

The Effectiveness of Online Portfolios for Assessment in Higher Education

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Abstract

The use of online portfolios for both summative and formative assessment is an important part of blended learning. At Queen Mary University of London Engineering School, English Language and Professional Development Planning modules utilised portfolios as one of the ways for formative and summative assessment. Students kept individual and group portfolios throughout the academic year to upload a variety of tasks, including reflections, videos, posters and tasks based on course material from other modules, such as report methodology and results and discussion sections. The teachers provided ongoing feedback on student work to encourage skills development and learner autonomy throughout the semester. A survey was conducted to assess the students' perceptions of online portfolios as part of their learning and development. Despite the initial issues of setting the portfolio, such as lack of familiarity with the software and regular engagement, students identified key academic and transferable skills that had developed and a favourable attitude to portfolios for assessment and learning. Over time, portfolios have additionally proven to be an incredibly valuable way to introduce blended learning to the course. Online portfolio assessment could be widely implemented to a variety of courses or activities and is particularly relevant given the recent move to online learning platforms due to Covid-19.

Keywords: Online Portfolio, Blended Learning, Learner Autonomy, Formative Assessment, Summative Assessment

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Introduction

Queen Mary Engineering School (QMES) is the Joint Educational Institute between Queen Mary University of London (QMUL) and Northwestern Polytechnical University (NPU) in Xi'an, China. The school welcomed its first cohort of students in September 2017. In the 2020/2021 academic year the school had 923 students in total. The programme is delivered in English by QMUL and NPU staff. English Language 1 and English Language 2 are academic language support modules taught to 1st-year students. Professional Development Planning (PDP) 1, PDP 2, PDP 3 are taught to 1st, 2nd, and 3rd-year students. They focus on professional and academic skills. These 5 modules utilised online portfolios for formative and summative assessment both before and during the Covid-19 pandemic. The aim of this paper is to demonstrate how the portfolios were utilised in different modules, present results from student surveys to show what benefits the students thought portfolios brought to their learning and finally to suggest ways portfolios can be adapted to encourage blended learning and diversify formative and summative assessment, particularly given the way Covid-19 has impacted global classrooms.

Summative assessment is administered at the end of a course to determine if students have achieved the objectives set out in the syllabus, whereas formative assessment feeds back into learning and informs the student of their progress throughout a course thus helping them to be a more efficient learner (Harris & McCann, 1994, p28). Formative assessment is aided by feedback given by the teacher or peers. Ongoing, formative feedback helps to develop learning strategies and can have a positive effect on the affective domain and learning outcomes (Yang, 2010). Giving learners “ongoing low-threat objective feedback rather than non-specific numeric evaluations” helps them develop a positive attitude towards errors and an approach to learning which is not focussed solely on grades and results but improving their own competence as well (Allman, 2019, p. 3). This could be particularly valuable in contexts where grades have traditionally been viewed as the most important feedback. Furthermore, Chen and Zhang (2017) suggest that formative assessment may be more beneficial for improving learners’ academic English writing ability than summative assessment. Online portfolios (or e-portfolios), which are editable and provide teachers and students with the ability to communicate via comment sections, provide the ideal platform for formative assessment.

Hyland (2006) defines portfolios as:

An assessment method based on a collection of multiple writing samples selected either to showcase a student’s most successful texts or to reveal a process of writing development. They can be used to structure writing courses, encourage reflection, and provide more comprehensive and equitable assessment. (p. 315)

Online portfolios are rich tools that allow students to easily share a wide array of tasks with their teacher, enabling formative and summative feedback (Goldsmith, 2007). As well as text-based tasks, they can also be used for graphic and multimedia elements (Lorenzo and Ittelson, 2005). At QMES, a Moodle-based Virtual Learning Environment (VLE) provides the online platform for this (known as QMPlus). Students can collate their work and reflect on their strengths and weaknesses, achieving objectives over the course of the academic year. They provide institutions not only work

to assess but also critical data to plan for curriculum improvements (Miller and Morgaine, 2009) and implement blended learning approaches.

Blended learning is an approach that combines online as well as face-to-face classroom interactions to achieve learning objectives. Blended learning can be implemented to improve students' engagement with learning materials (Mestan, 2019), present more flexible and personalised curricula to cater to different students' needs (Jonker et al., 2018), or to maximise the effectiveness of face-to-face activities (Glazer, 2011, p. 7). Literature reviews (Glazer, 2011, p. 2) have shown that blended learning can result in significantly better student learning compared to a conventional classroom. In QMES's case the teachers were not on campus full time, therefore using online portfolios was one of the ways to allow for meaningful engagement with students when the teachers were away.

Using online portfolios for this purpose requires students to be more autonomous. Autonomous learners are described as having several common attributes that lead to more successful acquisition of the target language. Autonomous language learners can select appropriate and suitable learning methods to be used, determine realistic and reachable goals, monitor their own learning process, and evaluate the progress of their own learning, seeking help when necessary; autonomous learners are active participants in their own learning both inside and outside of the classroom (Ceylan, 2015). Developing reflection and analytical skills are key in increasing learner autonomy (Little, 1996, p. 210) and the use of portfolios provided an excellent platform for the development of these skills. Developing learner autonomy was one of the goals of using online portfolios at QMES.

Recently greater emphasis has been placed within higher education to promote transferable or employability skills to graduating students (Fallows and Steven, 2013, p. 6). The focus on a varied approach to skills means that programmes need to develop to embed transferable skills into the curriculum (Smith and Paton, 2014). Therefore, using online group and individual portfolios in the PDP and English Language modules at QMES can enable students to develop the skills they will need in their future careers. As portfolio use is online, this teaches students valuable computer and technological skills which are not only necessary for the workplace, but also for the blended learning approach that many institutions are taking now since the start of the Covid-19 pandemic. These skills will also afford students the opportunity to engage further in future remote learning through postgraduate study or workplace professional development, as well as enable them to successfully network online, which will enhance their future careers.

Creating a group portfolio where students collate project documents, meeting minutes and agenda forms prepares students for real-life projects and work experience after graduation. This develops students' teamwork, communication, organisation and project management skills, vital for any workplace situation. Individual portfolios engage students with the process of learning through continual addition and development of tasks as well as reflective practice.

Reflection is an important tool for learners at university to help them develop their skills, identify their goals and progress towards their future career. It is usual for students to produce a development plan whilst at university (Head and Johnston, 2012)

and such plans have long been part of higher education (Clegg and Bradley, 2006). However, in PDP modules at QMES, students are encouraged to reflect on tasks they have completed using Gibbs' reflective cycle (Gibbs, 1998) rather than simply producing a plan. This enables students to deeply connect with their learning by identifying aspects they performed well in, which should be replicated in future tasks, or areas where improvement is needed. This reflection is further developed in the English Language modules where students use SMART planning to set goals and reflect on their progress. This two-pronged approach gives ownership of development to the student as a continual process of reflection and goal setting can enable students to progress more rapidly. Head and Johnston (2012) argue that reflection can be something that learners have difficulty with as they do not see its value in relation to their studies. They further mention that reflection takes time, and often learners have difficulty with time management. Therefore, learners want to spend time on the subjects they feel are most relevant to them; mostly discipline-specific content. This, combined with the perceived lack of value, can lead learners to dismiss the usefulness of reflection and therefore engage only when it is necessary, for example, for assessment (Hearn, 2007). Struyven, Dochy and Janssens (2005) discuss the need for innovative, summative assessment that students now require. Portfolios fit this requirement, and if they provide authentic tasks and prepare students for the workplace, students will prefer this as a form of assessment (Struyven et al., *ibid*).

Materials and Methods

Portfolio Tasks

QMPlus provides a platform for students to upload a variety of written and spoken tasks, including setting and reflecting on SMART goals, critical thinking tasks, writing reports, recording short monologues, uploading PDFs of posters, and project management and agenda forms. The combination of formative and summative assessment means students receive formative feedback throughout the semester on specific tasks as well as feedback on their whole portfolio, and a summative, final grade on the portfolio at the end of the semester or the year. Another benefit is the flexibility of using a portfolio assignment over the duration of an academic year or one semester or for specific projects only (as with PDP).

English Language and PDP portfolios constitute approximately 50% of the student's final grade, with the remainder being used for more extensive, summative assignments such as presentations or written case studies. Variety in assessment type offers students more opportunity to display their knowledge and ability in the subject (Ramsden, 2003).

Survey

The survey consisted of 10 questions assessing using the portfolio, skills developed, feedback on tasks, range of tasks and effectiveness of the portfolio. Most of the questions were multiple-choice, but there was also an opportunity for students to rate questions and to give their own opinions.

The questionnaire was disseminated to year 2, 3 and 4 students who had experience of using the portfolio in different subjects and for the full range of tasks. 110 students completed the survey, most of which were third-year students.

Results

When assessing the challenges of the portfolio, two-thirds of students reported the major challenge being the speed of the Internet. Familiarity with this new type of learning tool was rated as a challenge by 15% of students. However, 12% of respondents registered no challenges with using online portfolios. After using the portfolio for 6 months, figure 1 shows that 38% of students believed the challenges of using the portfolio remained the same, 40% reported the challenges improved slightly and 16% believed there was a significant improvement.

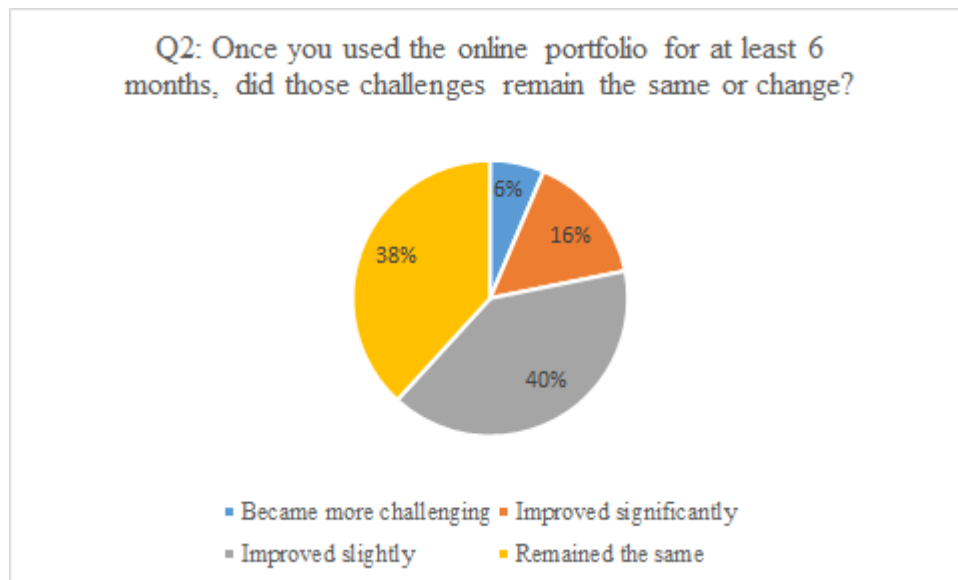


Figure 1: Question 2, Improvement of Challenges When Using the Portfolio

Figure 2 shows that 67.9% of students surveyed agreed or strongly agreed that using the portfolio had been valuable for their learning.

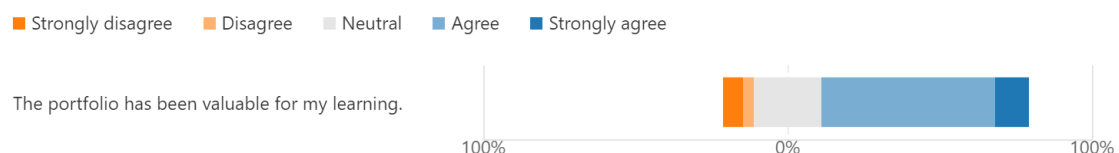


Figure 2: Question 3, the Value of the Portfolio Towards Learning

In terms of skills development, figure 3 shows that students believed their academic writing, reflection and organisation skills were the most developed, with learner autonomy, IT skills and language fluency being the least developed from using the portfolio.

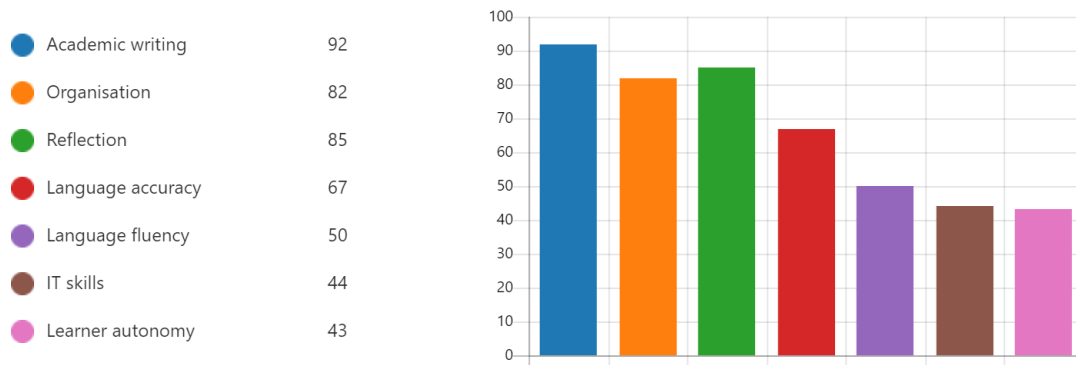


Figure 3: Question 4, Skills Development

Feedback on the work on the portfolio was left as comments by teachers for the students to see. Figure 4 shows that 94% of students found the feedback very useful or somewhat useful.

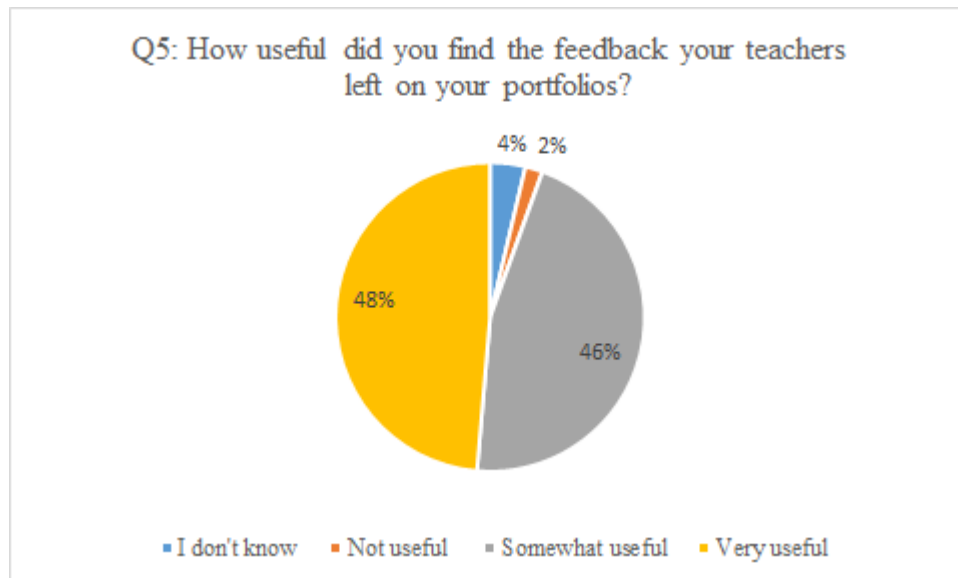


Figure 4: Question 5, Usefulness Of Feedback

Figure 5 shows that feedback was used by students with 91% of students using the feedback to some degree. 21% of students always used the feedback, 39% often used the feedback and 31% sometimes used the feedback.

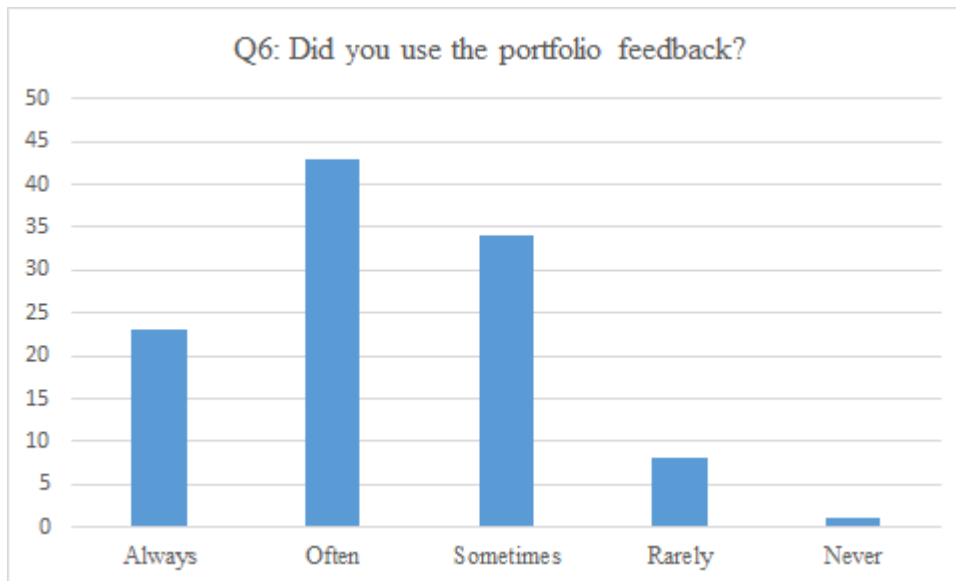


Figure 5: Question 6, Use of Feedback

The feedback was used by students to improve on and edit their current portfolio work (48%), to identify errors and improve future work (10%), or to identify where their skills and abilities needed to improve (20%). Some students also shared their feedback to gain insights from their peers (4%) or simply reflected themselves (9%).

The portfolios were used for a range of tasks and students identified report writing practice and reflection being the most useful as can be seen in figure 6. 47.3% of students found both report writing practice and reflection very useful and 48.2% and 44.5% identified each task as somewhat useful respectively. Videos had the highest percentage of students identifying them as not useful or not at all useful (13% in total).

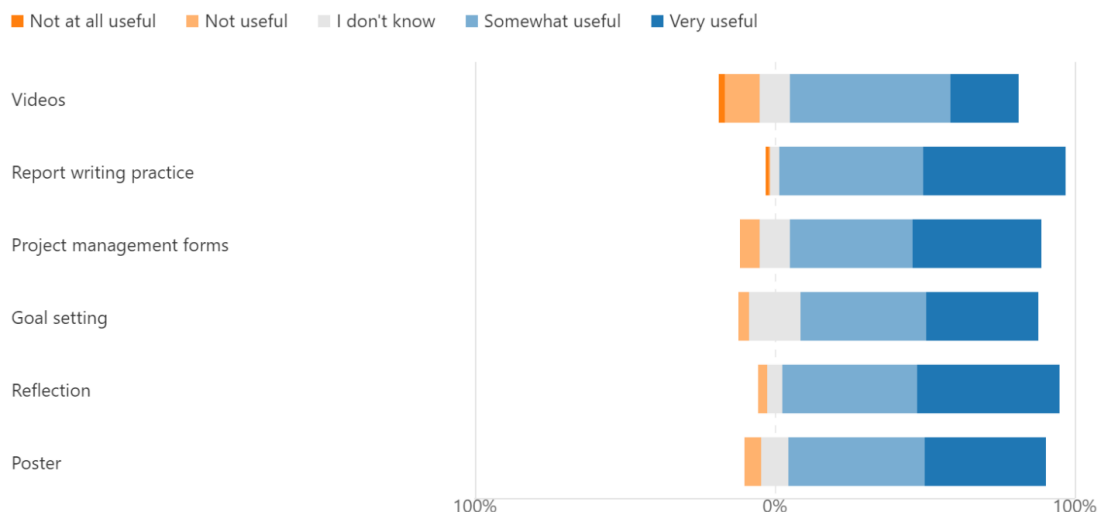


Figure 6: Question 9, Range of Tasks

Overall, students surveyed rated the effectiveness of portfolios as an assessment tool as 4.14 out 5, and when asked if using the portfolio had prepared them for further study as distance learning in light of the Covid-19 pandemic, 78% agreed or strongly agreed as can be seen in figure 7.

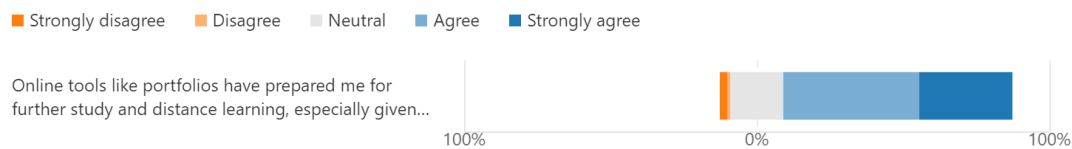


Figure 7: Question 10, Preparation for Online Learning

Discussion and Broader Applications

The results indicate an overall positive view of using portfolios in terms of skills development, range of tasks, feedback, and effectiveness of the portfolio, with the only significant negative being the internet connection, which was out of the teacher's control.

The use of an online tool was a new experience for students, and for some it was challenging. Training was given to the students in how to use and interact with QMPlus and the wide range of tools this learning platform offers. Training is important for students, so they are fully able to interact with, participate in and gain from activities, tools and even feedback (Harmer, 2007, p. 149). At QMES it was found that once students had been trained in using this new tool, students were able to use the online portfolio with ease. Some students have even flourished in their use of the portfolio, making their online record truly their own by adding pictures, links and developing a page that aids readability for the audience.

As the portfolio is primarily a written form of assessment, it is not surprising to see students assessing their academic writing and organisation skills developing well. A study by Romova and Andrew (2011) discussed the improvement in the writing skills of students when given the opportunity to draft and rework their writing by using a portfolio, in addition to teacher feedback. Whilst similar in nature, the present study uses portfolios that are online which allows for continual improvement and feedback, rather than at prescriptive times as in Romova and Andrew's study.

Reflection is also a key skill that students identified as improving and this is supported in the literature. Farahian, Avarzamani and Rajabi (2020) found in their study that portfolios improve students' reflective ability; however, they do note that time is needed to improve critical reflection. Students may have an advantage at QMES as they are actively taught what critical reflection is and given multiple opportunities to practise this throughout their modules.

The results also show that students identify IT skills, language fluency and learner autonomy as least developed skills. IT skills should have been developed due to the online portfolio being a new tool that students were unfamiliar with. The ease of the tool use and the fact that students are given training on how to use the portfolio is likely to lead to this lower perceived development. Language fluency may also be seen by students as something that is more developed in oral communication, which usually takes place within the classroom. As there is limited opportunity to practise oral skills on the portfolio, this could be the reason for this belief. From observations by teachers of portfolio use and the work produced within the portfolio, clearly learner autonomy has increased. However, the students did not feel this way. This raises the question as to whether students fully understood what learner autonomy meant, and this is something that would require further investigation.

Students provided positive responses about using their feedback and identified most tasks as useful. Using online platforms for learning provides many benefits, one of them being the ease of providing and using formative feedback (Carrier, 2017; Fernando, 2018). As Wingate (2006) summarised, teaching writing is most effective when it is an incremental process that receives regular feedback and portfolios provide an excellent platform to execute that. It also allows the teacher to easily track their students' work over an extended period, provide detailed feedback when convenient, and clearly see how the student has progressed. The researchers believe that this is the reason that students found most tasks beneficial – they were able to improve each task and see the effects of long-term development clearly. The only exception, the video, was reported as less useful than other tasks. This might be because of technical difficulties in filming the video or because the students felt that a monologue was less valuable than a meaningful conversation or a presentation in class or because the improvement was not as clear as with other writing-based tasks.

From this research, several broader applications could be considered and implemented in other modules. Firstly, due to the easily accessible format and availability of feedback, portfolios could be used to develop writing as a process for full pieces of coursework, for example, case studies or reports, instead of individual tasks. Portfolios could be used to stage the coursework, for example, by adding the plan then different sections such as introduction, literature review and so on, with feedback being added, enabling students to redraft their work before final submission. This would also be effective for distance learning, especially for those in different time zones. The ease of access for the teacher and student would enable continuous drafting and feedback to take place.

Portfolios could also be used in project-based learning. In QMES, the Materials Library project uses the online portfolio to create websites by creating collections of portfolio pages. Pedagogically this enabled students to upgrade their abilities with a tool they were familiar with, whilst focussing on the project outcomes (Nightingale and Spowage, 2021). This type of innovation allows students to develop the important technical/software skills that employers require, especially within ever-changing industries (Andreea and Bucur, 2020) as well as maintain the essence of a portfolio which is a collection of summative work created and developed by students.

Conclusions

This paper presented an overview of how online portfolios were used in QMES. The paper presented results from the student survey about the usefulness of the portfolios.

Overall, the results show that students had positive attitudes towards portfolio use, indicating that they have developed several useful, transferable skills, in addition to improving their academic writing skills. This is especially encouraging given the effect Covid-19 has had on higher education worldwide. The findings of this research encourage the use of online portfolios as part of blended learning and online courses to enhance activities out of class and provide students with a variety of tasks to encourage learner autonomy.

From the teacher's perspective, students engage well with online portfolios and provided adequate training is given when using a new tool, there are limited issues

overall. The internet connection was an issue in this study due to the use of a foreign learning platform in China. However, other online platforms with similar functionality to the Moodle platform used here could be used to implement an approach like this to provide accessibility to all.

The research clearly advocates that online portfolios are valuable tools and therefore could be used to facilitate other tasks in other modules. Given the flexibility the online portfolio offers, any number of tasks, from shorter tasks like reflections to larger projects like case studies, could be transferred into this format. This not only gives the student a wider-ranging academic experience, but also enhances the provision of resources for online learning.

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