developed to ensure overall learning in an online community.

Student-student engagement

The design of an e-portfolio allows engagement and encourages students to join or build an online community from which social learning is enabled. One of the requirements in the e-portfolio module is that students should have at least more than two friends selected from the online class, and they should all invite the lecturer as their friend. This is not only to allow the lecturer access to their personal learning e-portfolio environment (PLEEs) but also to enable peer review. Although there are challenges experienced by students, the lecturers reported that collaboration and peer assessment is built into the design of the e-portfolio:

> *… ideally, we want to push peer-to-peer assessment and collaborative learning as part of our e-portfolios, but our students are complaining of data … and we should design learning activities without disadvantaging them.*

> *… I will then give feedback through the group representation, so that shows me there is a certain level of collaboration amongst students and I believe that is an amicable collaboration because they can trust each other with the task …*

This study thus found that if well-designed, e-portfolios are used in distance and online learning environments, they can increase the level of student engagement, foster a community of inquiry, and develop critical 21st-century skills.

RECOMMENDATIONS

The lack of a common and clear e-portfolio definition and guidelines has serious consequences for students and lecturers, as this could negatively impact the delivery of learning content and the learning experience. Therefore, it is critically important that institutions adopt and/or adapt the suggested definition to best suit their context, and design support strategies, tools, and resources for lecturers and students using the platform of e-portfolio modules.

A move to teach fully online was precipitated by the Covid-19 pandemic; lecturers did not have time to acquire the necessary skills for designing learning materials for online teaching and learning. Therefore, it will benefit them and their students if they participate in continuous training on how to design and develop learning materials that will foster student engagement in e-portfolios and online learning.

CONCLUSION

The findings have revealed that through the CoI lens, e-portfolios can be used to encourage various interactions and actively engage students through the intersection of social, cognitive, and teaching presence. E-portfolios by their nature are designed to promote personal reflection, collaboration, and digital literacy among students, and thus are appropriate vehicles through which active student engagement can be fostered. However, a lack of a common understanding and definition of an e-portfolio can affect the design and presentation of learning materials in online education.

REFERENCES

Axelson, R. D., & Flick, A. (2010). Defining student engagement. *Change: The Magazine of Higher Learning, 43*(1), 38-43. https://doi.org/10.1080/00091383.2011.533096

Amankwaa, L. (2016). Creating protocols for trustworthiness in qualitative research. *Journal of Cultural Diversity, 23*(3), 121-127.

Baijnath, N. (2014). Curricular innovation and digitisation at a mega university in the developing world – The UNISA "Signature Course" project. *Journal of Learning for Development*, *1*(1). https://doi.org/10.56059/jl4d.v1i1.36

Banna, J., Lin, M-F. G., Stewart, M., & Fialkowski, M. K. (2015). Interaction matters: Strategies to promote engaged learning in an online introductory nutrition course. *Journal of Online Learning and Teaching, 11*(2), 249-261.

Barrett, H. C. (2011). *Balancing the two faces of e-portfolios, Education for a digital world: Advice, guidelines, and effective practice from around the globe* (2nd ed.). British Columbia.

Bernard, R. M., Abrami, P. C., Borokhovski, E., Wade, C. A., Tamim, R. M., Surkes, M. A., & Bethel, E. C. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research*, *79*(3), 1243-1289. https://doi.org/10.3102/0034654309333844

Bissessar, C., Black, D., & Boolaky, M. (2020). International online graduate students' perceptions of CoI. *European Journal of Open, Distance and E-Learning, 23*(1), 61-83. https://doi.org/10.2478/eurodl-2020-0005

Carl, A., & Strydom, S. (2017). e-Portfolio as reflection tool during teaching practice: The interplay between contextual and dispositional variables. *South African Journal of Education, 37*(1), 1-10. https://doi.org/10.15700/saje.v37n1a1250

Creswell, J. W. (2012). *Educational research planning: Conducting and evaluating quantitative and qualitative research* (4th ed.). Pearson.

Feng, X., Xie, J., & Liu, Y. (2017). Using the community of inquiry framework to scaffold online tutoring. *International Review of Research in Open and Distributed Learning, 18*(2), 162-188. https://doi.org/10.19173/irrodl.v18i2.2362

Garrison, D. R. (2009). Communities of inquiry in online learning. In P. Rogers, G. Berg, J. Boettcher, C. Howard, L. Justice, & K. Schenk (Eds.), *Encyclopedia of distance learning* (2nd ed., pp. 352-355). IGI Global. https://doi.org/10.4018/978-1-60566-198-8.ch052

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education model. *The Internet and Higher Education*, *2*(2-3), 87-105. https://doi.org/10.1016/S1096-7516(00)00016-6

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education, 7*, 95-105. https://doi.org/10.1016/j.iheduc.2004.02.001

Glossary of Education Reform. (2016). *Student engagement.* https://www.edglossary.org/student-engagement/

Hamilton, J. B. (2020). Rigor in qualitative methods: An evaluation of strategies among underrepresented rural communities. *Qualitative Health Research*, *30*(2), 196-204. https://doi.org/10.1177/1049732319860267

Jenson, J. D., & Treuer, P. (2014). Defining the e-portfolio: What it is and why it matters. *Change: The Magazine of Higher Learning, 46*(2), 50-57. https://doi.org/10.1080/00091383.2014.897192

Jimoyiannis, A. (2012). Developing a pedagogical framework for the design and the implementation of e-portfolios in educational practice. *Themes in Science & Technology Education*, *5*(1/2), 107-132. http://earthlab.uoi.gr/ojs/theste/index.php/theste/article/view/110/77

Kuh, G. D. (2012). High-impact educational practices: What they are, who has access to them, and why they matter. *Peer Review, 14*(3), 29-30.

Lear, J. L., Ansorge, C., & Steckelberg, A. (2010). Interactivity/community process model for the online education environment. *Journal of Online Learning and Teaching, 6*(1), 71-77.

Mahasneh, O. M. (2020). A proposed model for the university students' e-portfolio. *Journal of Education and e-Learning Research*, *7*(1), 28-33. https://doi.org/10.20448/journal.509.2020.71.28.33

Malan, M., & Stegmann, N. (2018). Accounting students' experiences of peer assessment: A tool to develop lifelong learning. *South African Journal of Accounting Research, 32*(2-3), 205-224. https://doi.org/10.1080/10291954.2018.1487503

Mbatha, B. (2013). Beyond distance and time constrictions: Web 2.0 approaches in open distance learning, the case of the University of South Africa (UNISA). *Mediterranean Journal of Social Sciences, 4*(14), 543-543. https://doi.org/10.5901/mjss.2013.v4n14p543

Modise, M. P. (2021). Postgraduate students' perception of the use of e-portfolios as a teaching tool to support their learning in an open and distance education institution. *Journal of Learning for Development*, *8*(2), 283-297. https://doi.org/10.56059/jl4d.v8i2.508

Modise, M. P., & Van den Berg, G. (2021). Covid-19 as an accelerator for training and technology adoption by academics in large-scale open and distance learning institutions in Africa. *UnisaRxiv.* https://doi.org/10.25159/UnisaRxiv/000016.v1

Moore, M. G. (2013). The theory of transactional distance. In M. G. Moore (Ed.), *Handbook of distance education* (pp. 84-103). Routledge. https://doi.org/10.4324/9780203803738.ch5

Moye, J. J., Dugger, W. E., Jr., & Starkweather, K. N. (2014). Is "learning by doing" important? A study of doing-based learning. *Technology and Engineering Teacher*, *74*(3), 22-28.

Ngubane-Mokiwa, S. A. (2017). Implications of the University of South Africa's shift to open distance e-learning on teacher education. *Australian Journal of Teacher Education*, *42*(9), 111-124. https://doi.org/10.14221/ajte.2017v42n9.7

Nkalane, P. K. (2018). *E-portfolio as an alternative assessment approach enhancing self-directed learning in an Open Distance Learning environment* [Doctoral dissertation, University of South Africa].

Paily, M. U. (2013). Creating constructivist learning environment: Role of "Web 2.0" technology. *International Forum of Teaching and Studies, 9*(1), 39-50.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533-544. https://doi.org/10.1007/s10488-013-0528-y

Richardson, S., & Radloff, A. (2014). Allies in learning: Critical insights into the importance of staff-student interactions in university education. *Teaching in Higher Education, 19*(6), 603-615. https://doi.org/10.1080/13562517.2014.901960

Roll, I., Russell, D. M., & Gašević, D. (2018). Learning at scale. *International Journal of Artificial Intelligence in Education, 28*(4), 471-477. https://doi.org/10.1007/s40593-018-0170-7

Rossi, P. G., Magnoler, P., & Giannandrea, L. (2008). From an e-portfolio model to e-portfolio practices: Some guidelines. *Campus-Wide Information Systems, 25*, 219-232. https://doi.org/10.1108/10650740810900667

Saldaña, J. (2021). *The coding manual for qualitative researchers*. Sage.

Tait, A. W. (2013). Editorial. *Journal of Learning for Development, 1*(1). https://doi.org/10.56059/jl4d.v1i1.39

Wheaton, K. (2017). *Social, cognitive, and teaching presence: Impact on hybrid and online graduate-level educational experience and retention* [Doctoral dissertation, George Fox University]. http://digitalcommons.georgefox.edu/edd/94

Van Wyk, M. M. (2018). e-Portfolio as an empowering tool in the teaching methodology of economics at an open distance e-learning university. *Ubiquitous Learning: An International Journal, 11*(3), 35-50. https://doi.org/10.18848/1835-9795/CGP/v11i03/35-50

Yin, R. K. (2009). How to do better case studies. In L. Bickman & D. J. Rog (Eds.), *The SAGE handbook of applied social research methods* (2nd ed., pp. 254-282). https://doi.org/10.4135/9781483348858.n8

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