Support for users within an educational or e-learning context - *Nicola Osborne, Social Media Officer at EDINA*

Introduction

Learning has often been associated with particular physical spaces, whether formal classrooms or lecture theatres or more informal spaces such as a workshop or studio. However learning spaces have been changing and moving partly or fully online (Brown 2005) leading to new and different learning and teaching experiences.

Emergent technology - from the earliest data libraries and electronic resources to virtual learning environments (VLEs), communications tools and social media - have enabled a radical shift in how educational space may be defined (Lave & Wenger 1991), and an increasing blurring of the relationship between learning spaces and the other online spaces a learner may inhabit. Even the most traditional offline course should expect some or many participants to be engaged in recreational use of social media[i]. The potential for serendipitous discovery and interruption means that online learning experiences (whether formal or informal) may be highly differentiated (Livingstone & Helsper 2007, Eynon & Malmberg 2010, etc.).

> "For me, the net is a wonderful learning network and for some it is a lifeline and for others it is a tether to their boss or a source of harmful misinformation, disinformation, and distraction. Since when is the world starkly divided into either-or alternatives?"
>
> Howard Rheingold (quoted in Anderson and Rainie 2010: 13)

The modern learning experience takes place in a hybrid space that merges the physical and the digital, the formal with the informal, and increasingly shares responsibility between the educator and the empowered learner. These new spaces are unstable and may be conceptualised in highly personal (Usher 2002) and richly personalised ways (Ito 2010) making the relationships between educators, learners and those that support them increasingly complex and inter-dependent (Edwards 2006). This provides opportunities for digital resource providers to engage with users and the way in which resources are used and valued. However the rules and behaviours of e-learning and online social spaces are still (and likely will remain) in flux with privacy concerns and the potential for bullying both important current concerns, particularly as social media spaces are brought into the e-learning process (Davis & Lee 2008; Keashly & Neuman 2010).

"e-learning" is a term that can cover a huge range of pedagogies and qualities of experience: it may be treated as the "privileged" or most desirable environment for learning and teaching (Ross, Bayne, Macleod, O'Shea, 2011) or it may conversely stem from pragmatic needs to manage or increase student numbers and/or expectations (Eynon 2006 and 2008).

The combination of approach, educational style(s) and technologies employed can shape the needs or expectations of the e-learner. For instance flexible e-learning courses can fit well with learner-centric pedagogical approaches (and deal well with the fact that each learner accesses their course in highly individual contexts) but can present particular challenges for those who thrive in highly ordered structured space. There is not one single format, structure or type of e-learning experience, instead it is a continuum and tools including VLEs and specialist digital library resources may be employed in radically different ways.

These changes and technologies offer huge potential for enriched and engaged learning experiences but each new technology creates new challenges and further diversifies the needs and expectations of both educational professionals and learners (e.g. Dutton, Cheong and Park 2004, Eynon 2005, Woods, Baker and Hopper 2004).

Section 1 - popular uses of digital resources in learning

Beyond the library walls
Perhaps the most mainstream current digital resources for learning are electronic journals which have rapidly become ubiquitous thanks to their searchability, accessibility and the potential to connect to additional materials such as links to referenced materials, video and full colour imagery. Increasingly articles also connect to original data and are moving away from print counterparts to become transliterate (Thomas et al 2007) experiences: objects that weave text, audio, video, interactive models, dynamic visualisations, and actively updated discussion and reflection on the central academic object.

As electronic journals and ebooks have emerged online the process of reading and interpreting a journal article need no longer be a solitary experience with online citation and ratings tools[ii] (e.g. Mendeley[iii]), social bookmarking (e.g. delicious[iv], Evernote[v]) and annotation tools (e.g. A.nnotate[vi], diigo[vii], Google SideWiki[viii]), along with discussion spaces and instant messaging, adopted as tools for collective reading. One can collectively share thoughts in real time or asynchronously with fellow learners whether they are within institutional walls or outside of them. Indeed the openness of current digital environments for learning can be highly complex: learning may be enriched by serendipidous contact with interested outsiders however licensed content is usually tied to institution and it can be highly challenging for educators to remain active and aware of the diverse formal and informal learning spaces their students may use. Indeed the interplay between officially approved or recommended academic tools and commercial web tools (both specialist and non specialist) reflects the ongoing tension between the forces that push at change in learning more widely: what the educators and/or institutions promote or want learners to use versus what learners want to use, or in some cases, find easier to use.

Finding, tracking, and sharing electronic resources
The tools and websites that manage access to electronic resources have also become increasingly sophisticated moving beyond portals and traditional OPACs and catalogue-like interfaces, to federated searches, iGoogle[ix] and Facebook[x] widgets[xi] and mobile phone apps[xii] to sophisticated discovery tools which connect distributed web services “mashed up” with local resources[xiii]. The user experience has moved from traditional search and/or browse interfaces to those which promote serendipitous discovery through faceted search, tag clouds, etc.

Connecting electronic resources to teaching and learning
These sit alongside (and in some cases are embedded into) virtual learning environments such as WebCT/Blackboard[xiv], SAKAI[xv], Moodle[xvi], or Elgg[xvii] or Ning[xviii] in which course notes routinely sit alongside digital library tools and resources and active class discussion spaces. These resources support and are supported by in-person teaching, tutorials, guidance etc.

Whilst the delivery of pure e-learning is still a relatively niche practice[xix] this type of hybrid learning experience is commonplace with students accessing course materials online and using digital devices as part of the learning process whether laptops at lectures or checking course materials via mobile phones[xx]. Group work is as likely to involve students or colleagues gathering around a computer or smartboard and taking part in a digital and/or online project as to be about working around a flip chart or whiteboard. With mainstream education embracing the digital library and online world it is hardly surprising that learning activities have merged into informal spaces, including social media, gaming environments (e.g. Prensky 2001, Gee 2003, Whitton 2010), that learners are already familiar with. However the move to both formal support for learners and informal peer support in digital spaces can risk alienating learners with little experience or confidence with computers or the internet, or simply those with weaker social connections to their peers.

Beyond the (virtual) institutional walls
When learning communities expand in irregular patterns into informal, often commercially operated spaces they transgress the boundaries and control of the academy, opening up potential inequalities for learners, and greater potential for the circulation of information (and misinformation). The concept of scaffolding students (supporting, encouraging, and occasional pushing or correction by more experienced peers or teachers) as they reach the bounds of their

skill levels (Vygotsky 1978) is an important part of the learning process in physical learning spaces but in wilder online spaces there may be an absence or subversion (through poor/ill informed support) of such scaffolding. However this blurring provides huge opportunities for cross-organisational, interdisciplinary and serendipitous connection and reflection. In addition participation in learning practices in informal, playful, social online spaces can feel far more intrinsically motivating than traditional learning experiences.

An excellent example of the intersection of informal learning, social media and traditional entertainment have been the phenomenal success of TED (TED Conferences LLC 2011) lectures online. These short talks, often presented by academics and expert thinkers, elicit blockbusting viewing levels and viral sharing through social media sites. Although the presentation styles of these videos are informal, catchy and brief there is additional appeal in these being artefacts and experiences discovered and shared/curated by the (informal) learner.

Future challenges

The challenge for traditional educational institutions, digital libraries and educational resource providers is therefore to move away from being driven by technical solutions and instead consider how best to create more relevant and engaging user experiences. These concerns were directly addressed by the JISC UX2 project which looked at the needs of library catalogue users and explored various approaches and technologies to improve the user experience for academic library catalogues (see Paterson and Low 2010).

To some extent it can be assumed that commercial websites offer user experiences that appeal to self-directed learners as they often encourages a sense of playfulness and openness. However many learners and teaching staff are experienced and comfortable with existing academic tools and those with more formal structures and significant help and support information. Many user interfaces currently rely on technologies which are not accessible to learners with disabilities that require the use of accessibility technologies to interpret websites and resources. Equality of acess to resources, particularly as learning and library materials generally move online, presents particular challenges for digital resource providers in the development, design or procurement of tools and interfaces.

The intuitive user experience of non-academic websites and tools can also be problematic in establishing good information seeking behaviours in learners. It is therefore increasingly important to engage with these resources, to train learners to differentiate between different resources and to emphasize, as appropriate, the authenticity and authority of data or resources provided by institutional or trusted digital resource providers.

In the following examples I will reflect on experiences of combining digital resources with social media in order to foster an engaged community and craft a more appealing and accessible online offering. The first example, AddressingHistory[xxi], looks at the role of social media in eliciting user generated content around digitised materials in an end user service. The second example, will look at the way in which social media raised awareness of the UKOER[xxii] initiative and how this has connected to the social media and community building activities, and reuse of digital materials, for the joint EDINA[xxiii] and Mimas[xxiv] Jorum Service[xxv].

Example 1: AddressingHistory

AddressingHistory, a project to create an online tool containing historical Scottish Post Office Directories (initially three Edinburgh volumes for 1785-6, 1865, 1905-6) and placing entries on contemporaneous maps, was conceived as a crowd-sourcing and community engagement project from the outset. The project, which was led by EDINA working in partnership with the National Library of Scotland[xxvi], intended to ask the user community to contribute data and corrections via the web tool (once built) and it was therefore crucial to connect to target communities and ensure that they were following the project, understood the benefits of participating and would eventually feel intrinsically motivated and empowered to participate.

From the outset AddressingHistory communicated with stakeholders, including potential users of the site, via a blog[xxvii] which tracked and encouraged them to take an interest in the development process. It was important to build links to the local history and genealogical communities whilst scoping and building the site to develop a sense of investment in the project and to elicit feedback and comments on the accessibility, clarity and functionality of initial previews not just when we were in the process of completing and releasing a finished site. This approach is in line with the Agile software development approach taken across several EDINA geospatial projects which encourages a rapid and iterative process that works with users.

Genealogy and local history is in fact an area of academia in which the relationship between the "amateur" and the "expert" is already quite blurred as academic historians will often work with local history groups, freelance practitioners and community groups as they are often the guardians of primary sources, collections of materials, and have huge expertise on their niche local or genealogical area. In many ways community collaboration projects are therefore a very natural progression of digitisation projects since many historical materials may be hugely enriched and better understood through contributions and connections made by expert "amateur" groups.

Prior to beginning AddressingHistory we investigated how we could connect to expert amateurs in our specific focal area of the history of Scotland and particularly Edinburgh in the 18th, 19th and early 20th centuries. We found a wealth of community bloggers and as the project progressed we asked those who had taken an interest in the project to provide guest posts and input to our own blog. This proved to be a hugely valuable way to engage their own readers as well as add topics of interest and authenticity to our existing readers. The initial call for bloggers (made through Twitter) also triggered a relationship with a key Scottish genealogy blogger who contributes articles for multiple UK magazines on local and family history which led to a series of mentions for AddressingHistory in these publications. Additionally articles appeared in our partner, the National Library of Scotland, publications.

As the community we were hoping to reach engage in local or family history as a leisure activity and as many complimentary resources – museums, magazines, etc. - also have a presence on Facebook we set up a Facebook page[xxviii] for sharing updates and encouraging discussion and sharing of the project with friends, friends of friends, etc. We also set up a Twitter[xxix] presence and several hashtags for the project (#addressinghistory and #AHLaunch for our launch event) in the hope of gaining followers at institutions like museums, community centres and historical magazines and projects. In fact it became clear that Twitter was also a space where high profile bloggers and freelance genealogists exchanged ideas and links so our presence there became well followed, engagement was rich and we were able to raise the profile of the project through connecting it to events we attended (by tweeting to their hashtags) and participating in Follow Fridays[xxx].

Once development work had progressed we invited members of our online community to register to view and comment on a preview of the AddressingHistory website, with this group acting as a second test group after circulation of the URL to the core project team and key contributors from partner organisations. We also began planning a launch event focused on the areas of interest to our community: Scottish local history, online tools and resources around history, and digitisation of historical resources.

In talking to potential users throughout the project we had found that it could take time to explain how AddressingHistory would work and why it was important to combine maps and historical post office directories though we also found that, once understood, the idea excited those interested in local and family history. We also looked at ways to ensure press coverage for the launch to reach out to a wider audience and when talking to one journalist it became clear that visual resources would be crucial to telling the story. To help both our potential users, bloggers and the press better understand the project we therefore used freely available equipment (the project team's own digital camera and a University camcorder) to shoot two short films and multiple still images that would help term the intangible digital resources into tangible understandable representations that would describe the process and usefulness of AddressingHistory. Images were shared under Creative Commons licence via Flickr[xxxi] and those writing about the project were encouraged to access and

use these. The videos, one showing the source materials and digitisation process, one including interviews explaining the value of the resources (particularly as a georeferenced combination), were shared on YouTube[xxxii], Vimeo[xxxiii] and we also encouraged our community to share and use these in their own posts about the project. We also shared videos of the launch event via the same YouTube channel so that the talks could be accessed whenever useful and by those unable to attend in person.

Reflecting upon our experience of the AddressingHistory project we certainly gained a far greater understanding of the needs and requirements of our potential users because of the amount of discussion and participation the project team was able to make online and at various in-person talks and events that took place during the project. The community we were trying to access and engage were largely positive about the use of digital resources but there was far greater variance in their attitude towards participation in social media spaces. Many are readers and consumers of blogs and video sites (in particular) but far fewer contribute or comment in this space. However engaging key ambassadors for the project who could articulate and feed back important changes, ideas or criticisms proved a very useful way to reach out beyond the immediate engaged community. Press coverage was invaluable for raising awareness of the project and here both web presences and email and phone conversations were important. The launch event, which took place at the National Library of Scotland in November 2010, was also an invaluable opportunity to gather rich feedback from those who had been reading about and taking an interest in the project but had not previously voiced their opinions. No matter how articulate or connected current or potential users of digital resources may be it was important and hugely valuable to be able to hold a physical event that connected up to prior and future online conversations.

Example 2: Jorum and OER

Jorum[xxxiv] is a free online repository for the Higher Education and Further Education sectors in the UK. Jorum is funded by JISC and run jointly by EDINA and Mimas, the two national data centres based at Universities of Manchester and Edinburgh. The service began as a cutting edge project to create a repository for teaching and learning materials to preserve the outputs of JISC-funded projects as well as complimentary materials such as those created for the National Learning Network (Halliday 2008). Most of these contributed materials were licensed by their creators for viewing, use and reuse within the UK or within their own institution.

Jorum appeared at a time of increased use of digital resources and virtual learning environments to support traditional and e-learning courses but a culture of sharing and reusing materials was only just emerging. In 2008 work began on JorumOpen, a version of Jorum to allow the upload of materials for broader sharing under creative commons licences. In particular JorumOpen was established as the mandated deposit space for materials created under the Open Educational Resources Programme (OER) funding calls from JISC and the Higher Education Academy (JISC 2010).

The Open Educational Resources concept is a worldwide movement to encourage the culture and practice of sharing learning materials. There is a large and well established community around OER, particularly in the United States, and these communities often provide support and advice through social media sites, for instance there is a particularly strong thread of discussion and support via Twitter on OER. These presences also represent the types of blending and blurring that takes place between institutional learning objects in the VLE with openly shared educational resources (from colleagues, other institutions, etc), and with publicly shared materials perhaps not created with any pedagogical purpose in mind (YouTube videos for instance). This existing community activity presented a superb opportunity for raising the profile of JorumOpen and engaging with creators and users of OER materials. A Twitter account[xxxv] allowed participation in the #OER[xxxvi] and #UKOER[xxxvii] conversations on Twitter; a Facebook presence[xxxviii] enabled engagement with teaching staff using Facebook for teaching and professional networking; sharing functionality within JorumOpen has enabled bookmarking and sharing of content to raise it's profile and that of the site; and the long standing Jorum blog[xxxix] was complimented with videos about OER and JorumOpen as well as highlighting best practice.

One of the most succesful methods for raising the profile of digital learning materials within JorumOpen and for encouraging best practice in the creation, use and/or reuse of these materials has been the Jorum Learning and Teaching Competition[xl] which has been awarded at the ALT-C Conference[xli] in both 2009 and 2010. Creators of learning materials were asked to submit their work and, as this was already openly shared, the links to entered, shortlisted and winning materials could be shared via blog posts, tweets, etc. This helped identify the range of materials in JorumOpen and demonstrate the ways in which educators are combining their own learning resources with existing materials (such as images and video) and feeding this into pedagogically driven websites or resources for use in their VLEs. This opportunity to focus on the content rather than Jorum/JorumOpen as a tool has been a superb approach for engaging teaching staff across the UK (and beyond) in the resources and ideas behind OER and the use of learning material repositories in general. Activity around the competition starts conversations about OER, about specific learning materials as well as general issues in this space, and encourages sharing of further materials.

The nature of the OER community is such that individuals and institutions tend to be proactively engaged in the use of technology and, as they have elected to become involved in the programme, the notion of sharing and discussions that take place in public online spaces. It is important to note that this is perhaps not typical of the broader digital library or academic community though there are active online communities around both interest areas.

Some of the most active discussions around OER are also not those on best practice but differing stand points on hot topics for the community, such as which creative commons are sufficiently open for an ideal culture of sharing and reuse. This raises a challenge for anyone hoping to engage and learn from their users: it is far easier to trigger activity, comment, feedback, advocacy, and to learn directly about the needs of users when they are excited or excised about an issue but far harder to engage individuals around less controversial topics. For instance whilst the JorumOpen OER experience has provided a wealth of rich conversations on licensing it has not yielded as much community generated discussion on the most effective pedagogical approaches around creating or using digital resources. This has been addressed through collection and publicising of best practice and case studies however the underlying tension between engaging on topics of self-interest versus less fiercely debated topics that could contribute significantly to understanding and serving users will be familiar from many other contexts within and beyond the academic sector.

Conclusions

The increasing use of digital resources in the academic sector brings many opportunities and challenges both of which are amplified by the ubiquity of engagement in online learning and social media spaces.

Historically much of the interest in developing digital tools and resources has focused on the technical: what is technically possible and what is desirable for funders or policy makers. It is important, as the technology is maturing, to reflect on the role that user needs have and could play in future developments. Taking this approach in academic settings very much reflects similar shifts in the commercial sector where “Web 2.0” tools have very much been about the shift from more rigid sites and services created by commercial providers over long periods of time towards rapidly developed user centred services and sites that retain users more through user experience rather than data lock in or subscription terms. However the academic sector must also be aware that such approaches must sit alongside trust and authority of digital resources.

Authenticity, authority and trustworthiness have greater importance for users online where traditional marks of authenticity (inclusion in a physical collection, publisher, even crude tools for judging quality such as cover design) may not be available and where a wealth of competing resources are present. However the vast array of materials also increases the potential for flexible and accessible routes to learning. If a recommended resource is difficult for a user to access perhaps there is another related item – a review of a paper, a video about it, a comment by the author – that will enable a richer understanding. Rather than individuals (student or teaching staff)

relying on colleagues and peers for support, correction and gentle scaffolding the online learning space is democratised with individuals able to discover and access materials, support and peers working across the globe. Though discourses on the democratising nature of the internet can be rather hyperbolic it is undeniable that digital resources of all kinds are enabling enhanced access to information and a new appreciation of the ongoing nature of learning (whether highly structured or very informal in form).

References

Brown, J. S. (2005). New Learning Environments for the 21 Century. Forum for the Future of Higher Education Symposium. Aspen.

Davis, M and Lee, B. (2008). The legal implications of student use of social networking sites in the UK and US: current concernsa dn lessons for the future. In Education & the Law 20 (3). pp. 259-288.

de Freitas, S. (2008) Emerging Technologies for Learning. BECTA research report, March 2008, Volume 3 (2008).

Dutton, W.H., Cheong, P.H. and Park, A. (2004). An Ecology of Constraints on e-Learning in Higher Education: The Case of a Virtual Learning Environment. Prometheus, 22 (2). Pp. 131-149. Retrieved 5th April 2011. http://dx.doi.org/http://dx.doi.org/10.1080/0810902042000218337/

Dutton, W.H., Helsper, E. J. and Gerber, M. M. (2009). The Internet in Britain: 2009. Oxford Internet Institute, University of Oxford. Retrieved 5th April 2011. http://www.oii.ox.ac.uk/research/oxis/OxIS2009_Report.pdf.

Edwards, R. (2006) A Sticky Business? Exploring the "and" in Teaching and Learning. In Discourse: studies in the cultural politics of education, 27 (1). pp. 121-133. 5thApril 2011. http://dx.doi.org/10.1080/01596300500510336

Eynon, R. (2005). The use of the internet in higher education: Academics' experiences of using ICTs for teaching and learning. In Aslib Proceedings: new information perspectives, 57 (2). Pp. 168-180(13). Retrieved 5thApril 2011. http://dx.doi.org/10.1108/00012530510589137/

Eynon, R. (2006). The use of ICTs for teaching and learning in law education: some innovators' perspectives. Web Journal of Current Legal Studies, 2006 (3). Retrieved 5thApril 2011. http://webjcli.ncl.ac.uk/2006/issue3/eynon3.html.

Eynon, R. (2008). The use of the world wide web in learning and teaching in higher education: reality and rhetoric. Innovations in Education and Teaching International, Volume 45 (1). Pp. 15 – 23. Retreived 5thApril 2011. http://dx.doi.org/10.1080/14703290701757401.

Eynon, R. and Malmberg, L. E. (2011) A typology of young people's Internet use: Implications for education. Computers & Education, Volume 56(3). Pp. 585-595. Retrieved 23rdMarch 2011. DOI: 10.1016/j.compedu.2010.09.020.

Gee, J. P. (2003). What video games have to teach us about learning and literacy, New York: Palgrave Macmillan.

Halliday, L. (2008). A History of Jorum, the Learning Resource Repository for UK Higher and Further Education (2002-2008). Jorum website. Retrieved 5th April 2011. http://jorum.ac.uk/about-

us/history.

Ito, M. (2010). Peer-Based Learning in a Networked Age. *Keynote address for University of Michigan's Enriching Scholarship 2010. Retrieved 5th April 2011.* http://www.itofisher.com/mito/publications/peerbased_learn_2.html

Jackson, Janna (2009). Game-based teaching: what educators can learn from video games. Teaching Education, 20 (3). pp. 291 - 304. Retrieved 10th April 2010. http://dx.doi.org/10.1080/10476210902912533

JISC (2010). Open educational resources programme – phase 1. JISC Website. Retrieved 5th April 2011. http://www.jisc.ac.uk/whatwedo/programmes/elearning/oer.aspx.

Keashly, L and Neuman, J. (2010). Faculty experiences with bullying in Higher Education. In Administrative Theory & Praxis 32 (1). pp. 48-70.

Lave, J. and Wenger, E. (1991). Situated learning . Cambridge, England: Cambridge University Press.

Lenhart, A., Purcell, K., Smith, A and Zickuhr, K. (2010). Social media & mobile internet use amongst teens and young adults. Pew Internet and American Life Project. Retrieved 5th April 2011. http://pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx.

Livingstone, S. and Helsper, E. (2007). Gradations in digital inclusion: children, young people and the digital divide. In New Media Society, 9 (4). Pp. 671-696. Retrieved 5th April 2011. http://dx.doi.org/10.1177/1461444807080335/

Paterson, Lorraine and Low, Boon (2010). Usability Inspection of Digital Libraries. In Ariadne (63). Retrieved 3rd March 2011. http://www.ariadne.ac.uk/issue63/paterson-low/.

Prensky, Marc (2001). Digital Game-based Learning. (USA: McGraw-Hill)

Ross, J., Bayne, S., Macleod, H., O'Shea, C. (2011). Introducing a manifesto for teaching online . Presentation at the University of Edinburgh e-Learning@Ed event held on Friday 1st April 2011 at the National eScience Centre, Edinburgh.

Selwyn, N. (2009). The digital native - myth and reality. Paper presented to CILIP London seminar series. 10thMarch 2009. Retrieved 23rdMarch 2011: http://www.scribd.com/doc/9775892/Digital-Native

TED Conferences LLC (2011). TED: Ideas worth sharing [website]. Accessed 2nd March 2011. http://www.ted.com/

Thomas, S et al (2007) Transliteracy: crossing divides. First Monday. 12(12). [web site]

Usher, R. (2002) Putting Space Back on the Map: globalisation, place and identity. In Educational Philosophy and Theory, 34 (1). pp.41-55. Retrieved 5th April 2011. http://dx.doi.org/10.1111/j.1469-5812.2002.tb00285.x

Vygotsky, L. (1978). Mind in Society: The Development of Higher Psychological Functions. Cambridge, MA: Harvard University Press.

Whitton, N. (2010). Learning with Digital Games: A practical guide to engaging students in higher education, London: Routledge.

Woods, R., Baker, J. D. and Hopper, D. (2004). Hybrid structures: Faculty use and perception of web-based courseware as a supplement to face-to-face instruction. The Internet and Higher Education, 7 (4). Pp. 281-297. Retrieved 5th April 2011. http://dx.doi.org/10.1016/j.iheduc.2004.09.002.

i Nearly half of all respondents to the 2009 Oxford Internet Survey reporting having created a profile on a social networking site (Dutton, Helsper, and Gerber 2009) and this looks likely to rise: the Pew Internet and American Life Project found that 73% of American teenagers used social networking sites (Lenhart, Purcell, Smith and Zickuhr 2010).

ii These tools are used for recording, aggregating and (optionally) sharing citations for academic reading, assignments, publications etc. Some also allow ratings and comments to be added to citations.

iii Mendeley, <http://mendeley.com/> is a web and downloadable tool for tracking academic reading and citations. These citations can be shared and recommendations for further reading received via an online social networking site that forms part of the tool.

iv Delicious, http://delicious.com/, is a social bookmarking tool that enables sharing of URLs/bookmarks and notes across machines. Bookmarks can also be shared with other users or (if shared publicly) via public profiles and RSS feeds.

v Evernote, http://www.evernote.com/, is a social bookmarking tool that works like a virtual scrapbook of resources allowing text, URLs, images, video, etc. to be shared online.

vi A.nnotate, http://a.notate.com/, is a tool that allows online annotation of a document by one or multiple participants.

vii Diigo, <http://www.diigo.com/>, is a social bookmarking tool that allows users to share notes on websites via a browser plugin that shows mini virtual sticky notes within a webpage – for instance a particular paragraph or image may be specifically commented upon and shared with all or selected Diigo users.

viii Google Sidewiki, http://www.google.com/sidewiki/, like Diigo allows users to make comments on websites via a browser plugin. Notes appear in a sidebar which can be expanded to read or comment on the current page.

ix iGoogle is a personalised version of google.com used by some Google users. The page can be customised with widgets (search widgets, countdowns to events, games, etc.), RSS feeds, and similar tools to create a personal start page alongside the familiar Google search box.

x Facebook is the most widely used (in the UK and US) social networking site at the time of writing, http://www.facebook.com/.

xi Widgets are tools allowing content from one website or data source to be embedded in another. Widgets are usually a simple Javascript presentation of data retrieved automatically over the internet. Library related widgets include the SUNCAT (Serials Union Catalogue for the UK, http://www.suncat.ac.uk/), iGoogle gadget or Facebook application, the Copac (http://www.copac.ac.uk/), and Worldcat (http://www.worldcat.org/) catalogue search widgets.

xii For instance commercial organisations such as OMBIEL are developing mobile applications which universities can customise as applications for members of their institution to include library searches, campus maps, etc.

xiii Mash ups tend to be combinations of multiple electronic resources, often through creating an attractive user facing combinations of information drawn from RSS feeds, APIs (Application Programming Interfaces) and similar information. For example Dave Pattern's work to combine the University of Huddersfield catalogue with book jackets from Amazon, borrowing statistics, related materials etc. is a good example of mashed up library resources. See, for instance, the presentation “Web 2.0 in action: experiences from the University of Huddersfield”, http://eprints.hud.ac.uk/9629/.

xiv WebCT or Blackboard (previously two products now combined) is a virtual learning environment which allows sharing of learning materials such as lecture notes, videos, etc. as well as assignment submission, discussion boards and similar functionality. The environment is structured and may either allow access for materials to be downloaded or may be presented as html pages/course materials which link to materials both within and outside the environment.

xv SAKAI is an open source virtual learning environment developed by the academic community to allow sharing of learning materials such as lecture notes, videos, etc. as well as assignment submission, discussion boards and similar materials.

xvi Moodle is an open source virtual learning environment designed for the sharing of course notes and materials.

xvii Elgg is an open source social networking tool used in a number of academic organisations as a space for sharing course notes, blogs and course discussions.

xviii Ning is a commercial social networking tool which can be used as a restricted space for sharing course materials, learner blogs and discussions.

xix This is partly a consequence of the fact that e-learning is still a very recent practice in comparison to traditional teaching formats. -learning has often been associated with questionable and/or unregulated “qualifications by post” schemes so there is also a significant cultural barrier that must be overcome by institutions adopting e-learning fully for courses though the Open University and the University of Edinburgh MSc in eLearning programme are both exemplars of good practice in delivering high quality and well respected fully online courses.

xx Mobile is an increasingly important space, particularly in academia, for example see the 2010 University of Edinburgh Mobile Survey, http://www.projects.ed.ac.uk/areas/itservices/integrated/ITS045/Other_documents/MobileSurvey2010.shtml and the findings of the 2011 Horizon report, http://www.nmc.org/publications/2011-horizon-report.

xxi AddrressingHistory, http://addressinghistory.edina.ac.uk/.

[xxii] More information on the UK OER programme can be found on the JISC website, http://www.jisc.ac.uk/whatwedo/programmes/elearning/oer.aspx.

[xxiii] EDINA is a JISC designated National Data Centre based at the University of Edinburgh, http://edina.ac.uk/.

[xxiv] Mimas is a JISC designated National Data Centre based at the University of Manchester, http://mimas.ac.uk/.

[xxv] Jorum and Jorum Open, http://www.jorum.ac.uk/.

[xxvi] National Library of Scotland (or NLS), http://www.nls.uk/.

[xxvii] The AddressingHistory Blog can be accessed at http://addressinghistory.blogs.edina.ac.uk/.

[xxviii] The AddressingHistory Facebook page may be accessed at http://www.facebook.com/pages/addressinghistory/.

[xxix] Twitter, http://twitter.com/, is a service which asks users to share what they are doing via short updates of 140 characters or less. The AdddressingHistory Twitter account may be accessed at http://twitter.com/addresshistory/.

[xxx] Follow Fridays are an informal weekly way to encourage and promote Twitter users you value, like or admire. Each Friday Twitter users share the names of good people to follow with an #FF or #FollowFriday or similar tags which are also in use.

[xxxi] Flickr is a photo sharing site, the AddressingHistory images can be found at http://flickr.com/photos/addressinghistory.

[xxxii] YouTube is a video sharing site, the AddressingHistory videos can be accessed at http://www.youtube.com/user/AddressingHistory

[xxxiii] Vimeo is a video sharing site, the AddressingHistory presence can be found at http://vimeo.com/addressinghistory/.

[xxxiv] Jorum, JorumOpen and related social media presences can be accessed at http://jorum.ac.uk/

[xxxv] The Jorum Twitter account can be accessed at http://www.twitter.com/jorumteam.

[xxxvi] #OER is the hashtag that the Twitter community most frequently uses for discussion of Open Educational Resources.

[xxxvii] #UKOER (or #ukoer) is the officially recommended hashtag for use by the Twitter community in discussions of the UK OER programme.

[xxxviii] The Jorum Facebook page can be accessed at http://www.facebook.com/JorumTeam/.

[xxxix] The Jorum blog can be found at http://jorumnews.blogspot.com/ or on the main website, http://jorum.ac.uk/, under the “News” heading.

[xl] Information on the 2010 competition can be found on the Jorum website, http://www.jorum.ac.uk/altccompetition2010.

[xli] ALT-C, http://www.alt.ac.uk/, is the annual conference for Association for Learning Technology.