## EFFECTIVE PRACTICE IN A DIGITAL AGE: A GUIDE TO TECHNOLOGY-ENHANCED LEARNING AND TEACHING

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### Abstract

Effective Practice in a Digital Age is designed for those in further and higher education whose focus is on designing and supporting learning: academic staff, lecturers, tutors and learning support staff, facilitators, learning technologists and staff developers, and others with an interest in enhancing the quality of learning and teaching, and a curiosity about how technology can assist them. It is advances school reform by increasing equity and access to educational opportunities, improving effectiveness and productivity of teachers and administrators, providing student-centered learning to ensure college and career readiness for all students, and recognizing teachers as education designers.

### I. INTRODUCTION

Digital learning is any instructional practice that effectively uses technology to strengthen a student’s learning experience. It emphasizes high-quality instruction and provides access to challenging content, feedback through formative assessment, opportunities for learning anytime and anywhere, and individualized instruction to ensure all students reach their full potential to succeeding college and a career. It encompasses many different facets, tools, and applications to support and empower teachers and students, including online courses, blended or hybrid learning, or digital content and resources. Additionally, digital learning can be used for professional learning opportunities for teachers and to provide personalized learning experiences for students.

### II. EFFECTIVE PRACTICE IN A DIGITAL AGE

A wiki is a series of web pages which users can add to or edit via any internet browser. Wikis used for collaborative activities can be password protected to restrict entry...
to members of an online community, and can include a discussion forum and facilities for user tracking and access controls.

Wikis enable groups of learners based in different locations to collaborate on the research and production of assignments. A wiki is an online resource that is easily created and updated and, since its content depends on the activity of the group, a wiki can build a sense of community among its users.

- A wiki can establish a sense of community and task ownership. The usefulness of sharing ideas on a wiki increases if the tutor contributes, but avoids taking charge.
- Learners’ confidence in and access to IT can vary, so the choice a tutor makes from available technologies should take into account learners’ lifestyles and learning preferences.

**BLOG**

A blog (web log) is an online reflective journal in which other internet users can post comments. Blogging tools integrated into VLEs allow access to be restricted to members of a closed group (for example, a course, module or tutorial group) to support formal learning activities. Blogging is a well-established vehicle for personal reflection and commentary, although less frequently used under assessed conditions. Nonetheless, blogging can play an effective part in the delivery of formal curricula.

- Assessed blogging can help to engage students in more challenging academic topics.
- Integrating comments from the blog into tutorial discussions extracts full value from the activity: a course blog should be central rather than peripheral to a course.

**DIGITAL AUDIO**

Digital audio files enable sound information to be stored or played on a computer or mobile device and shared electronically with others. A digital audio recorder that records to MP3 format and has a USB port to upload files to a computer is one option. Another is to download audio recording and editing software such as Audacity.

Digital audio files, like any pedagogical tool, need to be used appropriately: the most likely application is when detailed, time-consuming feedback is normally given. Audio feedback may not be a ‘magic bullet’ solution for all assessment issues, but is likely to provide a more personal, accessible and relevant experience for students. It may also in some circumstances save staff time.

- Feedback is essential to student learning. Providing feedback in different media reinforces the message and gives students a more personal learning experience.
- Administrative approval should be obtained if audio files are used to give comments and marks on summative assessments.

**VIRTUAL LEARNING ENVIRONMENT (VLE)**

A VLE is an online system comprising a range of tools to support learning and the management of learning. For example, VLEs provide online access to learning resources and support peer-to-peer and learner-to-tutor communication.
Developing a course presence on a VLE has many advantages. Online resources extend learning beyond the classroom. Learners are better able to take a more active role in managing their learning.

- E-Learning content frequently requires adaptation for use in another context. Helping tutors to resource their courses appropriately is as important as developing their ICT skills.
- Skilful combinations of online resources and face-to-face activities can promote independent, self-directed learning.

**IPOD TOUCH**

An iPod touch is a pocket-sized media player and Wi-Fi mobile platform designed for viewing multimedia productions. Like the iPod, the touch provides access to online resources in multiple locations, including academic content available free via the iTunes U service.

To help undergraduates develop professional expertise in sports-related professions, video tutorials demonstrating procedures followed in tests or treatments have been created at Southampton Solent University with the assistance of a centralised university support team.

- Multimedia resources accessible on mobile devices support situated learning and provide opportunities for reinforcement and revision.
- Video tutorials can level the playing field for students with some disabilities and those dependent on a visual learning style.

**PODCAST**

A podcast is a recording, for example of the content of a lecture, made available for download from a website or VLE by syndication – a process of making content available to other sites by means of RSS feeds.

The podcasts are released before rather than after a face-to-face session to enable students to prepare in advance. Evidence suggests that many students appreciate the flexibility this offers them and spend longer with the content of a podcast – for example, replaying the presentation or researching recommended links – than the two-hour lecture the podcast replaces. The face-to-face session then follows up on questions that students’ deeper engagement with the theoretical content has generated – podcasts often conclude with tasks and prompts for further research.

A blended learning approach – one that combines established ways of learning and teaching with the affordances of technology – can introduce opportunities for interactivity and self-directed, self-paced learning. Podcasts in themselves do not enhance the learning experience. More important is the coherence of the blend between technology and traditional aspects of learning and teaching.

- Instructions should be included in a podcast to assist students in using audio files for learning.
III. WEB 2.0 TECHNOLOGIES

Web 2.0 technologies enable users to be contributors to the internet as well as consumers. Web 2.0 tools and services include media-sharing websites, social networking sites, collaborative publishing tools, such as wikis and blogs, and social bookmarking tools such as del.icio.us. In the redesigned curriculum, students present examples from blogs and media-sharing websites to one another and discuss issues that arise, ranging from design features and technical matters to the management of the ‘digital self’. Web 2.0 technologies provide innovative opportunities for critical reflection. A platform-agnostic approach appears to foster greater learner autonomy.

- Using external websites as host platforms for production work presents potential risks. Backing up files located outside the institution’s VLE is recommended.

DIGITAL VIDEO

Digital video resources meet a wide spectrum of educational needs, from illustrating what cannot be experienced firsthand to developing specialist skills. The in-house production of video for educational purposes has been made easier by portable digital cameras and digital editing software.

Virtual scenarios that replicate complex real-world situations help to establish the connections between theoretical knowledge and practical expertise. Credible, coherently structured resources form the basis of such approaches to learning. Problem-based learning scenarios based around virtual resources enable students to learn from their mistakes in safety.

- Simulations can be significantly enhanced by evidence on video; as a medium, video can evoke powerful affective responses but requires careful planning and attention to quality.

E-PORTFOLIO

An e-portfolio is a body of digital evidence assembled and managed by a learner to demonstrate abilities and achievements and/or to reflect on experiences and plan for the future. A range of tools and systems are available to support the processes involved; some systems include communication tools so that the user can benefit from collaboration with and feedback from others.

E-Portfolios can add value in this context by providing a single focal point for all types of learning: at the heart of an e-portfolio is an online personal space in which learners can reflect on their personal development planning and wider experiences. This record can be edited and updated, eventually forming the basis for presentations to external audiences at key points in a learning journey.

- Learners need assistance in understanding the advantages and disadvantages of using different platforms for their learning. Pedagogy rather than technology should be the guiding factor.

- Opportunities for self-evaluation need to be introduced early to help learners grasp the importance of reflective, e-portfolio-based learning.

MULTI-USER VIRTUAL ENVIRONMENT (MUVE)
A MUVE is a virtual world in 3D or with graphic animations that can be accessed simultaneously over the internet by many users.

In a 3D multi-user virtual environment (MUVE) such as Second Life, discussions become more real as a result of the presence and movement of avatars. Tutors can situate learning within a context devised for that activity. Students presented with challenges to solve, or hypotheses to prove are more likely to define their own pathways to their learning goals, collaborating and interacting with others as necessary.

- A MUVE such as Second Life offers fertile ground for problem-based approaches to learning. Students can investigate solutions to questions and hypotheses, test out and compare different perspectives, and reflect on individual choices without moving out of the virtual world.
- Students quickly adapt to operating within Second Life. However, large groups are challenging to facilitate and too many participants can prevent successful interaction.

IV. CONCLUSION

Introducing technology into learning and teaching appears at first to be a matter of applying a new tool to an old task: ‘What can we achieve with it, what support will we require, what are the pitfalls, and will this tool be better for my purpose than others we have used?’ are common first reactions. However, fundamental shifts in pedagogic approach and in the learner–tutor relationship can result from the use of technology in everyday practice. At this point, both experienced and inexperienced teachers feel the need for guidance on how to integrate technology-mediated practice with other learning and teaching strategies.

V. REFERENCES

[8] www.jisc.ac.uk/practice
[9] eLIDA CAMEL project