

Plumpton College

21st century digital tools raise the stakes in land-based learning (June 2018)

Summary

Up-to-date technical and digital skills are as vital in land-based industries as they are elsewhere. As a result, the goal of Plumpton College is to ensure edtech is used effectively on all its full-time land-based and business courses.

With funding from the **Education and Training Foundation (ETF)**, the college's learning technologies team has evaluated models of blended learning to help staff understand what will work best on their courses. Since completing the project, learning technology manager, James Maltby, has continued to secure funding to evaluate ways of implementing innovative technologies such as virtual reality (VR) in the mainstream curriculum.

Organisation

From forestry to wine production, Sussex-based Plumpton College offers a variety of further and higher education courses for learners seeking land-based vocational education and training. Its broad remit extends from entry level to master's degrees and includes a programme of academic learning for 14-16 year olds.

The college aims to provide an inspiring and innovative learning experience, in which the use of digital technology plays a key part. To achieve this goal, there is a clear recognition that the development of staff digital capabilities has to be at the forefront of continuing professional development (CPD).

The challenge

Knowing how to work the nuts and bolts of cutting-edge technologies is a clear issue for teachers who lack confidence with technology. But knowing exactly *how* to embed digital activities in the curriculum can be just as great a challenge. It is not always the case that learning technologists have the detailed subject knowledge needed to identify the best model of blended learning for individual subject areas.

Plumpton College's learning technology team realised it would help staff make informed judgements for themselves about the best tools and approaches to select if they had a framework to work with which clearly outlined the differences between models of blended learning.

The solution

The team's blended learning evaluation project identified five different approaches to trial with over 700 learners on college courses in animal management, motor vehicle mechanics, veterinary nursing, English and maths. Learners were also contacted directly via the college's library and VLE induction programme. Many more were involved indirectly through the blended learning modules developed for a level 4 teacher training course and the college's continuing professional development (CPD) programme.

The next step was to compare staff and learners' reactions to ten digital tools, ranging from Moodle and Microsoft Office 365 to Nearpod and Padlet. VR headsets combined with smart phones were included in this phase of the evaluation.

The learning technology team presented on the project's outcomes in optional twilight sessions for staff as part of Plumpton's 'blended learning month' initiative and showcased the use of VR in examples created with two participating departments. These were a VR 'spot the hazard' learning experience for motor vehicle mechanics and a 360° video of an archaeological dig on the Plumpton estate.

Drawing conclusions

"Technology is now almost ubiquitous in further education, but that doesn't mean teachers and trainers, or employers for that matter, are able to integrate digital techniques effectively with their normal working practices. We need to be able to provide our staff and partners with tried and tested models of blended learning."

James Maltby, learning technology manager, Plumpton College

The project's final report, **Practical blended learning: evaluating the use of technology in vocational teaching**, has brought greater clarity over the direction of travel for Plumpton College, but its findings offer pointers for the sector as a whole.

The key points are:

- A blend of traditional teaching and technology is more effective than using either in isolation

- Technology offers significant opportunities for differentiation and enhancement of the learning experience. However, it is the simplest tools that can have the greatest impact on learning; accessible to all levels of technical ability, these can be more readily and consistently deployed. In this respect, innovative tools such as VR can fall short
- For optimum use of all blended learning technologies, teachers in the vocational sector need a full range of digital literacy skills. For this, they need an infrastructure (technical and cultural) that allows them to scaffold their developing skills through their classroom practice
- Drawing a clear distinction between different models of blended learning helps subject specialists arrive at the right solutions for themselves. The Plumpton team defined five such models:
 - **Lab:** the most teacher-centric e.g. PowerPoint presentation to whole groups or whole-group activities in an IT lab
 - **Stations:** different activities using different tools in the same classroom
 - **Flipped:** use of online resources before a class
 - **Flexible:** students choose whether to attend a class or work online independently e.g. for revision, and
 - **Virtual:** e.g. a lesson delivered entirely via the VLE

To grow in confidence, staff also need a stage-by-stage framework as a reference point. For this purpose, the project team has created an FE-relevant version of the **Edinburgh Napier University 3E Framework** which they shared with staff via workshops and the college's CPD programme. The three stages of the framework – Embrace, Enhance and Empower – represent steps taken by teachers as they start to use a new technology

Moving forward

Working with local technology companies, the University of Sussex and Brighton University, the learning technology team at Plumpton has continued to trial ways of implementing tech in learning and teaching in order to reduce the risks associated with more innovative tools such as VR.

Since the costs of some VR systems prohibit large-scale use and may be complex for many teachers to use, 360° cameras such as the Ricoh Theta S have proved an effective way forward in this land-based context. These spherical VR digital cameras and lower-cost headsets are simple to operate and easily obtained. Experimenting with these alongside other VR systems, the team found the less expensive option can hold its own alongside the top-of-the-range models.

As a result of their pilots, the team says VR offers significant benefits in a number of different scenarios:

- **When you have never done something before:** VR provides the opportunity to learn without risk, for example, through experiencing hazards in a virtual workplace or operating dangerous equipment virtually before trying it 'for real'

- **When you need to recall what you have learned:** VR is a powerful way of helping learners acquire and recall skills and knowledge
- **When you are involved in situated learning:** VR makes learning environments accessible for all learners, for example, through virtual tours of horticultural, forestry, foreign locations or other environments that are impossible for all or some learners to access. Adding in augmented reality information hotspots, accessed via mobile phones, can make these learning experiences interactive as well
- **When you need to assess your skills:** formative assessment of activities typically undertaken by observation, for example animal management or equipment handling, is another immediately relevant role for VR. Staff report that learners also enjoy making 360°degree videos for themselves and to demonstrate their achievements in their e-portfolios.

Despite the need to develop staff confidence with this technology, James Maltby argues the case for keeping it high on the blended learning agenda.

"Teaching is about adaptability. We don't know how the digital landscape will look in a year's time, never mind five, so we need to enable staff to be as adaptive as possible. Keeping a broad base is essential for a land-based college, and since VR is becoming more widely available in the world outside college, we need to prepare our learners for using it."

James Maltby

Find out more

Email: James.Maltby@plumpton.ac.uk

Technologies used or trialled in this case study include:

Ricoh Theta S Spherical VR digital camera - Guidance can be obtained from the **Theta developers' forum** on using 360° videos with Google Street View and a smart phone.

Google cardboard camera app (Android)

Google cardboard camera app (iOS)

Google Street View (for Android and iOS)

Microsoft 365 education

Nearpod

Padlet

The Plumpton College framework is available to the sector as an **open course** on the college's VLE.