

WELL-STRUCTURED ELECTRONIC PORTFOLIO AS A FACILITATOR OF ENGAGEMENT IN EFL SKILLS

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ABSTRACT

Electronic portfolios have been widely accepted as the learning and assessment tool for enhancing language skills and competence in higher education. However, previous studies have not profoundly examined how e-portfolios with well-defined structure influences students' engagement. More information on e-portfolios and engagement is also needed. Therefore, this study was conducted to investigate the well-structured e-portfolios on students' engagement in learning activities as these activities consist of self-and peer-assessment. To serve this intention, an explanatory sequential mixed method with questionnaires and interviews was used to obtain data. The questionnaires and reflective notes were analyzed using descriptive statistics, and the results of the interview were analyzed based on the qualitative thematic analysis technique. The findings show that there is no difference between EFL students' perception and language skills. It was also indicated that self-assessment plays an essential role in engagement which informs constructs of e-portfolio. Further, a wider range of information on e-portfolio structure to deepen engagement was constructed. The conclusion profoundly informs and implicates instructional design and pedagogy in further study.

Keywords: *Electronic portfolios, engagement, English as a foreign language*

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INTRODUCTION

The need is becoming increasingly higher for students to be skilled in using technology (Redecker, 2017), as well as acquiring twenty-first century skills during their higher education studies (Oliver & Jorre de St Jorre, 2018). With the advance of web technology, learning strategies and pedagogy are increasingly digitalized in tertiary education institutions, and a range of educational initiatives in levels of courses, programs and institutions are being proposed accordingly. Despite these pedagogical merits, portfolio assessment remains problematic when utilized in classroom situations, namely teacher intransigence, insufficient learner engagement, heavy grading workload, lack of school support, and a larger testing regime (Lam, 2019). The Association of American Colleges and Universities contributed to the emerging field of e-portfolios practice globally to better meet the needs and expectations of prospective students (Gosper, Malfroy & McKenzie, 2013; Graham, Woodfield & Harrison, 2013). In China, the language learning environment is unnatural and limited within classrooms and campuses. For EFL learners, they tend to acquire language skills and knowledge to be mainly prepared for examinations. Therefore, educators need to take more responsibility as facilitators to encourage and administrate authentic and active learning for EFL learners in China, especially understanding how educational technology can support student engagement is increasingly becoming a necessity in tertiary education, and the technological tools are considered as the most effective at facilitating engagement (Bedenlier et al., 2020).

LITERATURE REVIEW

E-Portfolios in EFL Context

Electronic portfolios have drawn on administrators in educational institutions for their capability of tracking students learning performance and progress (Waye & Faulkner, 2012). Knight, Hakel and Gromko (2008, p. 1) found that “undergraduate students with e-portfolio artifacts had significantly higher grade-point average, credit hours earned, and retention rates than a matched set of students without e-portfolio artifacts”. E-portfolio has been attentive since the beginning of the digital era and increasingly applied in learning, teaching and professional development in particular (Cheng & Chau, 2013).

Digitalization contributes to one of its natures requiring various technological tools to enable access to materials and work simultaneously. Such technology-assisted learning enhances connections between students and their artifacts with more interactions with peers and teachers (Taskm & Kandemir, 2010). Becker, Dolmans, and Van Merriënboer (2016) believe that well-developed technology has the potential to add value to active and self-directed learning as well as quality teaching. In China, electronic portfolios drew the attention of educators around 2003 and witnessed growth since then (See Figure 1).

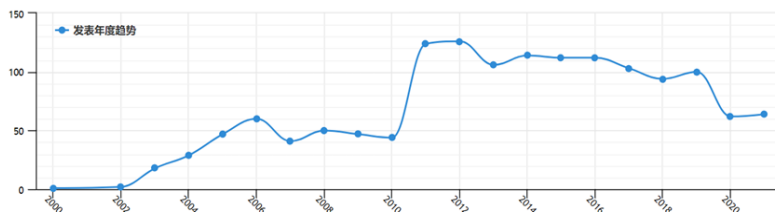


Figure 1. The trend of published articles related to e-portfolios from 2000 to 2021

In the various fields of study, the descending order of published articles are listed as educational theory and management, computer software and practice, foreign languages, higher education, and secondary education, in which higher education is not the priority whereas e-portfolio study and practice are mainly used in management (See Figure2).

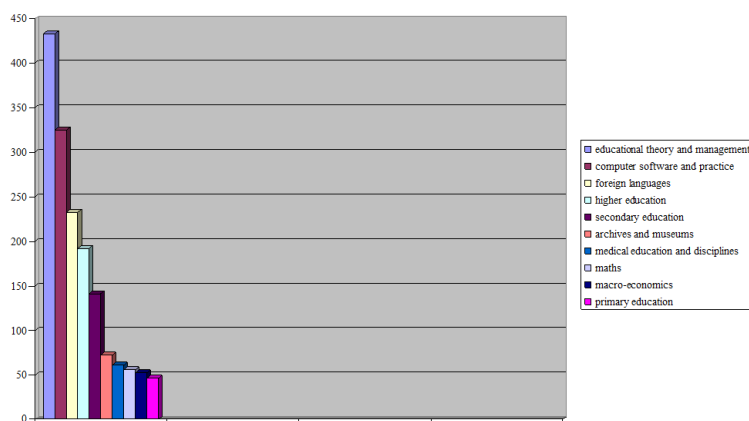


Figure 2. Number of published articles about e-portfolios in various fields of study

Relevant articles regarding electronic portfolio practice show variations in the quantity while the assessment with greater numbers. Furthermore, published articles by 2021, focusing on e-portfolio assessment, are fluctuating (See Figure 3) and specified as e-portfolio assessment, teaching assessment, portfolio assessment, process assessment, formative assessment, assessment system, and self-assessment.

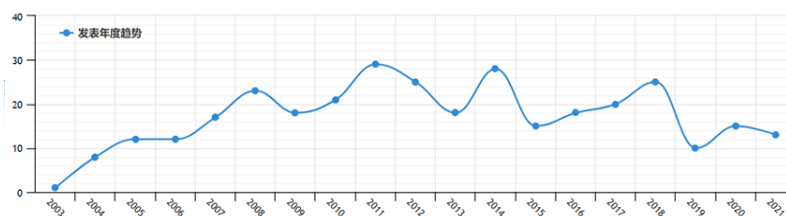


Figure 3. The trend of published articles related to e-portfolio within two decades

Generally speaking, international publications outnumbered national publications, which focus on educational and teaching practice, speaking, writing and technology courses, learning assessment towards undergraduate students, and professional development for teachers. In addition, the platform for e-portfolio learning and assessment is hardly seen in China. Research accomplishments are scarce in empirical studies (Weijun & Jianli, 2014).

Rationale of E-Portfolios

An electronic portfolio has been prior in a top tool to help students meaningfully connect their learning with a career interest and a helpful tool in the workplace for its portability, flexibility, adaptability, and multimedia digital affordances (Ambrose, 2013). Lust, Elen, & Clarebout (2013) reported to apply these tools for learning; and a valuable tool to support active learning and inspire the development of confidence and professions (Rees & Sheard, 2004). Also, students have the chance to document performance, competence, learning experience, professional growth and ongoing process by means of e-portfolios (Green et al., 2014) and to enhance their understanding of learning with continuous reflection (Lyons, 2008). Ring and Ramirez (2012) pointed out that e-portfolios can be treated as a lens through which we can enrich the whole picture of students' competencies and improve curriculum and program. From this point, e-portfolio also take responsibility for the

evaluation and assessment of performance and achievement; hence, it uncovers space for assessment of various learning that makes learners beneficial to curriculum and co-curriculum (Hubert, Pickavance, and Hyberger, 2015). Since reflection and professional identity matter for students, reflective space links to authentic assessment tasks used for career skills (Polly et al., 2015). Another factor also influences the implementation of e-portfolios set on feedback, which is provided by e-portfolios being an ideal medium for teaching and learning (Peacock, Murray, Scott & Kelly, 2011).

Electronic portfolios have drawn on administrators in educational institutions for their capability of tracking students learning performance and progress (Faulkner, 2007). Knight, Hakel and Gromko (2008, p. 6) found that “undergraduate students with e-portfolio artifacts had significantly higher grade-point average, credit hours earned, and retention rates than a matched set of students without e-portfolio artifacts.” The authenticity-based evidence documented in the artifacts created by students can strengthen illustrations of programs and curricula that are more effective in assessment (Hubert & Lewis, 2014). Besides, the essential components in the learning process are supported by self-awareness and self-identity (Mercer, 2017) and reflection on coursework and professional development (Landis, Scott, & Kahn 2015). Many research studies on the e-portfolio learning approach have been conducted in the past decades.

The robust literature reviews show that e-portfolios provide a clear and authentic view of students' personal and professional achievements. For example, Graves and Epstein (2011, p. 346) stated that by using an e-portfolio, students “develop the skills of narrative to identify their strengths, enhance their professional development, and formulate a professional identity,” as well as gain digital knowledge and experiences. Learning theories and experiences, reflection processes and products all contribute to the formation of digital identity to some extent. From dimensions of learning approaches, student-centeredness, integration, transformation, activeness and collaboration will be explained respectively, which offer a solid foundation for the reflective learning and digital literacy catalyzed by electronic portfolios.

Efficient teaching, productive learning and effective assessment comprise major goals for all levels of education worldwide. Pellegrino (2001, p. 234) views that “learning is a process of continuously modifying knowledge and skills and that feedback is essential to guide, test, challenge, or redirect the learner’s thinking.” Learning is not an

outcome but a process in which the knowledge and skills are iteratively changed or improved to be more suitable and acceptable in order to make contributions to a reinforcement of authentic learning experience (Herrington, Reeves & Oliver, 2014), to assist in the improvement of graduate competencies (Housego & Parker, 2009), and in personal and professional development (Von Konsky & Oliver, 2012). In addition, Wenger (1998) makes the components of learning as experiencing the world meaningfully, mutual engagement in practice, the social configuration in the community, and changes in identity. The learning constituents emphasize integration, and it is shown to be crucial in the process and e-portfolios by Lorenzo and Ittelson (2005) because it can be value-added in relation to the learning process, and to student motivation in relation to authentic learning experiences (Tosh & Werdmuller, 2004). Prior knowledge or experiential learning bridges past learning experiences and make the goals and motivations for successive learning explicit beyond formal coursework if it is well-structured and effectively operated (De Santis & Serafini, 2015). In the experiential learning cycle theory proposed by Kolb (2014), learning is described as a process with four stages: concrete experiences, reflecting on experiences, abstract conceptualization and active experimentation. This emphasizes on before-and-after learning to demonstrate growth over time reflectively and positively, which tries out content mastery, integrative learning, and self-directed learning and supports a collaborative learning environment (Hmelo-Silver, Duncan, & Chinn, 2007). Integrative learning refers to “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 a new, complex situation within and beyond the campus setting by Reynolds and Patton (2014, p. 31). Here the context becomes unlimited to the classroom which overlaps with digital portfolio advantage “across courses, over time, between campus and community life” (Huber & Hutchings, 2004) through examining, selecting, curating, reflecting and demonstrating (Nguyen et al., 2014).

Theoretical Affordances of E-Portfolios

In the conceptual essence, e-portfolios play the role of the multimedia virtual environment in which students participate to demonstrate learning progress (Pitts & Ruggirello, 2012). From a practice view, e-portfolios give students the opportunities to connect authentic learning experiences and timely interaction, feedback,

assessment and future learning, where students build online communities of practice to learn from each other (Van Staden, 2016) outside of class. The prior knowledge is actively learned in a collaborative environment and transformed into a new knowledge structure in which reflection is the driving force (Mezirow, 2000).

Boud et al. (1985, p. 19) posit an approach to learning investigating connections known as reflective learning “those intellectual and reflective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations,” with emphasizing structure and practices of knowledge and skills. Since the significance of the reflective approach is acknowledged, reflection identifies meaningful learning (Moon, 2004). To enhance the value of reflection, e-portfolios enable the opportunities of added value in demonstrating how they make achievements. In other words, these documents enable learners to personally reflect and collectively share with peers and instructors. The links created by e-portfolios are noted by Kuiper and Pesut (2004) that effective thinking encourages students’ competencies, beliefs, philosophies and practices, hence they potentially view themselves as active and lifetime learning agents. In the assessment view, “portfolios achieve a goal that many other assessment methods cannot. They change the student role in assessment from passive subject to active participant as they are called upon to select samples of their classroom and cocurricular work products or artifacts for the portfolio and to reflect upon why these artifacts were selected and how they demonstrate learning” (Hakel, Gromko, & Blackburn 2006). This broader sense highlights the benefits of e-portfolios in the means of questioning learning content, learning approach and the reasons. One way is reflection, which can foster and increase links between what has been learned and what has been meant from learning (Dewey, 1997), being supported and enhanced by e-portfolios (Hakel & Smith, 2009). The opposite is true as well that digital portfolios are responsible to stress reflective thinking for academic growth. In light of significance, the models, components, levels, phases and structures all contribute to the complex conceptualization for the reflection framework.

Electronic portfolios are capable of increasing learner awareness of autonomy, reflection and goal setting by providing a more meaningful and informative, evidence-intensive alternative for profiling individual learning in the aspects of learning improvement and professional development as well as course evaluation or curriculum assessment (Fitch et al., 2008). Hence the e-portfolios are categorized into learning

e-portfolios, professional e-portfolios and assessment e-portfolios. Ravet (2005) identifies that electronic portfolios can be broken down into two main components, i.e. repository, which can be accessed by the owner, and the view, accessible to the audience. This is in line with Zubizarreta (2008) decomposition of learning portfolios into documentation, reflection and collaboration for the purpose of demonstrating the learning process.

E-portfolios and Engagement

e-Portfolios open up more opportunities for students' engagement in the learning progression. As this process uncovers, teachers make decisions together with students about where to go in the future. It supports the finding of Lo (2014) that more engagement with subject-specific learning is encouraged and hence the holistic approach to English language learning is promoted.

Compared with tests and examinations, e-portfolio assessment can be free from anxiety and constraints common in exam situations. Although the advantages of e-portfolio and assessments are well-acknowledged, the specific benefits of EFL settings are not. Empirical research on e-portfolio and assessments in context-specific, particularly at higher educational levels is needed. This supports the claim made by Lam and Lee (2010) to call for more research into how e-portfolio assessment positively and productively informs teaching and learning in the EFL context. In this point, an e-portfolio plays the role of the tool which enables learning-focused on process- or progressive-assessment. Aydin (2010) concludes that vocabulary, grammar and writing skills are developed by e-portfolio assessment. Active learning is usually connected with learning engagement (Peng, Wang, & Sampson, 2017).

The formative activities, including self-assessment, peer-assessment and feedback, are significant and common in e-portfolio assessment that is increasingly applied in EFL classroom settings and impacts language learning. Therefore, it is viewed to be formative in terms of learning progress (Jones, 2012). Gorlewski and Martinez (2010) make an argument that e-portfolio is overflowed but under-utilized. The question of how an e-portfolio can be fulfilled in the EFL context is critical.

The Present Study

Previous studies have not profoundly examined how e-portfolios with well-defined structure influence students' engagement. An in-depth

explanation of relevant terms of engagement has never been prioritized. More information on e-portfolios and engagement is also needed. This study aims to get a picture of different levels of EFL learners in their engagement with learning and to explore the structure of electronic portfolios as a strategy for enhancing learning. Therefore, this study was conducted to investigate the well-structured e-portfolios on students' engagement in learning activities as these activities consist of self-and peer-assessment. To guide the inquiry, the overarching research questions are formulated.

1. Is there any difference in perceptions of e-portfolios for foreign language skills in three cohorts of freshmen?
2. What are the factors which influence the capabilities of e-portfolios to deepen engagement?

RESEARCH METHODOLOGY

Previous studies mainly relied on qualitative methods but not on quantitative studies using validated questionnaires (van Dinther et al., 2015). Therefore, it is essential to explore more information about e-portfolios and engagement using validated questionnaires and mixed methods. This study used Utrecht Work Engagement Scale or UWES-S (Schaufeli, Bakker, & Salanova, 2006). There are in all seventeen items on a Likert Scale ranging from 0 (never) to 7 (every day).

Research design

An explanatory sequential mixed method including questionnaires and interviews was adopted to obtain data. The questionnaires and reflection data were analyzed using descriptive statistics and the qualitative thematic analysis technique respectively. This approach required quantitative data followed by qualitative inquiry (Creswell, 2017). Thus, a survey was designed to address the first research question and thematic analysis was enacted to answer the second research question. This research design offers group with engagement in creating e-portfolios. Moreover, the students were trained to collect qualitative information about interaction with e-portfolios. In this mixed study, two variables were explored, operational e-portfolios as the independent variable and students' engagement as the dependent variable.

Participants

A sample of 131 English as Foreign Language freshman students of non-English majors voluntarily participated in this research. The method of convenience sampling was employed to obtain an adequate sample size.

Data Analysis

We analyzed quantitative and qualitative data. First, the set of quantitative data was keyed into SPSS. In statistical analysis, the significance level was at .05. To address the first research question, descriptive statistics were initially conducted with frequency counted and interpreted, used to analyze responses to the questions of Likert-scale type from the survey data. For the second research question, it is indicated with active engagement in investing time and efforts within the e-portfolio structure.

RESULTS AND DISCUSSIONS

Results

The analysis results in terms of students' perception of their language skills and engagement is provided in Table 1 in the form of descriptive statistics consisting of only the mean of each group and the standard deviation.

Table 1. Descriptive statistics in terms of language skills and engagement

	<i>Mean</i> <i>(group1)</i>	<i>sd</i>	<i>Mean</i> <i>(group2)</i>	<i>Std.</i> <i>Deviation</i>	<i>Mean</i> <i>(group3)</i>	<i>sd</i>
listening	2.03	.635	2.05	.563	1.81	.424
speaking	1.88	.717	1.73	.625	1.65	.581
reading	2.13	.631	2.10	.674	1.72	.641
writing	2.05	.648	2.00	.610	1.71	.630
translating	2.21	.637	2.14	.531	1.87	.628
engagement	57.12	10.63	61.40	9.68	52.16	7.54

Table 1 shows that three cohorts of students thought speaking is the most difficult skill in their language learning (Mean=1.88, 1.73, 1.65) while translating skill is the easiest to use (Mean=2.21, 2.14, 1.87). Writing skills, listening skills and reading skills are ranked second, third and fourth hinder in the foreign language learning process. The findings

indicate that students should engage more in speaking and writing whereas other skills are not to their advantage according to the mean scores, under-or around-2.0. Standard deviation measures the dispersion of a dataset relative to its mean. Group one shows greater variances among students in their listening, speaking, writing and translating language skills learning whereas group was two more distinctive in terms of reading skills. The third group performed fewer gaps among individual learners in those language skills. It is suggested that all three cohorts of students were consistent in perceptions of levels of language skill learning. Further, group three had the great potential to develop electronic portfolios according to their intra-coherence in language abilities.

As to student engagement, all three groups were different in levels when they are involved in learning (See Figure 4). Group one took the highest mean scores while the third group did the lowest (Mean=57.12, 9.68, 7.54). The disparity degree within each group was also differentiated from groups 1-3 (SD=10.63, 9.68, 7.54). However, the third group members tended to be at a similar level of engagement. It is consistent with the results of self-assessment.

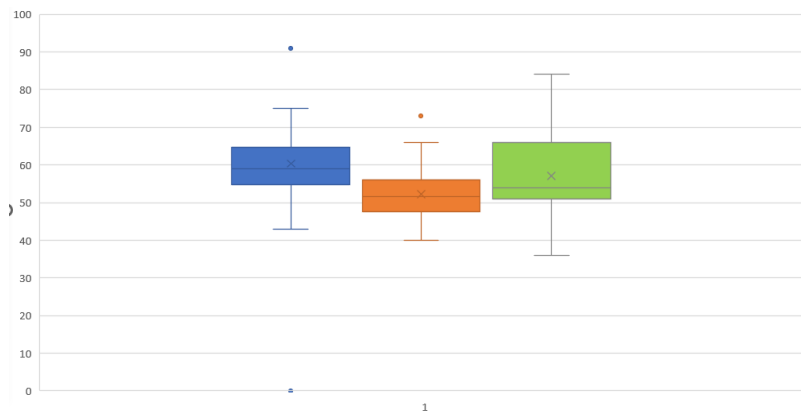


Figure 4. Different levels of engagement

In terms of self-assessment and engagement, there was a correlation between the variables. The latter is critical with the purpose of encouraging students to engage in classroom learning experiences, offers essential feedback information to teachers about the level of engagement, and thus is regarded as multiple tasks to be attained by students for self-appraising their own learning. Moreover, collaborative groups working on projects are realized. The relations play a strong role

in students' engagement, not only between students and teachers, but also recognition from teachers.

Discussion

The results show that there is no difference among EFL students' perceptions of language skills. It was also indicated that self-assessment plays an essential role in engagement. The findings are similar to the seven principles of active engagement proposed by Nicol and Macfarlane-Dick (2006): clarified good performance, facilitated self-assessment, high-quality feedback, encouraged dialogue between teachers and students, positive motivation and self-esteem, opportunities to close gaps and improved teaching. Self-assessment plays an essential role in engagement.

Previous studies exhibit academic performance can be improved via engagement in learning core concepts (Morales, 2017). The term self-assessment ability is an essential component of learning (Nilson, 2013); key competence to critical thinking and action to attain the desired results (Metz et al., 2021); the practice of self-assessment ability could encourage motivation and higher achievement (McMillan & Hearn, 2008), thus improvement in self-assessment ability is the key to better performance and higher achievement. However, a majority of students were instructed by passive teaching which shows a lack of applicability of self-assessment. Further, Metz et al. (2017) reported that students were unskilled in applying and scoring criteria for self-assessment. Meanwhile, there is no current information on the effects of engagement and self-assessment combined with e-portfolios in EFL settings. The findings from this study address the gaps in research. Students need to learn how to perform self-assessment to deepen engagement in e-portfolio-based learning. Multiple teaching methods have been proven valuable in providing an abundant learning environment in which deeper engagement, student-centric and self-regulation are facilitated. The way to execute these techniques is realized by embedding diversified learning tasks and activities within the learning settings (Freeman et al, 2014).

The well-designed e-portfolios have multiple capabilities of incorporating further achievement, more engagement, and enhanced capabilities to reflect across learning experiences. Learning could be enhanced by the thoughtful development of guided and conceived e-portfolios and active engagement in making the e-portfolio learning meaningful. However, the application is spotty and sparse for only a

quarter reported their engagement with e-portfolios in over half of course learning. Based on the comprehensive framework, reflection strategies can be broadly categorized into evidence-based strategy and cognitive strategy. The former falls into reflective journaling (Mackinlay & Barney, 2010), logs and portfolios (Moon, 2004), structured papers (McGuire, Lay, & Peters, 2009), group memory work (Ovens & Tinning, 2009) and interviews, while the latter is proposed by Janssen, de Hullu, and Tigelaar (2008) that “reflecting on positive experiences instead of problems.”

As for another component, collaborative learning benefits from the ease of use (Mobarhan & Rahman, 2014) of e-portfolios among students, students and instructors, and can be widely and effectively applied to different levels of education and age groups. More cooperation is supportive of the fundamental components of documentation and reflection in constructing learning e-portfolios.

It is obvious that electronic portfolios are well designed with internal and external factors concerned with learners as well as socially interacting, mainly categorized into documenting and reflecting learning process, and collaborating with peers and instructors. This study found that the constructs of well-designed e-portfolios show that learning interest, learning length, learning strategy, learning environment, reflection and group work all contribute to the promotion of EFL learning via the application of e-portfolios. It is in line with suggestions from Pippa Hall, Anna Byszewski, Stephanie Sutherland, and Emma J. Stodel (2012) that skills improvement, group discussion, and reflective thinking together with feedback should be incorporated. Gemma Tur, Santos Urbina and Dolors Forteza (2019, p. 29) find that “joint work with process e-portfolios and formative assessment contributes to fostering student autonomy, increases their engagement and self-awareness of their abilities and strategies as well as difficulties”. A Transparency Framework developed by National Institute for Learning Outcomes Assessment falls into components of evidence and statement of learning and using, assessment resources, plans and activities. Compared with the point made by Ravet (2005), e-portfolios are combined of course-related assignments and reflective practice in archives, views from instructors and peers, services to build and explore archives and views, such as assessment and professional development. What makes an e-portfolio effective in learning and assessment is the pedagogy in which it is scaffolded. Meanwhile, identity negotiation and construction shifted focus from an instructor-driven path to a student-

centred approach that promotes collaboration, reflection and creation for the reason that in the teaching and learning process, the assignments given by teachers are purposeful but not creative. However, the pedagogical approach assimilating e-portfolios makes its implementation more realistic, and pedagogy with electronic portfolios can be used to design its artefacts. The conceptual framework of e-portfolio assessment is illustrated in Figure 2.

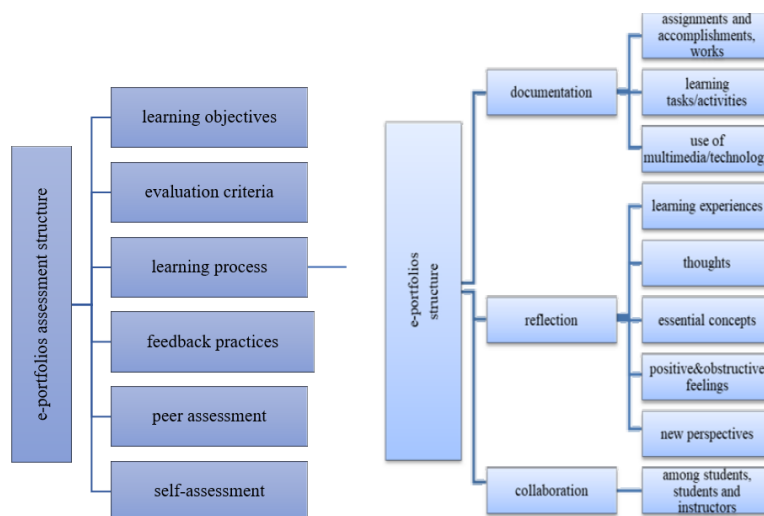


Figure 5. Preliminary structure of e-portfolios

The Figure shows that the electronic portfolio is conceptualized into a frame with three main parts, including the e-portfolio itself with students' personal files designed, course-related artefacts, reflection notes according to the learning objectives and feedback comments from peers and teachers. As the learner-centred evidence, their e-portfolios are guided by content and structure as shown above which articulates a section of a conceptualized framework of e-portfolio-based assessment. Course-related artefacts consist of knowledge, skills and multimodal assignments demonstrating language performance and competence. The reflection part summarizes learning experiences with clarified learning objectives at the initial phase of classroom instruction embedded with electronic portfolios and formative assessment techniques. This structure is assessed and evaluated in a formative way by qualified lecturers in language teaching and assessment as well as digital tools.

CONCLUSION

This study was conducted to investigate the well-structured e-portfolios on students' engagement in learning activities as these activities consist of self-and peer-assessment. With a perfect structure, demonstrating learning achievement and reading skills improvement needed, e-portfolios may provide students with opportunities for active engagement and self-assessment with the help of feedback both from teachers and peers. The findings showed that there is no difference between EFL students' perception and language skills. It was also indicated that self-assessment plays an essential role in engagement which informs constructs of e-portfolio. Further, a wider range of information on e-portfolio structure to deepen engagement was constructed. The conclusion profoundly informs and implicates instructional design and pedagogy in further study. For deeper engagement, the challenges must be identified to match current capabilities. The implication of this study may tentatively enlighten the teaching design and pedagogy innovation in further study.

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APPENDIX

英语学习总结与反思

1. 本学期个人学习档案的建立对你的英语学习有什么帮助?
2. 请回想本学期内, 在你设计完成并上传自己的电子版作业时, 对你来说最有挑战的方面是哪些? 请具体说明。
3. 本学期的英语学习中, 听、说、读、写、译四个方面你认为自己提高最多的是哪个方面?

English version:

ENGLISH LEARNING SUMMARY AND REFLECTION

1. How do e-portfolios this semester help you in your English learning?
2. In this semester, what was the most challenging aspect for you when you made and uploaded your e-portfolios? Please be specific.
3. In studying English this semester, which aspect do you think you have improved the most? Is it listening, speaking, reading, writing or translating?