



Digital experiences students should have

Teaching staff often ask what kind of activities really help students to develop their digital confidence and academic success. This is not a checklist for assessing the digital content of a course of study: it is a set of ideas to inform your teaching practice. Some of them may be familiar to you, and some may not feel appropriate to your subject area or pedagogical practice. Hopefully you will be inspired to try at least one or two.

There are more detailed exemplars on the Digital Student blog, especially under the challenge area 'Deliver a relevant digital curriculum'.

With thanks for comments and additional examples to Googledoc contributors Jane Challinor and Guy Seward.

1. Capture learning events for reflection

Students use a digital camera or other capture device (audio, tablet, mobile phone etc) to record aspects of a learning event. They manage and access those records for later reflection and/or to evidence their learning. Tagging and annotating such records are useful both to reinforce learning at the time and to support revision. Relevant events may take place in a workshop or discussion session, in the field or lab (in which case dedicated devices may be needed for hygiene and safety reasons), in a workplace, or in an informal setting.

Example: [GIS iPad project at University of Greenwich](#)

2. Social referencing

Students share references relevant to a topic area. Technology used could be a public referencing service such as delicious, CiteULike, Connotea, or a curation service such as pearltree, padlet, Diigo or evernote, or a reference management programme that also supports sharing such as zotero or mendeley. References to e-journals and e-books can be mixed with e.g. open data, open publications, material from academic/professional web sites. Shared references can be used to support individual assignments such as summarising, paraphrasing, producing an annotated bibliography. Results can be reviewed, rated or commented on by students. Sharing publicly allows

students to engage with a wider professional or academic community, follow others with an interest in the same topics, and see their collection being more widely used.

Example: [Prezi on using diigo](#)

3. Present academic ideas using digital media

Digital media for academic presentations include dedicated tools e.g. powerpoint, keynote, prezzi. Presentations can also incorporate or be based entirely around other media: video, audio, animations, graphics (photos and data visualisations), voice-overs, maps and mind-maps, hypertext. Students take pride in using professional presentation tools. This can be a group activity, allowing students to share their different skills. Students will need examples of 'good' work in the new medium if they are to get away from bullet points, and if they are to use media other than text in more than an ornamental way.

Example: [Advice to students on using prezzi](#)

4. Design and administer an online questionnaire

Students use an online service such as SurveyMonkey, Bristol Online Surveys (BOS) or Google Forms to design and administer an online questionnaire. This allows them to collect original data around a subject relevant to their course. Or they might collect student feedback in relation to another digital experience: 'make a difference to the digital environment'. Students can use these same services to produce data analyses and a variety of graphs and tables – a first step towards using more advanced data analysis tools such as SPSS.

Examples: Survey Monkey has a few [tips on getting started and examples of 'student surveys'](#) (surveys of rather than by students but a reasonable place to start)

5. Create and share tags (keywords) in a topic area

Tags are keywords associated with data objects which may be documents, images, videos, links etc. Tags can be selected from a closed vocabulary of terms, or can be generated by students themselves. You might like to explore the implications of the two different approaches. Try having students tag uploaded youtube videos, blog posts, images, then use the tags to browse and organise items. Tagging provides the groundwork for more advanced data management and analysis.

Examples: [Article on wikispaces about using tagging with students](#)

6. Virtual peer review or workshop/crit

Many file sharing sites and social forums support 'likes', 'props', reviews, comments and other responses to material posted by users. This can be replicated in an academic context using public social networks, document sharing, or closed institutional environments such as a virtual learning environment. It is important when conducting peer review to give students clear guidance on how to express their views and on how they will benefit, both as reviewers and reviewees. Make explicit the criteria you expect them to use for judgement. It can help to have students work in pairs/threes on each others' work, or to require that they comment on (say) two pieces of work that have not had more than two comments previously.

Example: [Paper on electronic peer crit](#) from HEA/STEM annual conference 2013

7. Data visualisation and communication

Digital data is converted into an arresting or informative graphic, which may be a well designed table or graph, a carefully crafted infographic, or a layered image such as a map overlaid on Google Earth. Students learn not only that data is open to different interpretations, but also that it can be a powerful means of communicating ideas. Introduce students to the data analysis functionality of software systems, and also encourage them to explore free infographics packages or use unusual means of communicating data such as animations and video. While students need to understand the principles of academic communication, outputs can also be judged on visual impact and flair.

Example: [Sue Beckingham's Edshelf tools for Data Visualisation](#)

8. Use a simulation to support real-world practice

A simulation is any representation of the world that can be explored, and that offers some interactivity (response to user choices). Simulations may involve a range of media – sound, image, video, even haptic (touch-based) representations – to provide a true-to-life experience, but this is not essential. Simulations are of obvious benefit where the real experience presents unacceptable risk, either to the student (such as learning to put out a fire) or to others (such as learning surgery), but there are many ways in which simulations can augment real-world learning: preparation and practice before a real-world event; revision and review afterwards; giving access to information in a

memorable way; as a collaborative environment in which students solve problems together; and to provide a more carefully structured learning experience than is possible in the real world.

Examples: [Using 3D content in simulations](#) (blog post); Skills2Learn [VR and simulation based vocational programmes](#)

9. Nurture a professional online identity

Students create a profile page on a professional social network and link it to their online CV, e-portfolio or blog. Linked-In is the obvious network to use for this, and many educators find their students' Linked-In profiles are valuable resources for teaching/personal development. A positive, course-level engagement with Linked-In also makes it easier to involve employers and alumni in the curriculum, and brings students into a global network of interlinked professional communities. In some settings an online portfolio might be more relevant and useful. However, the choice of platform and network matters less than students developing a sense of themselves in the context of a community of practice.

Examples: [CluedUp from London Met](#); [guidance for students on appropriate uses of social media](#)

10. Write or edit a public wiki page

The structure of a wiki allows students to make small contributions that quickly add up to a more realised piece of work. The wiki writing process also surfaces differences of interpretation and emphasis, and downright disagreements of fact. Find a wikipedia page in your subject area that has been a site of controversy and have students explore the history of edits and comments. This helps them get a sense of a larger community of practice and interest around the topic, and demonstrates how professional/academic discourse plays out in the public space (how do the rules of wikipedia compare with those of general academic discourse?). The next step on from authoring in a closed environment such as a VLE is to produce a public wiki or – usually both more feasible and more interesting – contribute to an existing wiki with an established readership and a wider community of interest.

Example: [wikipedia training for student editors](#); [case study from Havering College](#)

11. (Campus) mapping

Students build, contribute to or use a digital map. Location is significant in a wide range of subjects, not just those obviously aligned to geography, and fieldwork is a valuable context in which to test out geolocation skills. However, all students can use the campus as a site for engaging with digital maps. Newly arrived students might use GPS data from their smartphone, QR codes in the campus environment, or an augmented reality app such as Layar, to check their location and access information about it. More established students might create or enrich a campus map, for example using geotags to upload tagged photographs or information, or producing layers on a Google Map from local data. Different subject areas might find different uses for the campus environment and for the capacity to map it in different ways.

Examples: [Sheffield College Green Trail](#); [University of Exeter biodiversity mapping](#)

12. Hand over the tools!

Unexpected things can happen when digital tools are handed over to students, either individually (e.g. for a semester) or in groups for a particular activity. Teachers are forced to think differently about how the technology might be used in each learning session or activity, while students become increasingly creative about how they respond to briefs. Cameras are often used, but other tools could also be considered e.g. data recorders, tablets, subject-specialist equipment.

Example: [Digital cameras in use at Greenwich](#)

13. Collaborative authoring

Students use web tools e.g. Dropbox, Google Docs, to support groupwork, collaborative writing, or research-type activities. This can be especially satisfying if students are working on a project with students/researchers/professionals from another institution. But even within the same cohort, collaborative writing is powerful. It supports general skills such as project management, task allocation, taking on roles and responsibilities, knowing one's strengths. It also brings into focus the process of writing, whether a conventional text or a more elaborate multimedia output. Think about how the collaborative product will be judged and whether you want to assess the group or individual contributions/reflections. Consider also how private/public you want the work in progress to be and how you will make this feel safe for students – remembering that students often prefer privacy but they learn from seeing what other students are doing and what feedback they are getting.

Examples: [case study from JISC RSC Scotland using googledocs](#)

14. Design learning materials for other students

Students investigate a topic by designing materials for other students to learn from. This is particularly useful for challenging and 'threshold' concepts – there is nothing like teaching a concept to be sure you have understood it fully. Also, students are well placed to see the problems other students may have. And finally, students can take the opportunity to use their digital skills. Encourage them to produce video, animations, apps, quizzes, but ensure they understand that they are being assessed on how well they communicate ideas rather than on the bells and whistles. It helps to have good examples to hand.

Examples: [Chemtube](#), built by undergraduates for undergraduates: [Opal project](#) at Reading

15. Back to basics (digital deconstruction)

Students carry out by hand, on paper, or face-to-face an activity that is more usually conducted digitally. Ideas for this include statistical analysis, qualitative data analysis, design, giving a presentation with slides, mind-mapping, 'cut and paste' editing, sharing ideas via twitter, commenting on/reviewing other students' work. One reason for this exercise is to help students understand the underlying practice more deeply. Another is to highlight digital dependencies.

Examples: [using lego to model ideas \(Lego Serious Play\)](#)

16. Digital critique

Students examine a digital communication in detail, ideally one relevant to their subject area and controversial within it. Students should be guided to attend to issues such as credibility - referencing, evidence base, uses of data - argument, tone, implied audience, and provenance - who is hosting and propagating this message? What interests might they have? Good follow up exercises can be: prepare a comment, drawing attention to particular strengths or weaknesses of the argument; construct your own digital message which aims to persuade an audience of a particular viewpoint; write a summary with key points for/against and an evaluated conclusion.

Example: [New Media Literacy: a blog post by Lynsay Grant](#)

17. Online orientation (pre-arrival or in transition between stages of study)

Students take part in an online course or forum designed to support transition. Activities in the forum could include: opportunities to meet, form groups and make contacts; campus orientation; sign-on to university systems; presentations/videos from existing students; examples of student work and of how they will be studying on course; reflective and diagnostic exercises. Some or all of these activities could be facilitated by existing students. Some or all of these activities could be 'gamified' (see alternative digital experience on gamification).

Examples: [eLanguages at Southampton](#); [Use of facebook as a transition tool](#)

18. Help to develop the digital environment

Students with a variety of subject specialisms can work on real projects to support digital developments at the university. Roles might include: researching and gathering student views; participating in surveys, focus groups etc.; coming up with ideas; analysing data; project management; designing interfaces; developing apps and services. Development projects might focus on infrastructure such as enhanced networks and learning spaces, or small-scale facilities and apps. Jisc 'Summer of Innovation' projects have shown that student solutions can be better at meeting student needs. Students can be rewarded for participating in a number of ways, including direct payment, enhanced employability, course credits, or recognition under a graduate award scheme.

Example: [Institutional ideas elevator](#) leading to local challenges and (student-led) initiatives

19. Use gamification to support a threshold concept or challenging practice

Gamification is the presentation of a learning experience in a structured way so that learners receive motivational rewards for small achievements. Other aspects of gamification include competition and choice points. Rewards might be badges, shading on a progress bar, permission to move on to the next 'level' – or anything students find engaging. Simply letting students see how other students are doing can introduce an element of competition, but there could also be recognition for achieving a goal first or best. Competition between mixed groups is less likely to arouse negative feelings than between individuals. It requires some ingenuity to design an activity with gaming features, but it gives insight into the task and is great fun.

Example: [a mixed reality game used in academic development](#)

20. Receive feedback from an external organisation

This need not be a uniquely digital experience, but digital technology can often play a part, whether in establishing external relationships or in providing a medium through which excellent work can be publicly shared. Sponsoring a course-level award is an easy and rewarding way for employers to get involved in the curriculum. Students on placements can also be effectively supported and kept in touch with their course using digital communications and media. External stakeholders can be involved in commenting on student work as part of a 'virtual open day' or showcase event. Simply giving students the support they need to go public with key pieces of work will mean they can attract views and reviews, even if this is from their friends and family.

Example: [Reading PRIDE project blog post on working with students on placement](#)

21. Work with open data

Students identify open data sets relevant to a topic of study and produce their own analysis with accompanying commentary or case. And/or students collate data and make it openly available to other scholars. Students will have to deal with issues of ethical clearance, data protection and technical formats/platforms. They will also be introduced to the reasons why scholars choose to make data openly available, the reasons why public data may be openly available, and the values behind open data. Students might also like to think about - and if possible even to work with - the data collected about them e.g. by their educational institution.

Example: [The implications of 'big data' for learning and teaching](#) (article from the HEA mainly referencing applications in social science)

22. Work with students from another institution/culture

Students collaborate on a research/professional project in ways that will be relevant to today's global, multicultural workplaces. In working with other students they deal with cultural differences, time and task management, communicating across boundaries, accommodating alternative viewpoints. This exercise will almost certainly require the use of third party services i.e. beyond institutional firewalls - and that in itself will be a learning experience for students and for the institutions involved.

Example: [Jisc Case study on Warwick University Language Centre](#)

23. Engage in a lecture/seminar via interactive technologies

The most common interactive technologies used in 'traditional' teaching spaces are polling/response systems. These can be used for in-session quizzes, assessment of student needs (e.g. to identify issues with which students are struggling), to generate

data for the class to work with, to support live pairs/groupwork, or to gather student feedback on the learning experience. Mobile devices (e.g. with use of a twitter hashtag) can also be used to generate live discussion and participation. And web services such as padlet can be used to collate student ideas. These techniques make it worthwhile for students to turn up to lectures and support a 'flipped' approach whereby face to face time is used only to support active learning.

Example: [Case studies in 'enhancing lectures' from Jisc](#), including one on the use of electronic response systems at the University of Hertfordshire.