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Reflection of Pre-Service ESL Teachers on Using e-Portfolio in Teacher Education

Mahbub Ahsan Khan and Tahmina Hoq

Abstract

Since the last decade of previous millennium e-portfolio has become a frequent topic of discussion in teacher education contexts. It is seen as one of the prominent innovations in educational technology that demonstrates teachers' tangible development of competencies over time. Vast amount of literature is available that document the relative advantages and consequent advocacy for its implementation across disciplines, institutions, and applications. In Malaysia, research on e-portfolio is sparse, and particularly in pre-service teacher education it has never been explored. This article describes the findings of a qualitative study examining fifty-five pre-service ESL teachers' learning experiences while they created e-portfolios as a part of their course requirement at Universiti Sains Malaysia (USM). Data was collected through structured surveys. Findings indicate that most of the participants perceived the process of reflecting on course objectives contributed to their growth and development. Participants also reported several drawbacks of e-portfolios which are required to consider for its successful implementation in teacher education of Malaysia.

Keywords: e-portfolio, pre-service teacher, development of skills, challenges of e-portfolios

1. Introduction

During the last two decades of previous millennium, the world has experienced two significant movements in teacher education. The first is the change in thinking toward alternatives, which bifurcated from the immense dissatisfaction on traditional paper-pencil tests, questionable utility of top-down teaching learning, absolute dependence on quantitative test scores and its inadequacy to assess teachers' actual competencies [1]. The second trend, which is the paradigm shift from teacher-centered to student-centered teaching and learning [2] that came about because of the necessities of functioning in knowledge economy, changing nature of future teachers' roles, obligation of continuous learning and, consequent integration of ICT within curriculum [3]. Both paradigm shifts yielded enormous reforms in teacher education and one of them is the introduction of the 'e-portfolio' as an alternative, useful and meaningful form of learning tool and assessment. Teachers' professional development endeavor, various documents and learning artifacts can be better managed, organized, documented, and presented in e-portfolios and its benefits to learning including visible learning through written reflection, promising

in-depth thinking [4] have accredited the use of e-portfolios. Technologies used in portfolio shares considerably basic characteristics and can vary depending on design, openness, sharing capabilities, and learning curve for usage [5]. Additionally, the level of implementation of e-portfolios and the buy-in from users (i.e., educators, administrators, and students) can differ across institutions. Thus, this widespread and divergent application of e-portfolios requires examination in specific contexts; or else, it may turn into a platform of 'self-advertisement' [6], 'scrapbook of teaching memorabilia' [7] or 'yesterday's unsuccessful idea' [8].

2. Literature review

E-portfolio is a purposeful collection of work, captured by electronic means that exhibits individuals' efforts for learning, reflection, and management of learning artifacts and faculty feedback [9–11]. [12] noted that it must be goal-driven with organized collection of materials which demonstrate expansion of knowledge and skills and can be observed over time. Thereby it allows to figure out artifacts and make connections of reflections supported by peer and instructor feedback [13, 14]. Thus, in line with the objectives of offered face-to-face course or program, teachers can collect, select, reflect, and present professional materials in a pre-determined online platform using multimedia technologies that serves as a mechanism through which educators can facilitate and monitor student learning outcomes [15].

Several researchers advocate introducing e-portfolio for different reasons— easily assessable with the ability to store multiple media and easy to update [16], means to enhance ICT competency [17], promote self-directed [18] and deep learning [19], augment mentoring and e-collaboration boost self-confidence ([20] and enhance language and communication skills [16]. It enhances learning by assisting its creators to reconstruct personal teaching practices, reflect on it in multiple learning contexts [20], to document and unfold learning process in the learning experiences [20]. In this new millennium, researchers from this region are becoming compelled by its potentiality. However, the pulsation of e-portfolio has not touched widely in Asia and relatively little is known about its uses. Particularly, in Malaysia, e-portfolio (either paper-based or electronic) is “never been heard of nor reported” ([21], p. 90).

2.1 The study

English is considered as the 'main determinant' of Malaysia's development as it is used as a second language (L2) [22]. Malaysia is one of the Asian countries that is adopting a bilingual system of education [23]. Despite that, daily discussions in print and electronic media indicate a doubtful picture about pre-service ESL teachers' proficiency in English. Such situation demands pre-service ESL teachers' re-skilling or up-skilling of competencies as they are entrusted to transform school students into a knowledge driven society. To give them a meaningful purpose of learning and, utilize, explore, and discover the e-portfolio as an instrument, this study extends the literature on e-portfolio implementation by examining the possibilities and challenges of it to enhance the development and growth among pre-service ESL teachers. Such an understanding from the perspective of teacher and to improve communication among them develop virtual community of practice [24].

In other words, e-portfolio use data can be pooled to promote quality e-portfolio practice and implementation in higher education. Therefore, the research question, specifically, 'how pre-service ESL teachers perceive e-portfolio for their development and growth' was framed for investigation.

3. Method

55 Pre-service ESL teachers who were majoring in TESOL at the University Sains Malaysia (USM) participated in this study. Participants were randomly divided into nine groups (on average six members in within each group). As a prerequisite, they developed Community of Practice [25] the group members and created individual e-portfolios. The course *PET301* (Teaching of English through Literature) and *Google Group* were considered as the face-to-face and online setting, respectively. They were required to post Weekly Journals (RJ) in line with the course contents (domain). Furthermore, participants (members) were required to engage mutually to look over others' RJs, examine with an eye of criticism, and write critical reflection as Discussion Journals (RJ) mentioning individual opinion (practice). Qualitative data to explore challenges was collected from these sources. One questionnaire was used as a means of collecting quantitative data. It consists of three parts that corresponds to the main aspects of this study including the participants' perspectives toward e-portfolios, its contribution in their development and growth. Moreover, participants' perspectives section has two parts namely purpose of creating e-portfolios and general perspectives toward e-portfolios. Development and growth section were constructed with four sections—language, assessment, learning and pedagogy. Participants were asked to provide responses within a five-point range from 5 (Strongly Agree) to 1 (Strongly Disagree). Reliability of this instrument was established through a pilot study. The Cronbach Alpha is shown in **Table 1** (results of Reliability Analysis) which confirms the issues consist high levels of reliability and are well above the cut-off value of 0.70 as suggested by Nunally [26]. Data was collected at the end of the course and then it was reduced by measuring mean and standard deviation, and afterward, presented in tables and graphs. SPSS (version 12) was used for this.

A lecture session was arranged at the beginning of the semester to orient them with the concept and demonstrate the procedures of creating e-portfolio. For the Internet connection, weekly tutorial sessions (one hour each) were arranged at the computer laboratory. The Course Instructor (CI) played the role of *E-moderator* [27] when participants were making wrong conceptualization or deviating from the main discussion or even when decision-making was required in debatable issues.

Data collection period was limited within one semester (fourteen weeks). Content of the e-portfolios (Reflection Journals) were considered as the source of data. In addition, nine interviews (each from one group) were accomplished for data triangulation and gain insights of interesting or unexpected findings and understand how and why they came to that particular perspective. Participation was voluntary and group members themselves selected their representative for interviews. Data from the interview also served to explore challenges. By examining relevant contents data was organized, broken into manageable units, synthesized,

	Issues	No of Items	Cronbach Alpha
Perception	General perspective toward e-portfolios	14	.94
Development and growth	Language	06	.94
	Assessment	05	.93
	Learning	06	.91
	Pedagogy	04	.92

Table 1.
 Reliability of the instrument.

and reduced under different themes. A coding system was used to single out the participants (e.g., A1-- where A refers to the 'Group A' and 1 is the first participant) and data source (RJ refers to the participants' discussion and In for the interviews). For citation, data code and participants' code were used together (e.g., RJF4- reflection journal of fourth participants of group F, InH5- opinion of fifth participant of group H in interview). For qualitative data analysis, as described by Creswell [28], three general processes were followed: preparing and organizing the data, reducing the data into themes and representing data in discussions. Quantitative data of was reduced by measuring mean and presented in tables and graphs.

4. Findings

The survey questionnaire was divided into two sections which are actually in line with the underpinned research questions—participants' perception toward e-portfolios and their development and growth. Perception toward e-portfolios is presented in two parts: firstly, the general perceptions toward e-portfolio (**Figure 1**) and secondly, the perceived development (**Figures 2-4**) and challenges of creating e-portfolio (**Figure 5**).

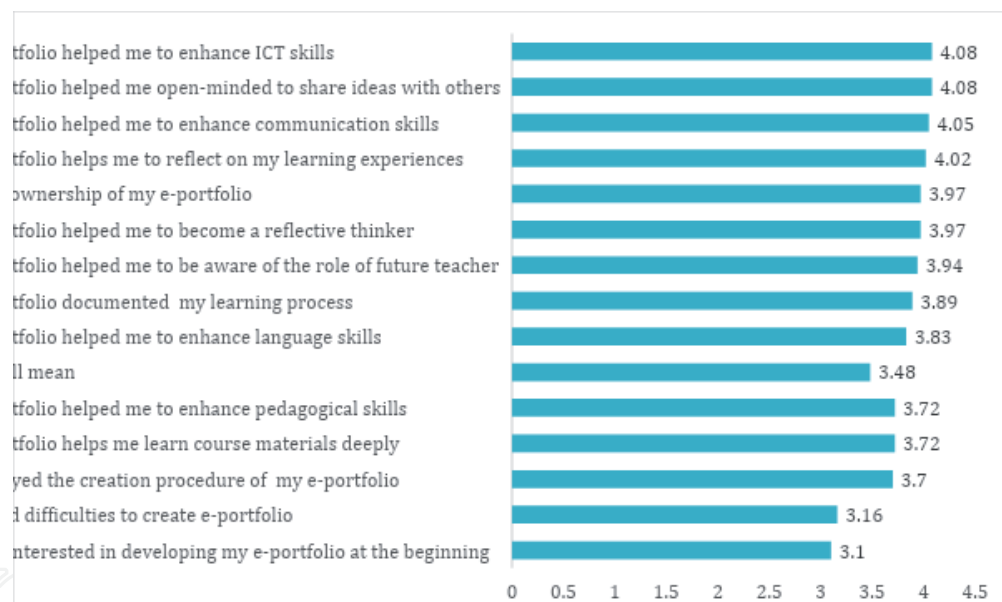


Figure 1.
General perceptions toward e-portfolio.

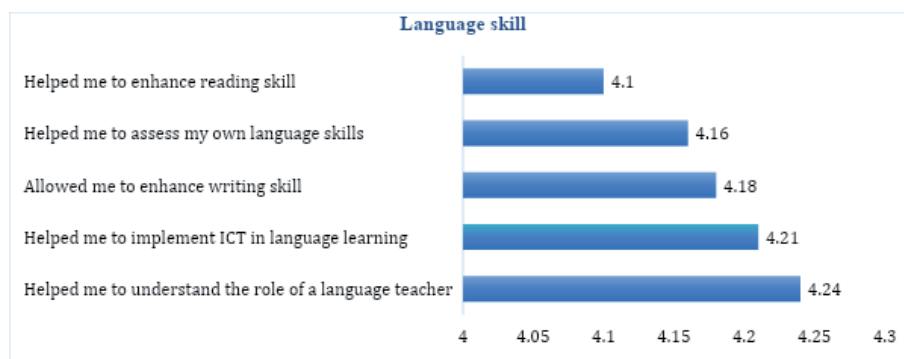


Figure 2.
Development of language skill.

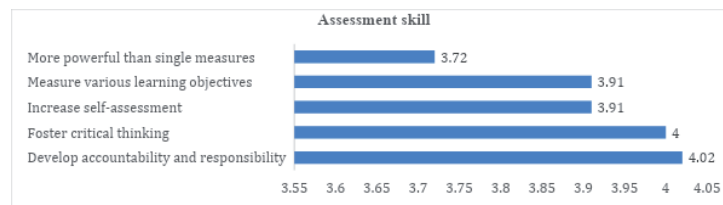


Figure 3.
 Development of Assessment skill.

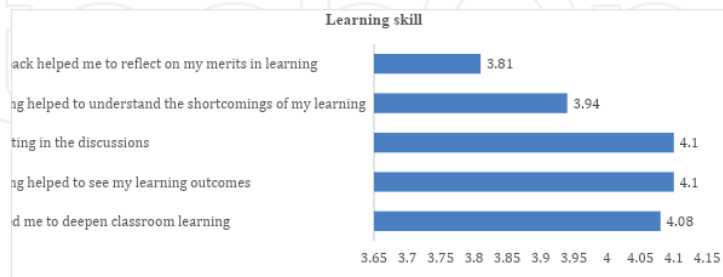


Figure 4.
 Development of learning skill.

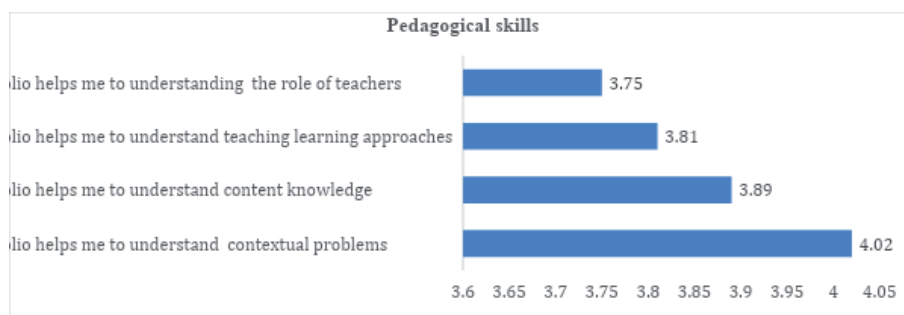


Figure 5.
 Development of pedagogical skills.

4.1 General perceptions toward e-portfolio

The **Figure 1** shows the mean score for each of thirteen items which ranged between 3.1 and 4.08. The overall mean 3.48 indicates that participants generally perceived e-portfolios positively. It can be noted that the score in ‘enjoyed the creation procedure’ is slightly higher than in ‘felt interest’. The mean scores for the responses indicate that pre-service ESL teachers felt comparatively less interested to develop e-portfolios at the beginning (Mean 3.1). From such comparison, it can be assumed that participants felt agony at the early stage due to unfamiliarity with the e-portfolios and difficulties to connect it with the course outline. Moreover, they faced difficulties (Mean 3.16) to create e-portfolio as well. However, they took the e-portfolio project as a challenge, and later, enjoyed the creation procedure (Mean 3.70).

E-portfolios helped them to reflect on their learning experiences (Mean 4.02), share ideas open-mindedly with other participants (Mean 3.94) and, in turn, to become reflective thinker (Mean 3.97). In such way, e-portfolio facilitated the pre-service ESL teachers to learn course materials deeply (Mean 3.72). Data also confirmed that developing e-portfolio enhanced language skills (Mean 3.89), ICT skill (Mean 4.08), communication skill (Mean 4.05) and pedagogical skill (Mean 3.72). E-portfolios were not only considered as a tool for learning but also to document

the learning process (Mean 3.89), which made them aware about the readiness as a future teacher (mean 3.94). It resulted in the feeling of ownership among participants (Mean 3.97) after the e-portfolio project was finished.

4.2 Perceived development

Participants claimed that e-portfolio certainly significantly contributed to their language, assessment, learning and pedagogical skills.

4.2.1 Development of language skill

Particularly for the enhancement of linguistic ability, the mean score of participants' responses is more than four in each case (**Figure 2**). Therefore, it can be claimed that creation of e-portfolio allowed the participants to implement ICT in language learning (Mean 4.21) which enhanced their reading (Mean 4.1) and writing skill (Mean 4.18). They were also able to assess their own linguistic ability (Mean 4.16) which led them to understand their role as language teacher (Mean 4.24).

4.2.2 Development of assessment skill

Regarding assessment participants considered e-portfolio as an effective tool as well since it can develop accountability and responsibility (4.02) to measure various learning objectives (Mean 3.91), increase self-assessment (3.91) and critical thinking (4). As such, participants perceived that e-portfolio is more powerful than single measure (Mean 3.72).

4.2.3 Development of Learning skill

During the e-portfolio creation procedure, participants browsed the e-portfolios of most of their classmates (3.56) which helped them to reflect on merits (3.81) or shortcomings (3.94) of postings. Such process gave the participants opportunity to examine individual learning outcomes (Mean 4.1) and later, deepened classroom learning (Mean 4.08). Most importantly, participants enjoyed such learning strategy (Mean 4.1).

4.2.4 Development of pedagogical skill

In addition, it was also supposed that pedagogical skills were enhanced through e-portfolio since assisted them to understand content knowledge (4.08), teaching learning approaches (3.81), contextual problems (4.02) and the role of teachers (3.75).

4.3 Challenges

Apart from the development and growth, participants also claimed that they have faced several challenges to use e-portfolios which include internet connection, workload and time constraint, quality of contribution, and value issues.

4.3.1 Internet connection

Among the challenges, lack of access of Internet connection was identified and opined as the most crucial, because “not all students have computers, needless to

say access to the Internet” (RJA2). For example, it was claimed “Internet connection was a big problem”, and therefore, “some students might not have the convenience to go online to the website freely” (RJA5). Although participants agreed that it cannot be blamed as the disadvantage of e-portfolio (RJA5), however, for the meaningful execution of any ICT-based appliance these two are the primary requirement (InA2). Such situation hampered the participants to upload their work timely (RJA4) or make e-portfolio going as fluent as they wanted. This was particularly true for the participants who resided in the campus and relied on the wireless connection provided by the University. They argued that CI may think it as a ‘dummy excuse’, but for them it was ‘more than annoying’ reality (RJH1). One participant expressed her annoyance “the only challenge that I had is the wireless connection, it is irritating. I was typing so fast and when wanted to post my view the internet connection is gone” (RJA1). To upload the RJs, such situation was endurable since they could “write it down first and then just cut and paste it” when they were online (RJE6). Participants were required to find place to be online (RJB7), awake till midnight to upload materials (RJE6) or even did not depend on the university server (RJC4). Such frustrating situation led them to state “I wish if we can just print all the RJs and save all the disappointment(s)” (RJH3). Such lack of Internet access “definitely reduced interest” (RJC5) and inculcated their enthusiasm to accomplish works through the e-portfolio (RJF1).

4.3.2 Workload and time constraint

Participants revealed time constraint is another challenge to make the e-portfolio effective. Although it was agreed that the “concept of e-portfolio is nice” (RJB7), but ‘after several weeks of uploading files, posting RJs and RJs’, it was claimed that ‘e-portfolio is time consuming phenomenon’ (RJA2). One participant explained:

I was required to post RJs and RJs on time. To do this, I need to get extra time to post comments and discussions. Besides, e-portfolios require me to do extra research to write. I need extra time to search extra information and complete RJs (RJE1).

Therefore, using e-portfolios became a durable task as they had to care for other RJs ‘with equally heavy workload and mark allocation’ (RJA2). One participant stated, “when many assignments to submit I had no free time to open my e-portfolio” (RJI3). Awful internet connection made the process ‘tougher and harder’ (RJC3). As a result, to “complete the RJs was the big challenge” for them (RJD6). It was argued that the mark allocated for these tasks was comparatively nominal. One participant commented “the workload is quite heavy and time-consuming and deserves more percentage of mark” (RJE2). Under such circumstance it was perceived-- “it was too much to ask everyone to post at least one RJ per week” (RJB7) or “too many things to learn since it is the first time, we exposed to this” (RJG2). Since participants had ‘other commitments and workloads’ (InG1), quality of writing decrease. Therefore, one participant asserted-- “we had the tendency to just write for the sake of mark not with the willingness to write” (RJD6). Sometimes they “tend to beat around the bush, repeating and paraphrasing what others have said” (RJE1).

4.3.3 Quality of contribution

Participants noticed that because of reluctance or neglecting attitude toward responsibilities, few members remain passive and ‘cheat by not contributing at all’ or believed that “at least someone will contribute” (RJH3). It was argued that such

situation discouraged others' enthusiastic participation. For example, one participant stated "if our comments do not get response from others, it definitely reduces our interest... I felt same when some of my friends did not response to my comments" (RJC5). Moreover, there were students who "do not care about contributing ideas in e-portfolios" (RJF3) or their postings were not valuable for being discussed or debated (RJD6). For example, one participant criticized "many students are not serious when they reply to their comments and just send their comments because they are required to do so" (RJF1) or they tend to "agree and repeat other's points" (RJE6). It was realized that such kind of postings are useless and noted that "higher quantity does not imply decent quality" (RJE6). Hence, participants suggested others to rethink-- "am I posting the discussion just for the sake of posting" (RJC4) or "do we tend to emphasize on quantity of posting instead of the quality" (RJE6). However, few reasons were identified in this regard, firstly, there are students who do not have the ability to work independently (RJF3); secondly, they used the same source from Internet to get information (InA2); and thirdly, from the believe that CI would not be able to evaluate the large number of the postings within the time frame (InI4).

4.3.4 Value issues

Plagiarism is another issue that could hinder the quality of the contribution, participants supposed. It was unquestionably agreed that e-portfolio gives students 'freedom' to use Internet to collect information for educational purposes. But they noticed that "students might use this opportunity to simply copy and paste from the internet and use it as their own" (RJH2). It contradicts with the aim of using e-portfolio and they are 'actually not gaining advantages' from it (RJA4). However, such practice was not acknowledged, rather expressed their frustration "I thought that each and every of them did their job well without plagiarizing. But today I found one of my group mates is guilty... the moment you started reading, you can tell that it was not his work. I am disappointed and feeling sorry for him" (RJB7). Therefore, it was suggested, CI should remain more observant and needs to consider this issue while giving grades (RJA4).

5. Discussion and conclusion

Findings indicate that despite any prior experiences, pre-service ESL teachers perceived e-portfolios as a useful mediator tool to develop a CoP. They employed e-portfolios as the platform to reveal their voices, argue with their individual opinions, encourage others' works and outlooks, and provided suggestion for implication. Initially they took creating e-portfolios as an issue of enjoyable initiative. After becoming familiar with it they started to realize that e-portfolios could be a suitable platform to express their different ideas and individual opinions on an issue which they were not able to apprise in a face-to-face classroom where time and scope are limited. As such, these issues (domains) guided them to organize their knowledge and reflect on that. It helped them sort out what to share, how to distinguish trivial idea and which one had real promise. Such practice dictated them to develop a community within the participants. That is, domain denoted the topic participants focused on, the practice is the specific knowledge the community develops and shares. With the help of the shared practices participants were able to develop a commitment about its use in their future job. Wenger, McDermott and Snyder [29] claim that such commitment make a distinction between a community and just a group of friends. Hence, the pre-service teachers in this study have developed a

community of practice and functioned and contributed meaningfully to the causes of their online community, particularly in terms of sharing knowledge.

Findings also reveal that pre-service ESL teachers positively considered e-portfolios as a meaningful tool for the enhancement of competencies. However, similar to the previous studies relating to the pre-service teacher's language [18] and ICT development [16] participants of this study were also feeling frustrated at the beginning due to unfamiliarity with the tasks, later, after becoming confident to deal with, e-portfolios facilitated their development and growth in those areas. This study also corroborates the potentials of e-portfolios to develop an interactive environment for the enhancement of writing skill [30], stimulation of communication skill [16], online collaborative learning [31, 32]. Shy students who felt hesitate to participate in a face-to-face classroom, found it as more suitable way for learning English [18]. It enhanced their insights on drawbacks of traditional paper-pencil tests and developing awareness about the alternative assessment system like e-portfolio. Hence, not surprisingly, most of the participant became aware that this type of tool can contribute to enhancing the teachers' quality in Malaysian, and, therefore, felt motivated to utilize it in their future job. Such psychological advantage may assist them to foster a sense of pride on their personal work and feeling of satisfaction [33]. Such kind of positive feelings is crucial since the use of e-portfolios in educational settings is not a common practice in Malaysia.

Besides this worthwhile and fulfilling learning experience, there are a few drawbacks that need to be addressed. The most damaging issue, if left unattended to is the issue of Internet connection. For the e-portfolios to be successfully implemented, the Internet connection must be available to the participants, fast, consistent, and reliable. Notably, the issue of the online platform is crucial for the successful e-portfolio implementation. Stefani, Masson and Pegler [8] describe four types of commonly used online platform for e-portfolios (1) commercial software (2) institutional (3) open-source e-portfolio software and (4) open-source common tools. This study used open-source e-portfolio software as the online platform. However, each of these options has few pros and cons [8]. Hence, determination is required which type of online platform is more suitable in Malaysian context in line with the expense, participants' capability, and their necessity.

Another concern that was voiced by the participants is the need for a structured and comprehensive training on how to create e-portfolios. Indeed, training is required, since creating e-portfolios is described in literature as a 'daunting job' (Barrett, 2001 cited in [34]) or not a 'simple undertaking' [35]. But before that, policy makers need to take a methodical and organized planning how and for what purposes e-portfolios will be implemented, such as product/ process/showcase, long term/short term (k-12, pre-service, in service), voluntarily/mandatorily, formal accreditation/informal documentation, institutionally or else as a whole. After addressing such questions training can be arranged to ensure its systematic use. Careful planning is also crucial as the lack of time ([36]) and redesigning of course objectives in line with the e-portfolios [8] are two seriously hindering factor that could jeopardize the whole initiative. Most importantly, despite ample promise e-portfolios sometimes ends with "limited success" due to "lack of stickiness" ([37], p. xxxiii). Hence, regular updating is imperative to reap the actual benefits from e-portfolios. Course instructors' role is vital in this regard. They are required to provide 'quality and quantity support' ([32], p. 1139) through frequent interaction, recognizing the strengths and weaknesses of individuals, encouraging to constructive use, monitoring participation, and providing formative suggestions.

This study reveals that meaningful utilization of e-portfolios in pre-service teacher education may confer additional dimensions in the efforts of contemporary web-based language learning in Malaysia. It can be a useful tool to enhance

ICT competencies, delivering linguistic exercises, access authentic materials, communication, carry out projects, share opinions and ideas, and work in collaborative and co-operative ways among others. However, this study was limited within a narrow context and does not allow for a generalization of findings. But this study provided an important contribution to the literature on e-portfolio since it synthesized the baseline understandings on the issues of pre-service ESL teachers' perceptions toward e-portfolios and how it contributed to their development and growth in a context like Malaysia where using e-portfolio is not a widespread practice. The methodology used in this study can also provide insight to motivate and coach teachers to become more reflective and active participants in their learning processes. Developing countries like Malaysia who are intending to persuade e-portfolios in educational settings may get an insight from this study.

However, it could be noted that, for an extensive implementation such baseline understanding is not sufficient since a lot of issues remained unanswered in this study. New technologies are constantly changing and influence the way we learn and teach. Teachers' capacities to deal with such change, learn from it, and help students learn from it are critical for the future development of societies. Hence, teacher education programs need to adapt the rapid changes of new technologies and stay aligned with contemporary era. Otherwise, such recent technologies may itself create barrier in teachers' development, instead of making them capable. Further research and experimentation in TESOL as well as other contexts and disciplines is required to examine its feasibility and implement process from different views to establish it as a new pedagogical and technological fad in the developing countries as well as in Malaysian context. Since, the present efforts of the governments, in general, are confined to the quality in education, findings from the study may assist the policymakers to initiate necessary steps to reconsider and modify the conventional practices of teaching-learning and assessment. Teacher training institutions can also implement e-portfolios in line with the specific needs in a local context or as a part of certification in not only pre-service but also in-service teacher education.


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