Exploring the Impact of e-Portfolio on ESL Students' Writing Skills through the Lenses of Malaysian Undergraduates

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Abstract

This study explored the impact of implementing e-Portfolio as an assessment tool at a public university in Malaysia. It aimed to investigate how the use of the e-Portfolio in an advanced English course contributed to undergraduate students' writing skills. A case study approach was applied whereby open-ended questionnaires and interviews were used to collect qualitative data. A total of 46 students participated in the study. All 46 students answered the questionnaires and 18 of them volunteered for interviews. Online discourses were also included to support the findings where relevant. The data were imported to NVivo 12 and thematic analysis was used as the primary method of data analysis. The findings demonstrated that the use of the e-Portfolio with emphasis on feedback and communication, artefacts and reflections, and peer review contributed positively to the students' writing skills. Instructor feedback and communication enabled the students to receive detailed information to improve their writing. The inclusion of artefacts led the students to better understand their work and promote reflective practice. Peer review allowed the students to obtain peer support and explore others' work. The study demonstrated that e-Portfolio is a relevant tool that can provide an enhanced assessment experience for second language learners.

Keywords: e-Portfolio, Academic Writing, Assessment, ESL

Introduction

The English language's impact on employability in Malaysia was revealed in a study whereby employers ranked the ability to write and converse in the language as the two most important graduate skills (Hamid et al., 2014). Another study found that employers preferred candidates who demonstrate better language accuracy (Zainuddin et al., 2019). Although the English language is important for occupational and academic pursuits, its mastery remains a challenge for second language learners. The Malaysian Employers Federation (2016) reported

that a mismatch persists with low English proficiency being cited as one of the Malaysian graduates' primary weaknesses in job-seeking.

Good academic writing is a valuable skill in tertiary education. Many Malaysian students, however, struggle with academic writing due to the contrasting demands between secondary and tertiary education (Musa et al., 2012). Apart from the fact that the conventions of writing for academic purposes are distinctively different, doing so in the students' non-native language makes the task even more challenging. A study discovered that a group of Malaysian undergraduates who majored in English had difficulties writing the introduction for their project reports (Maznun et al., 2017). On the other hand, it was revealed that low proficiency university students perceived writing as the most demanding skill in learning English (David et al., 2015). The studies indicated that academic writing is a challenging task for non-native speakers in Malaysia.

As a result of reviewing the English language teaching and learning practices in Malaysia, Musa et al. (2012) stated that the present education system hinders students from becoming autonomous learners due to the "teach to the test" syndrome. Aravind et al. (2019) criticised the present assessment and syllabus as standardized and neglectful of learning. This concern was similarly expressed in a study conducted at a Malaysian university which stated that assessment is perceived as a measurement of how much learning is done instead of how much help is needed (Lee et al., 2010). Acknowledging the interdependent link between learning and assessing in English language courses, the Malaysian Ministry of Higher Education (MOHE) proposed the Malaysia English Assessment (MEA) which delineates an ecosystem that can be used to measure university students' English language proficiency (MOHE, 2017). MEA advocates assessing across formal and informal contexts and utilizing various resources, for instance, using online resources with learners on and off campus. As such, English language assessments should no longer entail conventional methods for measuring proficiency.

Technology has much to offer, especially in providing innovative methods for language testing that was previously unavailable. One example of a technology-enhanced assessment tool is the e-Portfolio (electronic portfolio). In Malaysia, studies on the use of e-Portfolios include using e-Portfolio to improve pre-service teachers' professional development (Kabilan, 2016); to develop soft skills (Khoo et al., 2019); and to enhance Information and Communication Technology (ICT) and English language skills among Teaching English as a Second Language (TESL) undergraduates (Thang et al., 2012). These studies indicated a growing interest to apply e-Portfolio in Malaysian universities. Nevertheless, research focusing on e-Portfolio for academic writing among second language learners in Malaysia remains relatively limited and unexplored. Hence, the present study intended to fill this gap and contribute to the field of academic writing.

At Universiti Malaysia Sabah (UMS), paper portfolios have been implemented as part of the course assessment in an academic reading and writing course. The researchers in this study, therefore, saw it as timely and relevant to introduce the e-Portfolio in lieu of the conventional portfolio. This is following the priorities that were cited in the Malaysia Education Blueprint 2015-2025 (Higher Education) in which "ICT-enabled learning" was highlighted in Shift number nine out of the ten shifts (Ministry of Education, 2013). Apart from that, the MOHE (2011) proposed for e-assessment to be fully implemented from the year 2015 onwards. Another educational shift that is parallel to the implementation of the e-Portfolio is the Ministry's emphasis on alternative assessment as part of the initiative towards a future-ready curriculum (MOHE, 2018). E-Portfolio was mentioned as one of the innovative approaches to better equip university students for the Fourth Industrial Revolution (MOHE, 2018). As a result, the introduction of the e-Portfolio in the course UB00402 Academic Reading and Writing was opportune. This study, therefore, investigated the impact of the e-Portfolio on the academic writing skills of Malaysian undergraduate students at a public university. More specifically, the research question that the study attempts to answer is: How does the e-Portfolio contribute to second language learners' academic writing?

Academic Writing

In tertiary level institutions, writing is a universal and significant channel for communicating disciplinary knowledge. However, the mastery of writing may be more demanding for non-native speakers. A researcher who explored second language learners' self-concept in academic writing noted that Malaysian students have individual needs that require personalised and constructive feedback (Badiozaman, 2015). Another study that implemented collaborative writing in the course English for Academic Purposes discovered the tendency to use the first language among the respondents (Shafie et al., 2010).

Researchers have since come up with innovative methods to aid the mastery of academic writing among second language learners. Lee et al. (2016) created an online writing platform called The Writing Portal (TWP) to support the writing needs of pre-service teachers. Using communicative channels and learning resources to promote collaboration, TWP was able to support the participants across all stages of the writing process. The use of social networking tools such as Facebook (Yunus et al., 2012) and Instagram (Akhiar et al., 2017) to develop writing skills has also been explored. These studies have successfully tapped into students' preferences to learn English using multimedia resources in an online environment. This indicates that online writing is an approach worthy of exploration since it mirrors the actual present-day situation of communicating.

e-Portfolio

An e-Portfolio comprises an individual or a group's collection of evidence, demonstrating their abilities and attainments, and can be stored on a website or a portable storage device (Challis, 2005). The digital format of the e-Portfolio makes it more portable and accessible; this means that data and evidence related to assessment can be distributed effortlessly and widely to stakeholders with an interest in the learners' language competency (Stannard & Basiel, 2013).

Researchers at *Universiti Kebangsaan Malaysia* (UKM) have looked into the implementation of e-Portfolio to enhance Information and Communication Technology (ICT) and English language skills among Malaysian undergraduates (Thang et al., 2012). The findings revealed that the students gained in writing, technology, and problem-solving skills. Another study involving 45 undergraduate students in Thailand implemented a Weblog-based e-Portfolio to develop the students' writing ability in English (Kongsuebchart & Suppasetseree, 2018). Based on the comparison of pre-test and post-test scores, the students exhibited improvement as their post-test mean scores were significantly higher. Albeit based on diverse settings and groups of learners, the use of e-Portfolios in the aforementioned studies demonstrated encouraging results in the development of writing skills.

The use of e-Portfolio without sound planning and theoretical basis may render it a mere online repository. In addition, there exist a wide variety of e-Portfolios that cater to students, teachers, and institutions (Lorenzo & Ittelson, 2005) and functions for storage, workspace, and showcase (Mohamad et al., 2016). This study, therefore, implemented a specific e-Portfolio that functions as an assessment tool for second language learners with a focus on the skill of academic writing.

e-Portfolio Theoretical Framework. The e-Portfolio in this study has footings in three theories: assessment for learning, the process writing approach, and the theory of constructivism.

Assessment for learning emphasises the importance of informing learners about their progress and allowing opportunities for improvement (Stiggins, 2005). Timely communication of feedback via the e-Portfolio can, in turn, create opportunities for students to discuss progress, seek advice, and make revisions. With e-Portfolio, instructors and peers can promptly provide feedback and comments once a student's work is submitted. Studies have established the importance of

instructor feedback towards students' writing (Vasu et al., 2016; Tee 2014) as well as the positive impact of peer review in an online environment (Gao et al., 2017).

The process writing approach advocates writing based on a set of procedures such as prewriting, drafting, revising, editing, and publishing (McKensie & Tomkins, 1984). According to Brown (2001), the approach is fitting in the second language classroom because it provides learners with the opportunity to write and think. By applying this approach, the e-Portfolio writing tasks were divided into stages, allowing students to draft and revise their work. The stages were prewriting (mind map), drafting (essay outline), revising (essay draft), editing (final essay) and publishing (published essay). Since essay-writing in the e-Portfolio was completed using Google Docs, work was edited electronically which meant that revising one's writing became easier compared to reprinting paper drafts.

The theory of constructivism states that knowledge is actively constructed as a result of individual experiences (McLeod, 2003). The e-Portfolio provides opportunities for learners to express themselves meaningfully via a wide range of artefacts. The artefacts consist of digital resources such as word-processed documents, online articles, and multimedia files. The e-Portfolio is used as a means for reflection when learners provide reasons as to how the artefacts are representative of their learning (Barrett, 2005). The reflective process was also highlighted by Wassenmiller et al. (2010) as a crucial part of the e-Portfolio because it allows students to understand their learning.
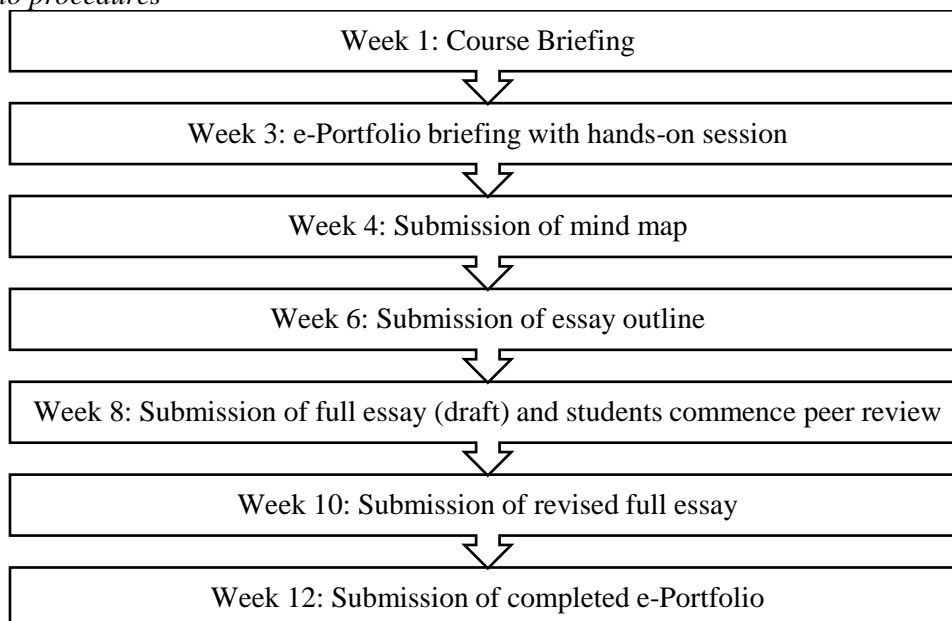
The framework led to an emphasis on four features in the e-Portfolio. The four features were instructor feedback and marks, instructor comments, artefacts and reflections, and peer assessment.

Table 1
e-Portfolio features and description

Feature	Description
Feedback and marks	Feedback and marks were awarded by the instructor after the completion of each writing task using a pre-attached rubric. The writing tasks consisted of a mind map, essay outline, draft of full essay and a revised final essay.
Instructor comments	Specific comments were made by the instructor directly on the students' work; students could respond to comments.
Artefacts and reflections	Artefacts and reflections were posted by the students as part of their writing tasks. Students were required to post at least three artefacts that complemented their essay outline, essay draft and final essay.
Peer review	Students had to review at least one coursemate's essay draft and award a maximum score of 5%.

Table 1 outlines the description of the four e-Portfolio features. Feedback and comments differed as the former was provided using rubrics whereas the latter was provided using the 'comment' feature in Google Docs. Therefore, it could be implied that feedback was more general and given by the instructor in relation to marks whereas comments were more specific and made whilst the instructor read the essay. In addition, two-way communication was made possible via the 'comment' function in Google Docs that allowed responses from students. When posting their artefacts and reflections, the students were required to justify their selection of artefacts. Examples of artefacts include images, videos, news articles, research papers, and other digital resources that were related to the students' work. The peer-review task required students to appraise and comment on one coursemate's essay draft. The comments may include opinions from the reader's point of view as well as suggestions for improvement.

Figure 1

e-Portfolio procedures

Week 1: Course Briefing

⬇

Week 3: e-Portfolio briefing with hands-on session

⬇

Week 4: Submission of mind map

⬇

Week 6: Submission of essay outline

⬇

Week 8: Submission of full essay (draft) and students commence peer review

⬇

Week 10: Submission of revised full essay

⬇

Week 12: Submission of completed e-Portfolio

The e-Portfolio assessment required students to compose a problem-solution essay in stages using Google Docs. The essays and artefacts were then compiled into an e-Portfolio that was created using the new Google Sites. The assessment was formative since it was conducted over an extended period and the aim was to promote revision as a result of the feedback that the students received. As illustrated in Figure 1, time was allocated in between submissions to ensure that the instructor could provide feedback and the students had the opportunity to improve their work as needed.

Methodology

This study was conducted at UMS, a public university in Malaysia. The participants in this study consisted of 46 first-year undergraduates from two programmes, namely International Relations (IR) and Teaching English as a Second Language (TESL). They were enrolled in the course UB00402 Academic Reading and Writing that was offered by the Centre for the Promotion of Knowledge and Language Learning at UMS. UB00402 was a 14-week advanced English course that aimed to equip students with reading and writing skills for academic purposes. Table 2 provides a summary of the student profile.

Table 2

Student profile

Demographic Feature	Description
Age	20 to 22 (Students generally complete English Language course(s) in the first two years of their undergraduate programme).
Academic qualification	Have completed diploma, matriculation or Malaysian Higher School Certificate.
Cultural makeup	Malay, Chinese, Indian, Kadazandusun and other races.
Language proficiencies	Attained upper Band 3 to Band 6 in the Malaysian University English Test (MUET).

The MUET is an English language proficiency test that is mandatory for admission into Malaysian public universities. The results are categorised according to bands that range from one (lowest) to six (highest). At UMS, the MUET results were used to sort undergraduate students into proficiency and advanced English courses. Since UB00402 was an advanced English course, only students who attained Band 3 and above in the MUET were eligible to enrol.

Research Design and Instruments

A case study approach was employed due to its flexibility to encompass various data collection methods through numerous sources such as interviews, documents, observations and research diaries (Gray, 2009). To enhance the rigour of the study, two different classes were selected with 22 students in Class A and 24 students in Class B.

The data sources in this study consisted of online discourses, open-ended questionnaires, and interviews. The online discourses were captured from students' activities in their respective e-Portfolios and include student comments, artefacts, and reflections. The online discourses were used to corroborate the data collected from the questionnaire and interview. The questionnaire required the participants to reflect on how the e-Portfolio features that were emphasised in the framework had contributed to their academic writing whereas the interview was intended to elicit detailed information about their experiences of using the e-Portfolio.

The open-ended questionnaire and interview questions were validated by two subject matter experts. Prior to this study, the e-Portfolio and the questionnaire were pilot-tested on a group of students who were representative of the actual participants. This involved 43 undergraduates who also majored in IR and TESL. The pilot test outcome revealed an overall positive response towards the e-Portfolio since 36 respondents voted for e-Portfolio to be continued in the course. Following the pilot test, minor revisions were made to the e-Portfolio procedures and questionnaire by simplifying the instructions.

In this study, 46 respondents completed the open-ended questionnaire at the end of the 14-week course. To gather more detailed findings, a total of 18 students (nine from each class) from the sample were also interviewed. The sample was categorised into three levels of performance based on their e-Portfolio results: excellent, average, and weak. From each of the three categories, three students volunteered to be interviewed. The selection of students from each category of performance was done to ensure that students of varying performance were fairly represented.

Data Analysis

The data gathered from the questionnaire, interview, and online discourse were transferred into Microsoft Word files and imported to Nvivo 12 for analysis. Regarding Braun and Clarke's (2006) guide, thematic analysis was applied. The first step was reviewing the entire data set to familiarise with the data, the second step was coding the data thoroughly by going through each item, the third step involved generating the themes inductively, and the last step was reviewing the themes by checking and re-coding.

Findings

The Contribution of the e-Portfolio to the Students' Academic Writing

This section presents the findings of the features that were emphasised in the e-Portfolio framework. The findings are presented based on the following three themes: 1. Feedback and communication, 2. Artefacts and reflections, and 3. Peer reviews. The findings from the online discourses are presented first and then complemented by data from the open-ended questionnaire

and the interview. In the interview excerpts, the participants are labelled as A or B, depending on their class. Ellipses in the excerpts indicate pauses during the speech.

Feedback and Communication. Following the submission of students' work in the e-Portfolio, the instructor left feedback that were meant to promote revision. In return, the students were also able to reply to their instructor's comments. These interactions occurred in a natural context whereby the students contributed responses on their own accord.

Table 3
Number of student responses in e-Portfolio

Class	Number of responses
Class A	34
Class B	35

Table 3 shows the number of comments that were made by the students in response to the instructor's comments. Examples of student responses are provided to present a more comprehensive picture of the interactions.

Table 4
Student responses to instructor comments

Student Code	Comment
NM	Yes. Malaysians use up about 31 million plastic straws everyday (Star Online, 2017). According to a National Solid Waste Management Department's 2012 report, plastic makes up 13.2% of Malaysia's total household waste. Can I use this statistics and replace the old one?
FW	Ok miss. If I change my solution is it ok? Just now my solution is hold a Journaling Program, but I'm thinking to change it to Hold a Yoga program.
NF	Can I rephrase it to "since Malaysia that we are living today is a developing country"?
AH	Miss if the website doesn't have published date and only last updated date, can I use the last updated date instead? or I need to state n.d?
AW	Hi teacher. For the implementation of HIIT in UMS courses, do I need to include both curriculum and co-curriculum? Or I can just say for the co-curriculum courses?
VS	Miss I don't understand what Miss mean by feasible/economical?
BB	Do not use "and" to begin a new sentence, it functions as a linking word for two ideas in a sentence" right?
NB	I got this reference from a lawyer company website in US. 😅
MS	Sorry Miss, I'll correct this line.

Table 4 shows the examples of student comments that were made in response to the instructor's remarks in the e-Portfolio. The examples indicated that students contributed comments to ask for suggestions and clarification regarding their work especially pertaining to essay content and language use. There were also instances when students responded to acknowledge the instructor's comments.

Table 5
Questionnaire findings regarding feedback and comments in e-Portfolio

Statement	Class A Response	Class B Response
The feedback and marks given by my instructor using Google Docs	All 22 answered 'Yes' • Improved writing skill • Could see errors and weaknesses • Made revisions based on feedback • Knew ability and performance	All 24 answered 'Yes' • Improved writing • Knew which part to improve/revise • Could see errors • Knew ability and level

were helpful for my academic writing	• Knowing marks motivated students to do better	• Motivation to do better • Monitor own progress • Use of rubric helped to understand grading
The specific comments given by my instructor using Google Docs were helpful for my academic writing	All 22 answered 'Yes' • Improved writing skill • Comments were easy to understand • Could see errors made • Could make correction	22 answered 'Yes' • Improved writing skill • Could see errors and weaknesses • Easy to understand the comments • Could reply to comments when student did not understand • No need for face-to-face consultation 2 answered 'Yes and No' • Writing skill improved but annoyed by comments • Different way of teaching and learning • Internet connectivity was an issue (searching for place to connect to Wi-Fi)

Table 5 summarises the questionnaire findings related to students' responses towards the communicative features in the e-Portfolio. As a result of the instructor feedback and marks, the students from both classes believed that their writing skills had improved as they were made aware of their writing errors and they were able to revise their work accordingly. They also mentioned that the feedback and marks informed them of their level of performance and that this may have been a motivation for some to perform better. In addition, the students from Class B mentioned that they were able to monitor their progress and that the use of rubrics helped them to understand how they were evaluated.

A majority of the students from both classes expressed that they experienced writing improvement as a result of the instructor's comments. They also conveyed that the comments were easy to understand and that the comments helped them to see the errors that they had made which most probably then led to a correction. Additionally, students from Class B mentioned that they could reply to the comments and this probably led to less reliance on face-to-face consultation. Two students from Class B had mixed feelings towards the instructor's comment feature. Of the two students who answered 'Yes and No', one explained that his/her writing skill had improved but added that the comments were annoying; another expressed that it was a different way of teaching and learning but internet connectivity was a setback.

Findings from the interview revealed more details about the benefits of receiving feedback and communicating via the e-Portfolio. Students remarked that being able to receive feedback and communicate via the e-Portfolio was an advantage. The students' statements are:

"It actually improved me a lot, because when I… academic writing has a lot of section, the draft, brainstorming and everything when we put it, the instructor can comment on this side and I know where's my wrongs and I can improve my grammar, my citation and so on." – B15

"I do enjoy using the e-Portfolio and the most enjoyable features about the e-Portfolio when I ask Miss if I can change my thesis statement and Miss directly reply to me so basically I got the information through my notifications on my phone so that means I can… I don't have to wait for your reply. Instantly, the notifications came out through email so which is easy for me to keep update whether I can do the correction or not." – B18

Artefacts and Reflections. Figure 2 depicts the artefacts and reflections that were posted by a student in her e-Portfolio. In her argument about the importance of implementing sex education in Malaysian public schools, the student chose to include two videos and one online article that were related to her writing task.

Figure 2
Example of artefacts and reflections

What have you learnt from sex education? by *PopDevRightsMalaysia*

In my solution in the background paragraph, the reason why sex education need to be introduced starting at the Years of One in primary level because based on this video we could see Malaysian teenagers might have little knowledge regarding what they have learnt in school. For example at the minute 1:47 mins where the interviewer asked the question 'Can you get HIV by kissing?', all of them get to answer the question.

Unfortunately the question were answered through logically thinking for as one of the teenager answered and paused for a second and said 'I don't think so.' Their uncertainty when answering all the questions is a living proof that PEERS lesson is a failure and the hope for sex education to be introduced a standalone subject is needed immediately.

Lesson on relationships and sexuality at Dutch Primary School - Rutgers

This is this one of the example how lesson in the Rutgers syllabus is conducted. In this video a primary teacher in Dutch, taught her primary students on consents. A group of students sat in circle to revise their previous lesson on the topic.

At the end of the video, the teacher decided to show a film on consents to her students. Given the scene where a grandmother wanted to kiss a boy by offering a cupcake. Students were asked on how can they manage the situation.

Based on the video as well students were very productive in answering the teacher's question. A book is used as a medium to illustrate the lesson. Although Rutgers lesson can be access through computer

To imagine how the lesson can be conducted in our education system, this video shows the real situation on how students get engaged with the lesson.

Malaysia needs sex education - R.AGE

by SATPAL KALER alltherage@thestar.com.my An estimated 18,000 underage girls get pregnant in Malaysia each year – and experts are saying enough is enough. Mariam*, 17, should've been preparing for her SPM exams when we met her in February last year. But instead, she was about six months pregnant and living in a shelter home for ...

Malaysia Needs Sex Education - R.AGE

This article was written Satpal Kaler. On her first paragraph, she wrote a story about Mariam a 17 years old girl who was pregnant while preparing for SPM exams. Mariam now is a unwed mother living in a shelter home.

In this article there are two focus that I wanted to zoom it. Firstly, Mariam said during the interview, 'I didn't think that I would get pregnant and insisted to use condom. It wasn't a mutual agreement to have sex but her boyfriend insisted for it. Secondly, according to 2015 survey backed by Health Ministry, 35% of Malaysian female youth believe having sex for the first time wouldn't lead to pregnancy.

These two issues is a reflection towards the ignorance lives within our society. Current syllabus is not well covered enough. For example, in the Form Five Physical Education and Health textbook states the fact of pre-marital sex will ruin family name, their future and risk of STI is like having HIV/AIDS. These facts are not enough and it is their rights to be equipped with well structured lessons on sex education.

We need to put aside the image of taboo on sex education. Why would we put stigma on sex education when it is the best solution to prevention.

Table 6

Questionnaire findings regarding artefacts and reflections in e-Portfolio

Statement	Class A Response	Class B Response
Providing artefacts and reflections in my e-portfolio was helpful for my academic writing	All 22 answered 'Yes' • Strengthened essay through evidence • Understood more about topic • Gained more information and ideas about topic • Artefacts made e-Portfolio appear more interesting/attractive	23 answered 'Yes' • Supported and strengthened essay/writing • Essay/writing was more interesting • Gained more information and knowledge • Led to better understanding (for both writers and readers) • Source of inspiration and motivation 1 answered 'No' • Essay was the focus

As shown in Table 6, the inclusion of artefacts and reflections in e-Portfolio recorded positive responses from students in both classes as they mentioned that the artefacts helped to strengthen what they wrote. In addition, the students also stated that they understood their writing topic better and gained new information and knowledge. Furthermore, some students expressed that the artefacts made their e-Portfolios appear more interesting. Some students from Class B commented that they were inspired and motivated after referring to the artefacts. On the other hand, one Class B student gave a negative response, explaining that the emphasis was the academic essay rather than artefacts and reflections.

In the interview, the students also mentioned artefacts as the strengths of the e-Portfolio. Some of them explained that they enjoyed the feature whereas others believed that using the artefacts helped to improve their writing. The excerpts from the interview, taken from different students, are presented as follows:

"It's easy to take pictures from other sources and it's easy to insert YouTube." – A1

"I like it when we can put artefact there… video, article." – A6

"When I am doing the essay, by putting the artefact, I can know about my essay well. It's like my supporting tools for my essay." – A8

"I think the artefact and the reflection section really does help us like we can understand more about our topic so that part is like we can express our opinion about our topic and what we can find through our research." – B16

"I think yes, it did improve my… it helps me in my English actually because especially in
e-Portfolio, I'm using the… there is an option that we can embed article, right? So I think that is a good feature because I would have to search for articles and I have to read the articles to get to know the articles, and I have to make them as an artefact so I have to understand the thing and do a caption, so that really helps." – B17

Peer Review. Students had the opportunity to explore and evaluate others' work as part of the peer review task. For the task, the students were free to contribute comments on one another's essay in the e-Portfolio.

Table 7

Number of peer review comments in e-Portfolio

Class	Number of Comments
Class A	157
Class B	144

Table 7 shows the number of comments that were made by Class A and Class B students during peer review. To present a better overview of the peer review, examples of online comments were captured.

Table 8

Peer comments

Student Code	Comment
DN	Add "to" after the word "according".
MJ	Productively and fruitfully is same meaning. Try "productively and efficiently" or etc.
NB	I think you can change 'hold' to held because it's past tense if I'm not wrong
PA	You can add statistics of unreported child abuse cases in Malaysia for the past for years as well to strengthen your statement.
NS	Your reference is only 3. It does not meet even the minimum 6 references. Please add okay?
HB	Good job! Introduction and background paragraph easy to understand.
NG	Overall, nice explanation and clear examples.
JB	This sentence kinda not complete to me. What kind of "myth" do you refer to?
AA	Are you sure if the solution is an order from the government, the student will follow it??
BB	Why?? Can you elaborate it more?

Examples of the comments that were made as part of the peer review task are presented in Table 8. Based on the examples, the students contributed comments to suggest, to motivate and to seek clarification from their course mates.

Table 9

Questionnaire findings regarding peer review in e-Portfolio

Statement	Class A	Class B
The peer review was helpful for my academic writing	15 answered 'Yes' • Could know peers' opinions • Made changes based on review • Could read and learn from other's work 6 answered 'No' • Felt that peer(s) lacked the ability to assess work • Perceived self as lacking the ability to assess other's work • Could not understand reviewer's point of view • Comments were not useful • Peer review might be biased • Marks were awarded without evaluating the work • Preference for instructor feedback	15 answered 'Yes' • Comments helped writer to improve • Received opinions from peers • Indication for whether peer understood the essay • Learned from reading other's work • Learned to evaluate other's work 8 answered 'No' • Bias in peer review • Feedback given was not helpful • Peer was not qualified to review work • Peer did not review work thoroughly • Peer was not able to identify mistakes

| 1 answered 'Maybe' | 1 answered 'Yes and No' |
| No specific reason was given | • Was made aware of mistake(s) made but felt that peer did not identify all the mistakes in the draft |

The students' responses in Table 9 indicated that the peer review was not as well-received with only 15 students from each class voting 'Yes', which meant that about a quarter from each class disapproved of it. The positive reasons include the students could see others' opinions and they were then able to revise their work based on comments from their peers. Some students mentioned that peer review led them to read and learn from their classmates' work. Additionally, students from Class B stated that they learned to evaluate others' work. On the other hand, a total of six students from Class A and eight from Class B expressed that the peer review was not helpful. This stemmed from their beliefs that some classmates were not qualified to assess and there is a possibility of bias. Students from Class A expressed the self-perception that they were not qualified to assess others' work. One student from Class B, who answered 'Yes and No', explained that he or she was made aware of the mistake(s) in the essay draft but added that not all the mistakes were completely identified by the peer.

In an interview session, one student talked about the benefits of using peer review in the e-Portfolio. According to the student:

> "During the peer review session, my classmate who do the peer review on me, I can see her comments and then I can adjust accordingly. Of course, the comments from me is also quite constructive." – B10

Discussion

Feedback and Communication

The examples of student responses in the e-Portfolio indicated that the students utilised the opportunity to communicate with the instructor about their work. The ability to communicate promptly between instructor and student is otherwise limited in the conventional paper portfolio. In the questionnaire, the participants in the present study explained that instructor feedback and comments helped them to see what they needed to improve and that the comments were easy to understand. The findings proved that instructor feedback and comments contributed positively to the students' academic writing, and the use of the e-Portfolio enabled communication to be done more efficiently and in detail. This is consistent with the findings from two English as a Second Language (ESL) studies that were conducted in private Malaysian universities (Vasu et al., 2016; Tee, 2014). Vasu et al. (2016) deduced that explicit instructor feedback with a focus on content is a contributing factor to students' writing performance. Tee's (2014) study revealed that students were able to revise their writing as a result of information-rich feedback from the instructors. The importance of detailed feedback was also advocated in a study by Chang (2014) that examined the type of academic writing feedback that was deemed useful by second language learners in an Australian university. The findings similarly revealed that instructor comments that were specific and conversation-like were considered as useful feedback to the students as opposed to overly vague comments (Chang, 2014).

The interview findings in the present study also revealed feedback and communication as the strengths of the e-Portfolio. This further demonstrated the importance of instructor-student interaction when using technology-enhanced tools such as the e-Portfolio in education. A study confirmed the significance of feedback since it was cited as one of eight factors that affected

undergraduates' motivation to use e-Portfolio (Rokhsareh et al., 2015). A meta-study similarly highlighted that quality interaction between instructors and students is necessary for an effective e-learning environment (Minnaar, 2011).

Internet connectivity was mentioned as an issue in the questionnaire findings. Unfortunately, poor Internet connectivity was also cited at two Malaysian public universities. A study conducted by Mobarhan et al. (2015) at an unnamed Malaysian public university reported student frustration when attempts to use the e-Portfolio were impeded by poor Internet connectivity. This was likewise reported by Thang et al. (2012) as the main challenge of e-Portfolio use among students at UKM.

Artefacts and Reflections

The use of artefacts and reflections in the e-Portfolio proved valuable since encouraging responses were observed in the findings of this study. Positivity towards the use of online resources was similarly demonstrated in research that used Facebook as an e-Portfolio for Malaysian pre-service teachers. The respondents felt that the pooling of relevant resources such as notes, videos, and pictures was beneficial to their learning and contributed to their confidence (Kabilan, 2016). However, using multimedia in English classrooms is already a well-substantiated practice since it can engage and motivate learners. The uniqueness of using artefacts in the e-Portfolio lies in the ability for students to story-tell about and reflect on their learning experience (Barrett, 2005). Wassenmiller et al. (2010) supported this notion by saying that reflection is a component that distinguishes e-Portfolio from ordinary online storage. This reflective process was observed among the respondents in the present study. In the questionnaire, the students explained that the use of artefacts and reflections helped to support and strengthen their writing and helped them to better understand their topic. In the interview, three students spoke about how the process of selecting artefacts helped to improve their understanding of their work. One student elaborated that the process involved researching, reading, understanding and writing captions for the articles she intended to upload as her artefacts. These findings convey the complex and continuous process of selecting and reflecting on one's choices when constructing the e-Portfolio. A similar observation was made in Kabilan's (2016) study whereby the process of considering and reflecting on the selection of artefacts contributed to the development of reflective and critical thinking skills among pre-service teachers. Rowley and Munday's (2014) study on the use of e-Portfolio among pre-service teachers in Australia also highlighted the development of reflective thinking and higher order thinking skills. The researchers found that e-Portfolio practices such as selecting evidence, reflecting on experience and assessing learning contributed to the respondents' sense of self.

Peer Review

The examples of peer comments in the e-Portfolios demonstrated how the students were able to contribute comments and suggestions to their peers. Positive student responses from the open-ended questionnaire included getting to know others' opinions about one's work and learning from reviewing others' work. This was also similarly voiced in the interview whereby one of the students mentioned peer review as a strength. In line with this finding, writing improvement as a result of peer feedback was also demonstrated in research involving six Chinese undergraduates who supported one another using a blog called Qzone (Gao et al., 2017). The study reported improvement in the students' writing performance especially in aspects pertaining to language, content, and style. Demirel's (2011) study involving non-native speakers in Turkey also revealed that one of the learner strategies to cope with writing anxiety was collaborating with

peers. Peer feedback, therefore, serves as a form of reassurance about one's work; being able to communicate with peers about writing provides a certain level of support.

Despite the positive responses from most of the respondents in the open-ended questionnaire, about a quarter of students from each class expressed that the peer review was not helpful to their writing. This pales in comparison to instructor feedback and comments which garnered positive responses overall. Despite the students' language proficiency, the responses indicated a distrust for their peer's ability to contribute useful feedback. A similar trend was observed in another study whereby ESL students at a private Malaysian university also indicated a preference for instructor feedback over peer feedback (Vasu et al., 2016). Another study that investigated peer feedback on an online platform noted the need for instructor guidance as the students needed affirmation and were dependent on their instructor (Gao et al., 2017). The researchers found that when left unsupervised, the students contributed simplistic comments that were not constructive for their peers.

The mixed responses to peer review in this study indicated that it has to be conducted with caution. Although the peer feedback was employed in combination with scores, which according to Huisman et al. (2019) benefits writing more than employing only either comments or scores, the reliability may have been affected by the low number of peers involved. The findings related to peer feedback in university indicated that having more than one peer is likely to improve students' academic writing performance (Huisman et al., 2019). Another factor that could have improved the responses to peer review in this study is coaching. The benefit of coaching was demonstrated in Min's (2005) study involving EFL students in a Taiwanese university. Min (2005) reported that there was an improvement in terms of the quantity and quality of comments following specific training, and the respondents accordingly perceived themselves as better reviewers.

Conclusion

This study has demonstrated that the use of e-Portfolio with an emphasis on feedback and communication, artefacts, and reflections as well as peer review contributed to the students' academic writing skill. The students utilised feedback to revise their writing and further interacted with their instructor about the tasks. The purposeful selection of artefacts for inclusion in the e-Portfolio led the students to better understand their work and facilitated reflective thinking as they had to evaluate the value and relevance of the artefacts. Through the peer review task, the students were able to provide comments and receive suggestions in return.

The study filled a gap in the research field that had limited focus and exploration on e-Portfolio for academic writing among second language learners in Malaysia by offering insights into the implementation of the e-Portfolio in higher education. The findings proved the strengths of using e-Portfolio as an alternative assessment tool for ESL learners in Malaysia. Nevertheless, the study has several limitations. This study was conducted on a small sample of students at a university and therefore the results cannot be generalised. Since the students volunteered for the interview, this could have led to partiality in the findings. In retrospect, we also noted that the data related to the peer review could have been affected by a lack of coaching. This study also faced a limitation in terms of time since the course only spanned for 14 weeks.

Future studies may opt to investigate the subject matter for a longer period or track learner development across an entire programme. Longitudinal research may help to discern possible changes and document other impacts that might otherwise remain unknown. The focus of this study leaned towards the experience and perception of the learners. As such, research that further examines instructors' use of the e-Portfolio is suggested. The findings may reveal how the e-Portfolio can be better employed from a different standpoint. In addition, future research may be conducted across other higher learning institutions for comparison. A comparison of different

case studies may additionally reveal more development, strengths and challenges related to e-Portfolio use.

This study has implications for instructors and course designers to develop a technology-embedded assessment that complements the preferences of the current Generation Z students who are digital natives and technology savvy. Instructors should capitalise on alternative assessments that are digital as they can offer a more flexible and engaging means for testing. Furthermore, providing accessible and mobile learning experiences beyond the physical classroom can encourage students to be more autonomous. Hence, we strongly recommend the e-Portfolio as a relevant educational tool in Malaysian learning institutions. We believe that the use of e-Portfolio will further drive the digital transformation of higher education and contribute towards the realisation of Shift 9 of the Malaysian Higher Education Blueprint (Ministry of Education, 2013).

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