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Digital literacy: digital maturity or digital bravery?

Making digital literacy a success in taught marketing courses

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Abstract

This paper examines criteria for successfully developing digital literacy skills in an undergraduate module. We analyse students' work using concepts from the digital literacy literature, the field of digital marketing and the concept of the filter bubble (Pariser 2011). We describe the rationale for the module, the assessment process and the outputs produced by students. We then undertake an analysis of reflective blogs and other student outputs . We review key criteria that appear to be critical to successful implementation and discuss the importance of assessing critically reflective practice in authentic, constructively aligned assessment tasks.

Key words: digital literacy, digital marketing, critical reflection, constructive alignment, authentic task

Introduction

This article argues that students not only need the skills to competently use digital technologies, they also need skills to choose appropriate tools that best meet the needs of a particular task. Furthermore, we argue that the basic skills required to use many of the new and evolving technologies can be developed independently by students if given authentic, constructively aligned assessment tasks (Biggs 1999).

Using a qualitative analysis of blogs submitted as part of a student assessment, we review and discuss key ideas from the literature on digital literacy, digital marketing education and the use of social media in order to consider how advanced digital literacy skills can be embedded successfully in undergraduate and postgraduate modules.

Although we are only able to make limited claims based on a single student cohort, we believe this work provides evidence of good practice in embedding digital literacy skills in an undergraduate programme and we complete our discussion with a small set of generalised recommendations.

Digital literacy in higher education

Digital literacy, often confused with digital skills by large commercial interests, has grown both as an idea and a focus of interest for higher education institutions (HEIs), as the so-called web 2.0 has evolved. 'Web 2.0' may now be obsolete due to its pervasiveness, but digital literacy has yet to make a significant impact on the way that HE operates.

The range and extent of digital literacy education in HEIs is hard to assess as it is primarily embedded and therefore hidden. One consequence of digital literacy being below the radar is that it is not well developed in HEIs because it is not an explicitly articulated requirement. Although explicit evidence for this position is not readily apparent, the briefing paper in support of JISC funding (JISC 2011) and the subsequent £1.5m Developing Digital Literacies programme suggest that this is the case. Many programmes of study, particularly in post-1992 universities, include the teaching of some aspects of IT skills, driven by influences such as the Leitch report (1996) and QAA benchmark statements, but few concentrate on the full range of digital tools or the full range of 'literacy' skills, and there is often "poor embedding of literacies into the curriculum, particularly at the level of feedback and assessment" (Beetham *et al.* 2009: 6). A quick trawl of HEI websites reveals that, typically, IT services provide software training and libraries provide information literacy training.

Many students arrive at university believing they are skilled IT users but there is a substantial body of evidence that indicates they underestimate the range of skills that are important, overestimate the extent of their skills base and are completely unaware that 'driving the software' is only part of the story (Redecker *et al.* 2009). At MMU Business School we ran a school-wide first-year unit developing digital literacy to prepare students for the rest of their degree. Anecdotal evidence revealed many gaps in their ability to find, analyse, evaluate and present digital information (see also Ofcom 2008). For instance, students were unaware of the use of quotes or Boolean operators in Google, could not use even simple functions in Excel, were not able to identify reliable sources of data on the web and could not use styles to consistently format a document. And yet, despite huge efforts to make this module flexible, interesting and stimulating, it has been dropped because students did not see its relevance and importance. This supports the point made by Beetham *et al.* (2009) that digital literacy education needs to be situated in authentic, relevant tasks. We would add that these tasks also need to be aligned with core content. However, such an approach relies on the literacy skills of the teaching staff (Mcgonigle *et al.* 2010) and a deeper understanding of the wider benefits of digital literacy (Beetham *et al.*

2009). Local reviews suggest that such skills and awareness are not widely present at Manchester Metropolitan University (MMU 2009) and there is no reason to suspect that this is peculiar to MMU. However, the upgrading of staff IT skills is a tricky change-management problem given the 'person culture' of universities (Handy 1985), which encourages self-managed and self-guided behaviour.

The e-skills UK report (2009) estimates that 77% of jobs require IT skills but academics routinely discount this as being part of their responsibility because of the transitory nature of such skills. Arguably, it is the transitory nature of many digital skills and the increasing pressure to support employability that creates a mandate to give students lifelong learning skills that will support their ongoing professional development in a changing technological environment.

An important aspect of any assessment is the ability to distinguish levels of achievement. While not articulated as criteria for student assessment, we believe that the three levels of literacy outlined by the DigEuLit project (Martin and Grudziecki 2006) provide a useful measure of overall achievement that can be applied to our students' work. Level 1 includes digital competence (skills, concepts, approaches, attitudes, etc.) level 2 covers digital usage (professional/discipline application) and level 3 expects digital transformation (innovation/creativity).

Digital marketing in education

The use of technology in tertiary education has seen extensive coverage in recent literature (Banaji *et al*. 2010; Lowe and Laffey 2011; Wymbs 2011).

Literature focusing on digital marketing is emerging as the discipline grows and literature exploring the relationship between technological developments and curriculum design is currently limited. Examples which come to the fore focus on the implementation of new, specifically web 2.0, technology to support existing curricula: smartphones (Backer 2010); Second Life (Halvorson *et al.* 2011); web 2.0 technologies, cloud computing, etc. (Jones and Sclater 2010); Twitter (Dunlap and Lowenthal 2009).

While these studies address the inclusion of new technologies in a supportive role, there is a dearth of research exploring digital aspects of the core marketing curriculum and the teaching of these approaches and skills. Wymbs's (2011) recent paper explores this topic more thoroughly and is of particular relevance. Wymbs argues that technological prowess has not only redefined modern curriculum design but, given market developments, it is ultimately the duty of the tertiary educational institutions to offer some form of digital marketing training. His profiling of universities, albeit US institutions, provides a valuable insight into the development of courses at this level and advises a model for curriculum design which correlates with industry practice:

> *Even if industry professionals are available to be hired as adjuncts, members of the marketing department must perform the critical leadership role of guiding the creation of courses and course content and ensuring that the program meshes from a rigor (theory) and relevance (practice) perspective.*
>
> (Wymbs 2011: 100)

Finally, Wymbs's (2011) curriculum development model focuses on including business from an early stage of design for the mutual benefit of stakeholders:

> *To remain relevant to our students and to the ultimate consumers of our output, businesses, the marketing curriculum must evolve with both the changing technological environment and the way marketing is perceived by its own academic architects.*
>
> (Wymbs 2011: 101)

Filter bubbles

One of the key elements of digital literacy must be the successful use of search engines such as Google to acquire and research information. This is a vital skill when the amount of information and data approaches exponential levels of growth. However, dangers start to appear when one understands the way in which search engines such as Google are created.

Google's personalisation algorithms (the use of Google after one has logged in with a Google account, or the continual use of Google from an unlogged-in computer on the same IP address) benignly point the user to search results that the algorithm 'predicts' as being most relevant to the searcher. Using a user's search history and (when logged in) preferences, Google gradually inclines more and more towards certain websites. While this benign prediction technology is designed to improve the search experience of, say, a consumer looking for items to purchase, the unintended consequence is described as "the filter bubble" (Pariser 2011).

The filter bubble's consequences are that a searcher using a platform such as Google becomes less exposed to conflicting viewpoints returned as search results because the results are likely to match the user's search history and preferences. As a result, the user becomes isolated from raw results (and those which might contradict or act as dissonance on the users own beliefs and preferences). Over time, the personal search results become increasingly homogenous and restricted. Pariser cites an example of two different users looking for information on the Deepwater Horizon disaster (CNN 2011). One person received search results on environmental issues, the other received results pertaining to investment information; neither had results that were in any way similar.

The danger for us is that literacy in the use of Google (or any other search engine or even social media tools such as Facebook) can come before a critical understanding of the risks, issues and limitations of the technology. Critical thinking skills are required, not just to evaluate the reliability of the data returned but also the reliability of the method used to acquire the search returns in the first place. Add the filter bubble to the power of search engine optimisation (SEO) techniques and critical thinking skills have to be at the core of digital literacy for search.

Method

Two of the authors of this paper have taught a final-year undergraduate module, Digital Marketing Communications Management, for the past two years and received extremely positive feedback from both students and employers. The module is described below and some of the student outputs have been analysed to support a discussion about the nature of successfully embedding digital literacy in the core content of a degree programme and the importance of teaching a critical approach.

We draw on a number of recurrent ideas from the literature and use these to analyse the final component of our students' assessment, a blog entry. The entry was supposed to be a reflective exercise and was expected

to discuss the process, outcomes and experience of undertaking the digital marketing exercise which formed an earlier part of the assessment.

We analysed the blogs for evidence of the following themes using related keywords and synonyms:

1. Levels of digital literacy based on DigEuLit
2. Importance of group work
3. Importance of authenticity and relevance of task
4. Evidence of critical reflection on process, tools and outcomes
5. Importance of tutor expertise
6. Explicit evidence of knowledge construction
7. Importance of employability

Digital Marketing Communications Management (DMCM)

As a discipline, digital marketing communications is difficult to place. Unlike web design, it does not rely on an explicit knowledge of coding concepts or issues normally associated with traditional computing. However, there is an aspect of digital literacy that is required by virtue of the change of communications channels that come with the digital domain. It is the literacy of these channels that we focus on here.

A key issue in education relating to digital media platforms is speed of change. New platforms emerge frequently, existing platforms evolve rapidly, and best practice use of these platforms changes regularly as practising professionals develop their craft and understand the use of such tools over time. Such change created a challenge for the module team – a need to expose students to the evolving digital media platforms in a critical way and deliver the academic content of the programme.

In the first year that we delivered the programme the key emerging and evolving platforms were Twitter, blogging platforms and a variety of community tools and environments. An early straw poll of students at the beginning of autumn term showed us that very few students were Twitter users (in line with some wider research of business use of the tool).

We were conscious that Twitter was an important tool in digital corporate communications, so we adopted several different strategies to increase uptake and use of the platform. At each taught session, we used a Twitter hashtag (#dmcm) to point to information relevant to the lecture content. We mentioned that a number of local employers from the digital sector were aware of the hashtag and might use it to communicate directly with students. We also made a point of using the hashtag to communicate some interesting, but not essential, subject-focused discussion. This was picked up by early adopter students who followed the hashtag. These early adopters effectively acted as evangelists for both the content and the method, encouraging other students who were concerned they would lose out on vital assistance.

We wanted students to present their work in an electronic format that would expose them to a contemporary content publishing environment. We asked for several pieces to be submitted on a blogging platform (or other suitable interactive environment). For many students this effectively forced them to make a choice about where to submit their work. Many discovered that platforms at that time, such as WordPress, Posterous, Tumblr and Blogspot, were easy to use and generated the results they required. At no point did

we teach use of individual platforms, although we did ensure we were available for consultation on associated technical issues.

We also wanted students to become aware of the notion of search engine optimisation (SEO). While the principles might be taught or learned from a text, the actual experience was something that we would find difficult to simulate. So we created and identified a number of key search terms that we asked students to include in their assessment communications on their blog sites. We didn't say why. We wanted to see what would happen.

What happened

Several things happened as a result. Uptake of Twitter increased rapidly in the student body. We noticed an increase in followers of our Twitter accounts, specifically from the student body. Students started to use Twitter as one of several approaches to communicating with the academic staff on the module – usually for last-minute information on course administration or assistance with learning issues. Later in the module, it became the *de facto* rumour-control mechanism. Students also started communicating directly with each other through the hashtag and with employers who followed the hashtag. They also used Twitter to direct 'traffic' towards their blog sites.

Student blog sites became more than places simply to leave assignment work for us to grade. High-flyers regarded the sites as a place to showcase their thinking so employers could see their work. They were solving a difficult problem that marketing students have always had: "How can I demonstrate my skills?" In a connected development, they also realised that they could use certain techniques from the SEO canon to make their blog sites rank in Google for certain key terms – specifically the ones we mentioned earlier relating to the hashtag and course title. Again, employers were able to search the terms and find student material. In turn, students become aware of this, which increased content production on blog sites, improved activities associated with SEO and increased the level of Twitter traffic. Throughout this activity, students were looking at improving the ways they communicated with a corporate audience (rather than looking at the ways that young people might use simple social media tools for social engagement).

At the end of the academic year, we were able to see students using Twitter and blogsite creation tools as means of corporate communication. Through organic use rather than specific teaching, digital literacy in sophisticated digital media platforms evolved as an emergent property of the programme rather than an explicit taught element.

What the student blogs revealed

For most of this analysis we analysed the blogs of 18 groups. Four have been excluded because they were commissioned by commercial organisations.

Levels of digital literacy based on DigEuLit

All 22 groups were considered in this part of the analysis because it was not based solely on the blogs. Of the 22 groups, the tutors have estimated the following allocation of digital literacy levels according to the Martin

and Grudziecki (2006) categories, which have been refined for this particular domain. Data are set out in table 1.

Level	*Criteria used to judge digital literacy level*	*Number achieving this level*
1	Mastery of core digital marketing skills, concepts, approaches	22
2	Demonstration of professional attitudes and evidence of client considerations	8
3	Demonstration of innovative and creative use of digital and social media to promote targeted search terms	5

Table 1: Showing levels of literacy (Martin and Grudziecki, 2006) achieved by student groups

Importance of group work

Assessment teams were advised to identify roles as part of their activity and this was reflected in many of the blogs, for example:

> *… is the social media specialist. His role is to ensure that DMCM Manchester Hotels are in touch with the Social Media Community and have an active presence on social websites such as Twitter and Facebook.*
>
> (Blog R)

These roles provided an important indication of authenticity as well as supporting structural aspects of the task. Teams typically used Facebook to co-ordinate activity in real time rather than relying on periodic face-to-face meetings.

Importance of authenticity and relevance of task

Four teams were given the unique opportunity to work with real clients on live digital marketing projects. Teams had to pitch for the work and the real-life clients chose their student agency team on the basis of their pitch. The pitch process was particularly successful in creating an authentic and relevant task that mimics industry behaviour. There was therefore an increased sense of authenticity and relevance in relation to the assignment tasks. Students on live projects had to combine working on the assessment with managing a real client relationship in a digital marketing context.

Students on live projects found that they committed themselves to additional work at the behest of their 'client'. These tasks invariably involved effort that required higher levels of digital literacy.

Evidence of review of approach used as evidence of critical reflection

There was considerable evidence in all the blogs of self-evaluation skills, tool evaluation and reflection on the nature of the relationship with hypothetical employers or professional considerations.

Self-evaluation

> *Group lost sight of original goals & did not create enough relevance to target audience. Needed to be more specific to draw traffic in.*
>
> (Blog F)
>
> *Views were lowest in December and January, due to a lack of posts. Therefore, if repeated, it would be recommended that the whole team wrote a blog once a week to increase content and encourage traffic.*
>
> (Blog D)

Tool evaluation

> *Therefore, if completed differently, these tools would be used more effectively to carry out an integrated digital campaign.*
>
> (Blog A)
>
> *… if we had known back then what we did know we could have chosen [the blog platform].*
>
> (Blog C)

Employer relationship/professional considerations

> *In conclusion, the blog's performance met objectives but should have been better enhanced to balance our own objectives whilst also meeting the needs of the client.*
>
> (Blog F)
>
> *Unfortunately, despite our best efforts, we do not rank for any of our key search terms, which are the course terms, 'Dairy free ice cream', 'lactose intolerance' and 'dairy free desserts'. We believe, in short, that our chosen key terms are difficult in terms of the level of competition there is, and our key terms are quite broad.*
>
> (Blog I)

Importance of tutor expertise

There was no evidence in the blogs of the importance of tutors but a formal student evaluation of the module organised by the university provided the following:

> *Great lecturer. Fantastic help with assignments.*
>
> *I enjoy the structure of the assessment too …*
>
> *The show & tell sessions have also been great. Very very helpful before each assignment.*

Explicit evidence of knowledge construction

We analysed the blogs for evidence of knowledge construction by individuals or groups, demonstrated by establishing understanding of something new, forming an independent point of view or referring to knowledge not directly connected with the taught part of the module.

> *Therefore, if completed differently, these tools would be used more effectively to carry out an integrated digital campaign.*
>
> (Blog A)
>
> *Furthermore, we should have posted the blog to the actual Canal Street FB page and utilised Twitter more efficiently to drive traffic to the client's website and ours.*
>
> (Blog F)
>
> *We believe using a professional domain including keywords would have increased the chances of achieving a higher Google ranking as Google would have perceived this website as more credible.*
>
> (Blog M)

From an employability perspective

All four of the groups who were working directly for external clients were categorised as achieving the highest level of digital literacy skill, i.e. demonstrating competency, professional awareness and innovation. Although this does not demonstrate a causal relationship, comments from the groups indicate that this was an important factor in their performance.

The clients provided very positive feedback. One managing director, Guy Levine of Return on Digital, commented in a Twitter dialogue with another employer that two specific graduates from the course were "freaking awesome".

Students didn't make explicit reference to their employability in their final blog posts. However, one student commented that the assignment was "very relevant to future business marketing" in a free-text evaluation of the module.

Discussion

Setting a good assessment

Given the instrumental view most modern students have of education, if one wants to promote the development of digital literacy, it is important to put it at the heart of the assessment. Like many universities, MMU places high value on Biggs's (1999) theory of constructive alignment and we therefore develop learning outcomes and core parts of the curriculum to support assessment. This sends a clear signal to the students about the intent of the module. We also set explicit expectations about other aspects of the assessment in order to increase acceptance and commitment from the students, for example the requirement for students to choose and learn about new tools to use in their assessment without tutor guidance, the need to promote certain search terms on their blog, etc. This attention to detail in setting expectations was reflected in a 13-page brief describing the assessment and a 12-page explanation of how it would be assessed. Feedback from

students suggested that this was excessive but the document did make what was expected very clear without constraining the approach and direction of students' work.

Engagement is an important goal for all taught courses and although this was made easier by virtue of the students being in their final year there were a number of aspects of this work that enhanced engagement. These included the role of some employers in acting as sponsors of student work and in being active on the Twitter feed. The only reasons employers were prepared to become involved was because they perceived the assessment task to be highly authentic and capable of helping them with recruitment-specific tasks and the exploration of new approaches.

Critical reflection

The general argument for critical reflection in university education is well rehearsed (e.g. Mezirow 1998) but in the area of digital literacy it takes on a new dimension. Digital tools provide new students with new approaches that need to be mastered, but the ease of publishing on the web makes a critical approach key if they are to ensure rigour (Lankshear and Knobel 2008). However, critical reflection usually refers to critical review of the content of the information found and the process by which it is found (Mezirow 1998). There is little acknowledgement of the skills required to find and evaluate the tools that support the process. Even traditional computer science has little to say about this, as it has traditionally focused on large-scale tasks, matching well-defined requirements against a target set of applications. The range and variety of web-based tools to support digital tasks is huge and decision-making about such tools is a digital literacy that warrants study in its own right.

The transitory nature of digital expertise increases the need to equip undergraduates with lifelong learning skills, a key component of which is critical reflection, as Mezirow (1998) makes clear. The requirement for continuing professional development is recognised by all professional bodies but its importance for students working in digital fields is much greater due to the evolving set of tools available which shape the nature of the tasks that are perceived as important or possible (Orlikowski and Hofman 1997).

How did the filter bubble impact student work

The filter bubble is a new and intriguing problem. At the time of planning this module we were not aware of it and did not explicitly plan to reduce its impact. However, on reflection, it appears that some aspects of our assessment regime mitigated against its effects. In particular, through ensuring that students considered a range of options as suitable responses to a specific scenario, it was possible to remove some effects of the filter bubble from their thought processes. In addition, working in teams meant that they were able to challenge each other's positions and certain findings that individuals derived from internet searches, again reducing the effect of the filter bubble. Finally, ensuring that the assessment model included the need for students to justify their design decisions, evaluate solutions they had identified and subsequently critique their approach meant that they were persuaded and encouraged to avoid the filter bubble. In future, our students will be taught explicitly about the filter bubble.

Twitter as a pedagogical tool

Twitter has been widely adopted by certain sections of the academic community. Many technological and educationally focused conferences facilitate delegate interaction via the use of Twitter. This module has used it in a similar way: to support interaction both during lectures and outside them. Dunlap and Lowenthal (2009) reconsider the importance of core psychological ideas about the importance of social context in learning and develop ideas about how Twitter supports social presence. Twitter is quick and easy to use and facilitates communication among and between students and staff. It is the high levels of interaction focused around a realistic task that appears to facilitate experiential learning (Kolb 1984). Rinaldo *et al.* (2011) provide additional evidence of the importance of this, highlighting the perceived benefit to students. They analyse the nature and volume of tweets and relate this to student perception of benefit in terms of educational goals and future careers. The volume of Twitter use appears to relate directly to perceived benefits. Their discussion also highlights some problems with Twitter adoption that we did not experience. It appears that the module leader Rinaldo *et al.*s study was not initially experienced in using Twitter and did not use it as extensively as our tutors. Their paper suggests the use of "informal and formal rewards" to negate the barrier to adoption, whereas in our module the tutors employed a posthumous 'reward' for work completed. The cohort were informed of the SEO Cup, a prize for the team which ranked highest on Google for 'dmcm' on the final day of assignment submission.

Which digital literacies to focus on

Being clear about what literacies students are expected to develop is important. Critical use of tools such as search engines and Wikipedia-style information sources can certainly be generalised to the wider student body and lessons in these areas should be applied. One particular digital literacy – searchable copywriting (or web copy) – could be a digital literacy applied to a wider group of students. At some point all students are expected to communicate through written materials as part of their assessment. It is not unreasonable to expect that they could be educated to create search engine-friendly copy for their assessment materials. There are many other technologies that should be widely taught but are beyond the scope of this paper to comment on. Such technologies include cloud storage, data and information sharing, online collaboration, online graphical and video presentation.

While there might be a tension between the educational needs of students, which remains a long-term goal, and the more pressing needs of the commercial sector for skilled employees, it does not mean that the two needs are incompatible. Careful creation of a syllabus can allow for task-specific skills, which make a graduate attractive in the workplace, and higher-level skills involving analysis, critical evaluation and innovation, which allow graduates to select, engage and exploit new platforms throughout their career in a critical and independent way. This critical faculty is perhaps more useful to the commercial sector in the long run than the short-term skills associated with platform familiarity and basic technology. This distinction reflects a well-rehearsed tension between commercial needs, often portrayed as 'training', and higher-level goals, distinguished by universities as 'education'.

Our position is that digital literacy should not reflect this divide. We believe that it is not possible to teach higher-level skills without both context and experience of selecting and applying tools to problems in that context. Our experience is influenced by models of learning, such as Bloom's revised taxonomy (Anderson *et al.* 2001), which categorises learning activities in a hierarchy of six levels. Our assessment aims to ensure that all students undertake the first four levels and distinguishes better students using the levels of 'evaluation' and 'creation'. However, when considering the dimension of 'professional attitude' Martin and Grudziecki (2006),

and reflecting on the distinction between digital literacy and problem-solving, we realise we need a more sophisticated model to explain both our practice and our students' development. This should be the focus of future work.

Social issues

During the opening sessions, students were encouraged to use digital tools to investigate a topic introduced by the authors. The intention was to develop effective practice in their use of the available tools and to ensure that all students had a grounding in essential digital skills. Interestingly, Rinaldo *et al.* (2011) found no evidence that explicit teaching about Twitter increased the uptake or qualitative use of Twitter. However, their focus was on low-level use of the tool. We assumed that students would learn the basics for themselves but did help them develop good working practice in use of the tools. Interestingly, Rinaldo *et al.* (2011) found no evidence to indicate that prior Twitter familiarity aided its effective use, as shown by benefits perceived by students; however, negative feedback from non-adopters did indicate the importance of access to a phone with a Twitter app.

The institutional system for ensuring that students with learning difficulties are not disadvantaged demands a review of learning materials. In this module, we undertook a review of suitable web 2.0 platforms and made this explicit for students; for example, WordPress, the blogging tool, is w3 compliant and has passed the international standards for accessibility so was recommended.

While we strove to ensure that no disadvantage was in place for the cohort as part of their learning experience, we also provided the opportunity to learn about accessibility issues as part of the module. In the final assessment, the student groups were encouraged to reflect on any disadvantages they may have inflicted on visitors to their blogs, namely ignoring accessibility protocols or excluding potential customers on the basis of different social or cultural expectations.

Recommendations

In summary, we believe the following features of an assessment are important to ensure the successful development of digital literacy skills:

- alignment of learning outcomes, core curricula and assessment task
- clear guidance about what skills will be valued and their ranking
- authentic task within discipline, and ideally external interest
- strong requirement for critical reflection.

References

Anderson, L. W. and David R. Krathwohl, D. R. (eds.) (2001) *A taxonomy for learning, teaching, and assessing: a revision of Bloom's Taxonomy of Educational Objectives*. Boston, MA: Allyn & Bacon (Pearson Education Group).

Backer, E. (2010) Using smartphones and Facebook in a major assessment: the student experience. *E-Journal of Business Education & Scholarship of Teaching*. 4(1), 19–31.

Banaji, S., Cranmer, S. and Perrotta, C. (2010) *Expert perspectives on creativity and innovation in European schools and teacher training*. Seville, Spain: European Commission, Joint Research Centre, Institute for Prospective Technological Studies. Available at: http://eprints.lse.ac.uk/30042/1/Expert_Perspectives_on_creativity_and_innovation_in_European_schools_(published_version).pdf [accessed 30 November 2011].

Beetham, H., Gill, L. and Littlejohn, A. (2009) *Thriving in the 21st century: learning literacies for the digital age* [LLiDA project; JISC-funded study]. Glasgow: Glasgow Caledonian University.

Biggs, J. (1999) *Teaching for quality learning at university*. Buckingham: SRHE and Open University Press.

CNN (2011) *What the internet is hiding from you*. Available at: http://articles.cnn.com/2011-05-19/tech/online.privacy.pariser_1_google-news-facebook-internet/2?_s=PM:TECH [accessed 29 November 2011].

Dunlap, J. and Lowentahl, P. (2009) Tweeting the night away: using Twitter to enhance social presence. *Journal of Information Systems Education*. 20(2), 129–135.

e-skills UK (2009) *Technology counts: IT and telecoms insights*. Available at: www.e-skills.com/Research-and-policy/Insights-2008/2179 [accessed 30 November 2011].

Halvorson, W., Ewing, M. and Windisch, L. (2011) Using Second Life to teach about marketing in Second Life. *Journal of Marketing Education*. 33(2), 217–228.

Handy, C. B. (1985) *Understanding organizations*. 3rd ed. Harmondsworth: Penguin Books.

JISC (2011) Briefing paper in support of JISC grant funding 4/11. Available at: www.jisc.ac.uk/media/documents/funding/2011/04/Briefingpaper.pdf [accessed 30 November 2011].

Jones, C. and Sclater, N. (2010) Learning in an age of digital networks. *International Preservation News*. 55, 6–10.

Kolb, D. (1984) *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Lankshear, C. and Knobel, M. (2008) Introduction: Digital literacies – concepts, policies and practices. In C. Lankshear and M. Knobel (eds.) *Digital literacies*. New York: Peter Lang, 1–16.

Leitch, S. (2006) *Prosperity for all in the global economy-world class skills*. Norwich: HMSO.

Lowe, B. and Laffey, D. (2011) Is Twitter for the birds? Using Twitter to enhance student learning in a marketing course. *Journal of Marketing Education*. 33(2), 183–192.

Manchester Metropolitan University (MMU) (2009) *MMU digital learning technologies review*. Available at: http://lrt.mmu.ac.uk/ltreview/ [accessed 30 November 2011].

Martin, A. and Grudziecki, J. (2006) DigEuLit: concepts and tools for digital literacy development. *Italics*. 5(4), 249–267.

Mcgonigle, B., Patterson, W. and Tabbiner, B. (2010) *Next generation user skills*. Available at: www.sqa.org.uk/sqa/files_ccc/HNComputing_ NGUSReport_NextGenerationUserSkills.pdf [accessed 30 November 2011].

Mezirow, J. (1998) On critical reflection. *Adult Education Quarterly*. 48(3), 185–198.

Ofcom (2008) *Media literacy audit*. Available at: http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/media-lit-2010/ml_childrens08.pdf [accessed 30 November 2011].

Orlikowski, W. and Hofman, D. (1997) An improvisational model for change management: the case of groupware technologies. *Sloan Management Review*, (winter), 11–21.

Pariser, E. (2011) *The filter bubble: what the internet is hiding from you*. New York: Penguin Press.
Redecker, C., Ala-Mutka, K., Bacigalupo, M., Ferrari, A. and Punie, Y. (2009) *Learning 2.0: the impact of web 2 .0 innovations on education and training in Europe*. Seville, Spain: European Commission, Joint Research Centre, Institute for Prospective Technological Studies. Available at: http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2899 [accessed 30 November 2011].
Rinaldo, S., Tapp, S. and Laverie, D. (2011) Learning by tweeting: using Twitter as a pedagogical tool. *Journal of Marketing Education*. 33(2), 193–201.
Wymbs, C. (2011) Digital marketing: the time for a new 'academic major' has arrived. *Journal of Marketing Education*. 33(1), 93–106.