

The Impact of E-Portfolio Assessment Implementation on Polytechnic Students' Speaking Proficiency and Self-Reflection on Learning Business English

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Highlights

The use of E portfolio platform has enabled more learning functions and self-reflections in enhancing students' proficiency in speaking.

ABSTRACT: As an effective learning and assessment tool, E-portfolio has enjoyed great popularity with its great benefits in improving academic performances. However, few empirical studies have focused on integrating e-portfolio assessment into ESP courses by adopting blended learning mode. This study aims to investigate the effect of e-portfolio on students' speaking proficiency in an ESP course within the context of blended learning and the learners' use of self-reflection strategies. Data on students' performance on the final speaking test, teacher observation and semi-structured interview were collected from second-year Business English students in Ningbo Polytechnics in China. The data were both qualitatively and quantitatively analysed. The findings revealed that the use of e-portfolio had a significant effect on improving students' speaking proficiency in discourse and interactive communication. Evidence from the study also indicate that guided reflection has enabled students' active engagement in e-portfolio development and thus their new understanding on the basis of reflection could be integrated into personal practices to help achieve learning outcomes.

Keywords: E-portfolio, assessment, speaking proficiency, self-reflection, ESP

Introduction

E-portfolios have been clearly pointed out as digital resources where learners collect course materials, projects, and achievements and store them in a cloud storage for easy accessibility (Dougherty & Coelho, 2017) and differentiating ideas, artefacts, reflection, achievements, and feedback and fosters reflective learning, encourages future planning with purpose (Volmer & Sarv, 2018). Rather than function only as a tool or platform to package students learning files, e-portfolios have been implemented as assessment tool in evaluating learners' English language proficiency. Many studies on improving English skills through the use of e-portfolio assessment have been conducted on students in higher education (e.g Tonogbanua, 2018,

Karami, et al., 2019). Students' materials and output could be compiled in e-portfolio to keep a good record of their learning process and the timely feedback that students get will contribute to improving self-awareness, such as knowing their strengths to act further (Welsh, 2012). E-portfolio usage has been reported to generate various benefits, including storing and sampling students' record of learning process and learning achievements, and visualizing students' learning results (Baharom & Shaari, 2022). It has also been found that the use of e-portfolio helps to improve English learners' writing proficiency (Karami et al., 2019), and enhanced their motivation towards writing and learning in general (Meletiadou, 2021).

Studies specifically on the use of e-portfolios to teach English speaking skills . Moreover, speaking ability required in English for Specific Purposes (ESP) courses is, to a large extent, quite different from English for general purpose by aiming to "communicate a set of professional skills and to perform particular profession-related activities" (Rahman, 2015). Consequently, corresponding assessment tasks and assessment criteria applied in E-portfolio implementation is supposed to be context-specific. Students have been reported to form positive attitudes towards the e-portfolio implementation in speaking courses (Cepik & Yastibas, 2013). Koyak and Üstünel (2019) creatively integrated recorded motivational videos into speaking practices and concluded that the recorded motivational videos helped learners to increase their self-confidence, awareness of pronunciation, number of vocabulary and motivation in the classroom.

In an ESP course like Business English (BE), speaking ability within a business setting is a core skill for course learners and its acquisition probably has influential impact on future job application and career development. By utilizing an e-portfolio software environment web-based e-learning and course method tools (lore.com), Yastıbaş (2013) illustrated through e-portfolio assessment, students have not only improved their speaking, grammar, pronunciation, and vocabulary, but students' attitudes towards speaking skills were affected positively and showed improvement. Within blended learning context, a significant effect of e-portfolio in flipped classrooms has been detected on students' speaking performance through their active behavioural, cognitive, and affective engagement (Kusuma, 2021).

Meanwhile, Zubizarreta (2009) stated that reflection plays a crucial role in applying a learning portfolio. Reflection is regarded as a cornerstone for e-portfolio practices in higher education and they function by both supporting learners to connect learning experiences and implementing authentic assessment in learning (Landis et al., 2015). Rogers (2001) made it clear through a meta-analysis of different theoretical approaches to reflection practices in teaching and learning that the purposes of adopting reflection are variable with 15 different terms describing reflection, and summarized four common defining features of reflection: (1) reflection requires active engagement of each individual;(2) reflection is triggered by unusual or perplexing situation or experience; (3) reflection examines one's responses, beliefs, and premises in light of the situation; (4) reflection results in integration of the new understanding of one's experience.

Objectives and Research Questions

The current study aims to investigate the implementation of E-portfolio as an assessment approach in an ESP course called Business English to improve English majors' speaking proficiency coupled with learning self-reflection strategies. The questions this current study are as follows:

- (1) Does e-portfolio assessment method improve students' speaking?
- (2) Does e-portfolio assessment method foster students' self-reflection strategies?
- (3) What are the criteria within students' speaking which significantly improve?

Methodology

Subjects

140 students from 4 classes of Business English (BE) comprising 116 females and 24 males Sophomores at Ningbo Polytechnic participated in this study. All are students of International Business Course. Class 1 and class 2 are made as the experimental groups, where the students were guided in the tasks of creating, compiling and sharing the digital portfolios of their BE lessons through ‘DingDing’ application software, particularly the e-portfolio-based formative assessment which is made a compulsory. While for control group of class 3 and 4, assessments of BE were conducted in the traditional way. The researcher conducted teaching of the experimental groups and the other senior English teachers taught the control groups. Prior to enrolling in the BE course, all students have taken the Cambridge Business English model test and there was no significant difference in their test scores ($P=0.18$).

The study experiment lasted for 16 teaching weeks where the students were required to fulfil speaking practice tasks twice a week. They were allowed to select the output and materials that they think show proof and representative of their speaking proficiency to upload online in ‘Dingding’. Speaking tasks range from lesson unit speaking topics, Business English Certificate (BEC) speaking test 1-minute presentation, impromptu speech and reflective pieces of speaking. There are 10 major speaking and feedback activities in total. At the beginning of BE course, the teacher helped clarify to students on matters like pedagogical arrangement, speaking practice tasks, assessment components, stressing that all output materials selected and collected in e-portfolio would work as components of formative assessment and accounted for 50% of the final summative score. This is aimed at pushing students to pay attention to ensure commitment and fulfilment of all the speaking tasks. The teaching content and speaking tasks for the four classes are completely identical, but assessment and feedback were provided in different ways. Class 1 and 2 (the experimental group) implemented e-portfolio assessment while class 3 and 4 (the control group) continued with the traditional way of assessment by submitting assignments directly to the teacher and the teacher marked them. E-portfolio creation and construction was not a requirement for the control group. Delett et al. (2001) 7-step framework for portfolio assessment was used by integrating features of online resources sheds lights on and provides foundation for the current study. As a key project in this BE course, *Sales report during Chinese shopping festival* is taken as an example to illustrate the application procedures of e-portfolio assessment (See Table 1).

Table 1
E-portfolio Assessment Steps and Procedures

Steps of e-portfolio assessment	Procedures
Step 1: Plan the assessment purpose	measure students’ skills in presenting product sales performance during a given period.
Step 2&3: Determine e-portfolio outcomes and match with tasks	1. students search online for sales performance data of selected brands 2. students pay field visit to the stores 3. company introduction, best-selling products, sales performance to be presented
Step 4: Determine organization of the e-portfolio	pre-class: students fulfil online tasks in-class: present sales report after-class: upload report and reflection online

Step 5: Establish criteria for assessment	The final score encompasses self-assessment (20%) peer assessment (30%) and teacher assessment (50%)
Step 6 & 7: Monitor and evaluate the portfolio process	Teachers guide students' assessment, monitor and evaluate e-portfolios

Data collection

Before and after teaching experiment, basic data was collected through tests, questionnaire and interview and post-test data focusing on BE speaking test grades, and reflection. Data analysis software SPSS 24.0 and Nvivo were adopted to analyse the qualitative and quantitative data to objectively display evidence on the effectiveness of e-portfolio assessment mode. In week 16, with teachers' clear instruction and guidance, all students of the four classes took turns to take final speaking test. The test scores account for 20% of formative assessment. All of the students' test sessions were video-recorded without anonymously personal information such as names, or class number being displayed. They were shared with another three senior BEC preliminary test oral examiners who adopted percentage grading system to assess the speaking. BEC assessment criteria and rubric were taken for this test, ranging from grammar, vocabulary, discourse, pronunciation and interactive communication. Each dimension takes up 25% and scores for each dimension and final test were averaged from these examiners' scores. (See Table 2)

Table 2
 Cambridge English BEC; Preliminary (B1 level) Speaking Test Assessment Scales

	1.0	3.0	5.0
Grammar & Vocabulary	Shows sufficient control of simple grammatical forms. Uses a limited range of appropriate vocabulary to talk about familiar topics.	Shows a good degree of control of simple grammatical forms. Uses a range of appropriate vocabulary when talking about familiar topics.	Shows sufficient control of simple grammatical forms and attempts some complex grammatical forms. Uses a range of appropriate vocabulary to Give and exchange views on familiar topics.
Discourse Management	Produces responses, which are characterized by short phrases and frequent hesitation. Repeats information or die grasses from the topic.	Produces responses, which are extended beyond short phrases despite hesitation. Contributions are mostly relevant, but there may be some reputation. Uses basic cohesive devices.	Produces extended stretches of language despite some hesitation. Contributions are relevant despite some reputation. Uses a range of cohesive devices.
Pronunciation	It's mostly intelligible despite limited control of Phonological features.	It's mostly intelligible and has some control of Phonological features at both utterance and word levels.	is intelligible. International is generally appropriate. Sentence and word stress is generally accurately placed.

			Individual sounds are generally articulated clearly.
Interactive Communication	Maintains simple exchanges despite some difficulty. Requires prompting and support.	Initiates and responds appropriately. Keeps the interaction going with very little prompting and support.	Initiates and responds appropriately. Maintains and develops the interaction and negotiates towards an outcome with very little support.

After each lesson, activities and speaking test, the experimental group students were also asked to do the self-reflection as guided by the teachers in class and the instruction steps shown at the beginning of the course. In addition, five students from each experimental group were selected for a series of semi-structured interviews by the teachers towards the middle and the end of the 16 week BE course. All the interviews were recorded; transcribed verbatim, coded and analyzed for emerging themes. Verification process on transcribing accuracy and correctness of coding were done among the teachers themselves assisted by other faculty members functioning as inter-raters.

Findings and Discussion

Comparison of the overall scores of speaking tests

Two groups of students speaking test scores were tested by independent-sample t-test using SPSS 24.0 software. The test results (see Table 3) indicate that throughout the 16-week study, the average score of the experimental group becomes higher (82.12) than that of the control group (78.28). The standard deviation of the experimental group (5.29) is lower than that of the control group (5.83); The difference in the mean value reached a significant level ($P < 0.05$), indicating that e-portfolio assessment had a significant impact on the speaking achievement.

Table 3
Independent-Sample T Test Scores of Speaking Test

Groups	Sample size	Average value	Standard deviation	F	P
Experimental group	70	82.12	5.29	0.109	0.000
Control group	70	78.28	5.83		

Comparison of individual scores in speaking test

To further clarify specific effects of e-portfolio assessment on students' speaking proficiency, one-way ANOVA difference test was done on the individual scores of two groups' speaking tests. Table 4 test results indicate that there were significant differences between the two groups in three of the four dimensions of assessment criteria, i.e. Pronunciation, Discourse and Interactive Communication ($P < .05$), but there was no significant difference between the results of experimental group and control group in the dimension of Grammar and Vocabulary.

Table 4
One-way ANOVA Difference Test Results of Individual Scores Speaking Test

Dimensions	Group I	Group II	Mean difference (I-II)	F value	Significant value (P value)
Grammar and Vocabulary	Control group	Experimental group	0.34	1.715	0.193
Pronunciation	Control group	Experimental group	2.47*	53.56	0.000
Discourse	Control group	Experimental group	-3.23*	83.727	0.000
Interactive Communication	Control group	Experimental group	-3.34*	70.11	0.000

*p<0.05

This clearly illustrates that the experimental group assessed through reflective e-portfolio practices achieved much higher in dimensions of discourse and interactive communication while the control group performs better in pronunciation. What is noticeable is that no significant difference in Grammar and Vocabulary between the two groups has been found. This shows that e-portfolio assessment plays a significant role in improving students' discourse and interactive communication while its impact seems relatively small on helping students to improve pronunciation and grammar and vocabulary.

Qualitative Observation, Feedback and Interview Results

Guided reflection facilitates students' active engagement

It could be observed that all students in the experimental group have created and completed their e-portfolio construction process on time. Moreover, 18 students (approximately 26%) have uploaded over the amount of works required and they displayed all works they have done during throughout the BE course. Generally, from the students' point of view, it is practical for them to do the sales report and submit the documents online to their e-portfolio package. gained a lot in the process. Many commented that they have never done this kind of work before. To a certain extend many students do find it to be a big challenge for them initially.

Reflective process promoted students' new understanding

The teacher observation and tabulated interview data also show that students have experienced and formed new understanding of e-portfolio assessment practices and reflection embedded in it. Five key points can be summarized from the overall observation and the students' interview responses: (1) they appear to be dedicated to learn and explore various business activities; (2) they were able to acquire business knowledge and skills required in the business activities; (3) they seem to be responsible in self-managing and monitor their own learning; (4) they will rethink about their learning practices in a systematic way and benefit from experience; (5) they develop interest to be a member of learning community in and after class.

E-portfolio based reflective practices fostered critical thinking and self-regulation

Basically, the students' e-portfolio works and reflective reports throughout the BE course have both been assessed by adopting Parkes et al. (2013) rubric of reflection assessment namely the Reflective Practice Component of e-portfolio. The two dimensions of reflection on practice and critical reflection of growth have been assessed based on total score of 100 points. As can be seen from table 5, over 80% of students have reached or exceeded the competent level for

reflection on practice, with 11.4% reaching to distinguished level. This shows that the reflective practices conducted through e-portfolio assessment is quite effective. However, compared with students' achievement in reflection on practice, their performance in critical reflection is satisfactory with over 58% of students reaching or exceeding the competent level. However, there are still approximately 40% who just attain a basic level, leaving much space for further improvement.

Table 5
Evaluation Results of Students' Reflective Practice Process

Two dimensions	Basic level (70-80)	Competent level (80-90)	Distinguished Level (90-100)
Dimension 1: reflection on practice	13(18.6%)	49(70%)	8(11.4%)
Dimension 2: critical reflection of growth	29(41.4%)	35(50%)	6(8.6%)

Discussion

This study shows that students can be cultivated into reflective learners in international business who display reflective habits and behaviours. They were provided with opportunities in the BE course to create and construct their own e-portfolio packages to plan their works, complete them, select and upload representative artefacts to upload and reflect and summarize their learning process with teachers and peers' feedback by referring to course aims. According to Rogers (2001), as one defining feature of reflection, to bring about new understanding through reflection and learning to integrate such new understandings into a new round of practices are supposed to be a desired result. Looking back on their e-portfolio creation and construction processes, students reflect on their learning outcomes and learning process. Students who use more reflect more by themselves and have a higher awareness of the importance of trying to plan their own lifelong development than students who do not (Narumi & Gotoh, 2014).

The integration of modern information technology and the widespread of COVID-19 pandemic have brought about fundamental changes to the field of higher education particularly in the teaching, learning and assessment of language for specific courses (Ahmad et al., 2021). The amalgamation of online learning with traditional face to face teaching and learning methods has enjoyed increasing popularity with its various advantages (Bansal & Pathak, 2019). Arifani et al. (2019) concluded that blended-learning is the most effective when compared with traditional face-to-face teaching or online instruction. As instruction transformation approach to English teaching, it has been found to influence ESP learners' mastery of basic English language skills (Kurucova et al., 2018), guarantee students' completion of task quality (Vijayakumar & Viswanathan, 2018), facilitate students' engagement and communication in interactive tasks (Chen et al., 2019). This makes it even more possible to increase non-English majors' attitude and motivation in ESP learning (Mulyadi et al., 2019). Ahmad et al. (2019) highlighted the need for integrated multi-dimensional approach in the delivery of ESP curriculum at the tertiary level by applying teaching, learning and assessment strategies that take into account all essential factors within the contexts.

As online and blended learning have evolved into popular educational strategies, Gikandi et al. (2011) contended the reconceptualization of fundamental issues of teaching, learning and assessment. Against the aforementioned context, Bansal & Pathak (2019) definitely put forward SMART (Specific, Measurable, Attainable, Realistic & Time bound) assessment modes in an ESP course by blending summative and formative assessment techniques. According to Rossett and Frazee (2006), assessment of blended learning is supposed to evaluate continuous learning process and the process should be transparent and comprehensive. Yeop et al. (2016) in their study pointed out almost similar key criteria for blended learning assessment.

Reflection has long been viewed as a cornerstone of most e-portfolio practice in higher education (Landis et al., 2015). Therefore, reflective practices are supposed to be embedded throughout e-portfolio implementation process, from students' planning of e-portfolio construction process, to differentiating representative course works and making further improvement on the basis of assessment and feedbacks by self, peers and the teacher as reflection involves an iterative process. Reflective process is expected to benchmark course objectives and desired results. The ideal outcome is that students willingly reflect to connect learning process and learning outcomes to ultimately from the system incorporating course knowledge and skills.

This study has shown that through a well-structured e-portfolio process, students can be guided to go through reflective practices resorting to e-portfolio assessment strategy. Parkes et al. (2013) pointed out the significance of encouraging reflective practice to prepare thinking practitioners who show that they can adapt to new technologies, new standards, and new environments. To ensure a successful e-portfolio implementation in language lessons, two core issues will, first have to be considered: one is appropriate conceptualization of e-portfolios, and the other is how to integrate reflection into e-portfolio assessment process. These two issues will, to a large extent, determine whether e-portfolio assessment implementation practices are successful or not and whether e-portfolio practices as a pedagogical strategy will be enabled to reach a level that has significant impact on tertiary level language learners. The pedagogy that is embedded within an e-portfolio concept makes an integrated learning process more effective). It is therefore pivotal to guide tertiary students to understand the purposes, features and targets of e-portfolio implementation before teachers officially begin its implementation in a lesson setting (Watson & Doolittle, 2011).

Conclusion

The study clearly shown that implementing E-portfolio assessment mode can greatly promote the ability of business English students to speak English in authentic context. Findings indicate improvement via significantly higher overall test scores in three assessment dimensions of speaking performance as pronunciation, discourse and interactive communication. In addition, students' progress has been depicted in such aspects as active engagement, acquiring new understanding and fostered critical thinking and self-regulation. Furthermore, this study has helped to make it clear that effective e-portfolio assessment practices require multiple contributing factors including teachers' timely feedback and guidance, students' active engagement, unusual or perplexing situation to trigger reflection, students' reflection embedded throughout e-portfolio process and the integration of new understanding into a new round of practices. With proper conceptualization of e-portfolio and full consideration and integration of reflection throughout practices, the current study has shown the positive impact of e-portfolio assessment on improving students' speaking proficiency and self-reflection in ESP course blended learning practices.

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