

## INTRODUCTION

The MMU Foundation Year provides an alternative entry route for students who lack relevant qualifications for direct entry onto degree courses. The programme involves 30 departments from six faculties and is the largest collaborative provision within MMU with a current cohort of around 1000 students. Investigation of factors influencing results of Foundation Year undergraduate assessments identified a significant proportion of students that struggled with examinations due to poor or virtually non-existent lecture notes. The introduction of a structured portfolio as part of coursework in the *Biodiversity and Ecology* module provided a learning tool for both formative and summative assessment.

## AIMS

- explore the use of e-portfolios in Foundation Year learning, teaching and assessment
- identify relative costs and benefits of transferring from a traditional paper-based portfolio
- assess relative uptake of formative feedback opportunities
- evaluate the student and tutor experience of using e-portfolios and paper portfolios

## METHOD

The subject group for this project were students enrolled on *Biodiversity and Ecology*, one of three core Biology units taken by all Foundation Year Biosciences students. Students were required to present a summary of each lecture and tutorial attended to form the basis for a useful set of revision notes. This assessment was expanded to include tutor-driven, structured 'portfolio tasks', personal reflection and other input. Students were provided with a portfolio template that utilised features embedded in the PebblePAD portfolio software. This included dedicated spaces for lecture summaries, case studies, practical exercises and reflective diaries.

## Evaluation

An online structured questionnaire survey of the 2009-2010 student group (n=45) was used to evaluate their experience of using PebblePAD. This feedback was compared with that provided by students in the 2008-2009 cohort (n=63) who had built paper-based portfolios. Students were asked where and for how long they used the software; also about any technical difficulties encountered or the need for more training. Open questions allowed free expression of perceived good and bad aspects of portfolio-building using PebblePAD.

## RESULTS a) Quantitative outcomes

Overall quantitative unit outcomes were unaffected by the switch to electronic format for this element of assessment, with the distribution of total unit marks being similar for both cohorts (Figure 1); 64% of the e-portfolio trial group passed this element compared to 68% of the paper-based group. However, the overall pattern differs slightly between the two groups (Figure 2). The e-portfolio cohort had a slightly lower number of non-submissions, balanced by an increase in students who either failed this element or achieved only a poor pass. 'First class' portfolios were more common in the paper group.

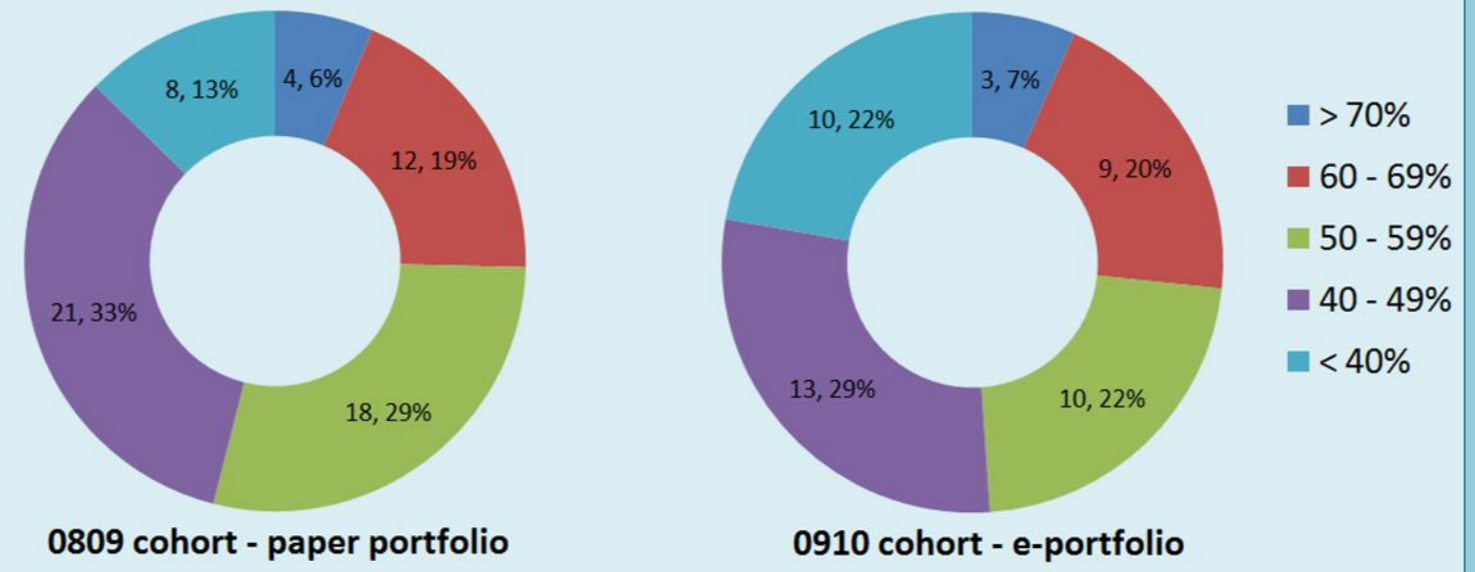


Figure 1. Distribution of total unit mark scores among students for the 0809 (paper portfolio) and 0910 (e-portfolio) student cohorts.

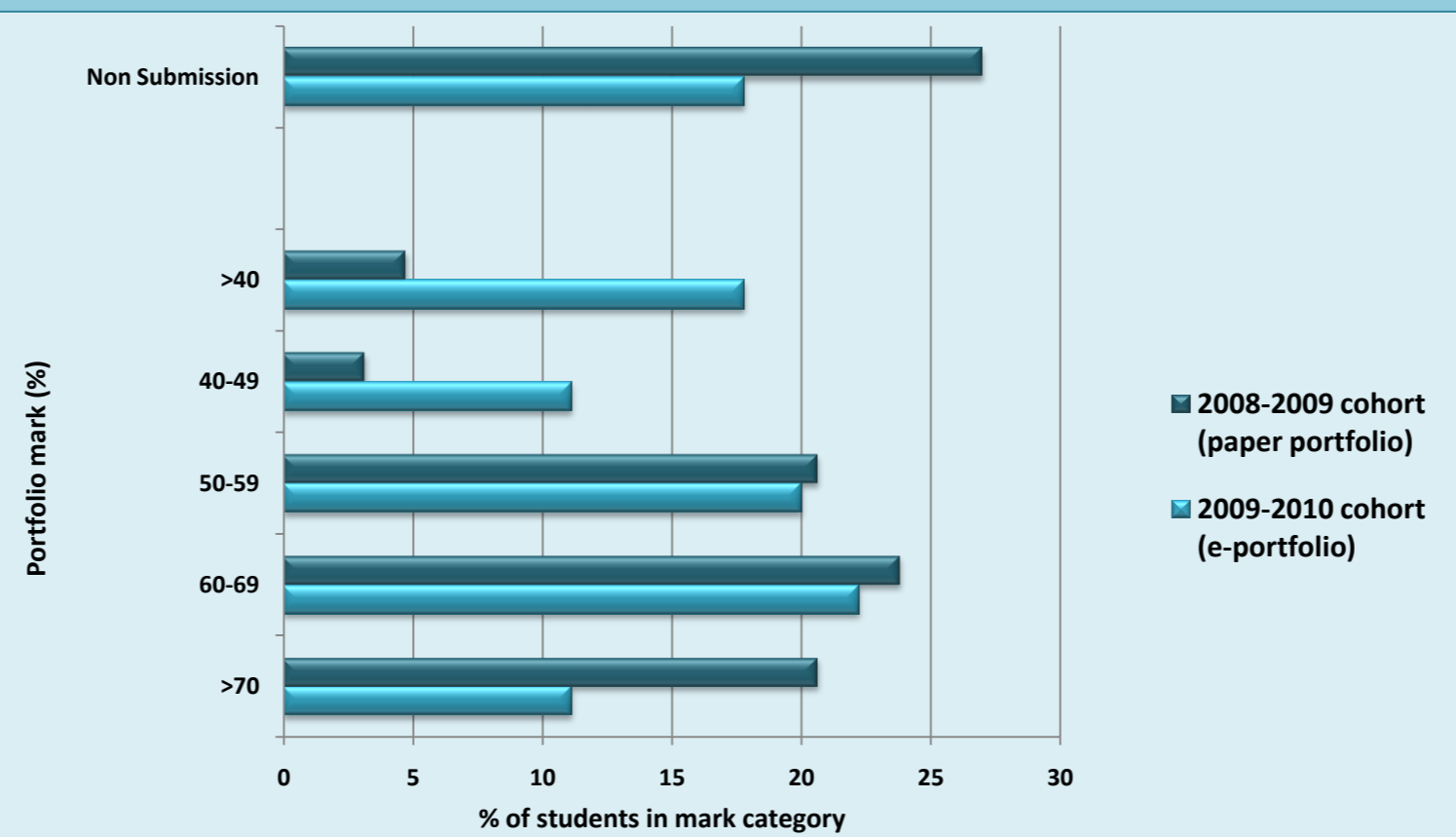


Figure 2. A comparison of marks achieved by students submitting paper portfolios and e-portfolios; non submissions are also shown.

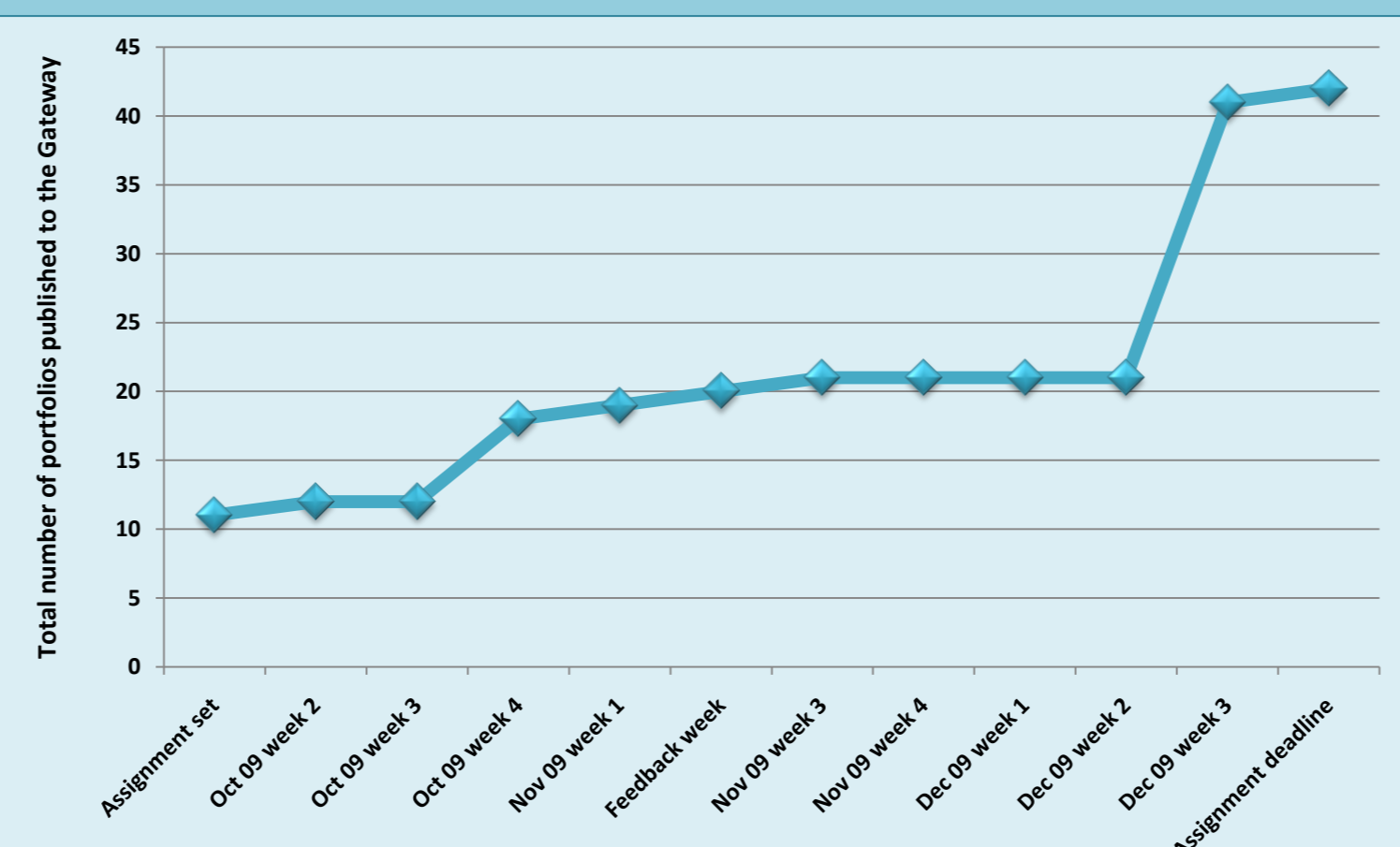


Figure 3. Cumulative count of number of portfolios published to the gateway in the weeks between the first assignment briefing and the final submission deadline.

## RESULTS b) Student engagement

Within the PebblePAD system, student portfolios only become visible to tutors when they are published to the designated gateway. This remains open so that changes may be made to work until the assignment deadline is reached; at this point the gateway is locked and assessment can take place. Hence the date at which work is first published may be used, with caution, as a crude measure of student engagement. Figure 3 shows the cumulative count of portfolio publications from first briefing and training to final deadline. An interim deadline when formative feedback was formally offered is shown on the timeline; 48% of students had published their work by this date, a figure that seems to compare favourably with the 20% interim submission figure achieved by the paper-based comparison group. However, only 28% of the submitted e-portfolios had any tangible assessable content, somewhat negating the positive outcome.

## RESULTS c) Student feedback

Positive comments emerged from both the electronic and paper based evaluations of the portfolio, with many students citing the benefits of being forced to be organised and to review lecture notes and other unit work. The usefulness of the portfolio as an aid to learning and potential revision aid was also frequently raised:

"It makes you do the work and is a good revision aid."  
 "Doing the portfolio made me go over my notes and helped embed material in my memory."  
 "Because the portfolio is part of the coursework you have to look back at work and revise – you don't have a choice – this is a good idea as it motivates you."

Students using the e-portfolio liked the benefits of not having to print out and transport a large piece of work (very 'green'), not being able to lose records and being able to access the work from 'anywhere'.

Negative comments centred on the time consuming nature of completing the records and the perceived limitations of the PebblePAD software. Most students created their work using Word but found that much of the formatting and some incorporated visual material was lost upon importation, limiting the creativity and diversity of their output. Many (58%) experienced some technical problems and 70% felt that they would have benefitted from more training sessions. Some individuals with personal learning plans and mature students with limited computer skills felt disadvantaged by the format.

## CONCLUSIONS

- Portfolios good; e-portfolios no better.
- portfolios are a useful learning tool and contribute to a 'blended learning' approach to skills competence and reflective learning
  - PebblePAD software too inflexible to accommodate diversity of our learners
  - e-portfolios best facilitated by the use of familiar generic software that allows users to construct their own personalised learning framework

*This project was funded by a Dalton Academy Learning and Teaching Grant, and forms part of the University-wide evaluation of PebblePAD.*