Meeting the need for online learning at the HCT: Investigating alternatives to BBVista

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Contents

Abstract

Backboard Vista (BBVista) is the learning Management System (LMS) of choice in 60% of institutions of higher education around the world (LAMS, 2006). Nevertheless, there is an increasing awareness of the limitations of this tool in the face of rapid technological change, such as the widespread use of social media and individual learner preferences for online tools (Siemens, 2010). This study evaluates the strengths and weaknesses of BBVista as the current institutional learning management system at the Higher Colleges of Technology (HCT) and investigates the viability of its possible replacement with the open source alternative, Moodle, which offers increased usability at a fraction of the cost (Siemens, 2010). The value of personal learning networks (PLNs) is also explored as a means of increasing learner autonomy. Findings show that, although e-learning is becoming more common place amongst staff and students at the HCT, there is no distinct preference for any one repository and teachers and learners are largely independent in their choice of online teaching and learning tools. This implies the need for flexibility, allowing for individual preferences and experience with ICT, but also the need for a set of overarching values, to respond to the changing role of the institution as a provider of information and the shift, for educators, from sources of knowledge to facilitators of collaborative information management. The study examines ways of supporting learner autonomy, including the incorporation of collaborative tools such as wikis, blogs and discussion boards into the LMS, and the effects of these tools on learner behaviour. Finally, recommendations are made for the inclusion of e-learning activities on ITEC N100: Computing Fundamentals, including a reflective approach to assessment to facilitate the setting and meeting of goals in the process of lifelong learning.

Key words:

Social media, social networking, VLE, LMS, PLN, BBVista

1. Introduction - Overview of the study

1.1 Research problem

Online learning is predicted to explode by 2015, while the number of college students taking traditional face-to-face classes is set to plummet (Coopman, S. (2009), eCampus news, (2011). Increased access to the internet and the rising cost of face to face university education mean more demand for online courses (Azaiza, 2009). In the UAE, competition in the higher education sector means that more programmes are on offer at international universities, and the HCT finds itself struggling to compete as a credible provider of HE courses (Sankar, 2010). The practical, vocational courses such as electronic engineering or business studies traditionally provided by the HCT have, in the past, been adequate to secure employment for local students. However, in recent years, the number of unemployed graduates has been rising, particularly in Ras al Khaimah, which has the highest rate of unemployed women graduates in the country (Albuainain, 2002). Many of these women have families, which can prevent them from entering the labour market or returning to study. Distance learning could offer a solution to helping them to rejoin the workforce by teaching them the skills that are in demand locally, such as tourism management (The National, 2010). However, to appeal to these and other learners, there is a need for educators to consider how to make activities learner centred so that courses do not become a simple transfer of information to web pages (Collis et al, 2005). The challenge for the HCT is how to tailor quality distance learning courses to appeal to students who may have difficulty accessing mainstream education, including learners with low level English language ability. For these, or any online course participants, effective learning design in the virtual environment must go beyond making static content or tutorials available via a web browser (Masoni, 2010). Opportunities for situated and social learning (Collis et al, 2005) are one way to help students achieve the goal of lifelong learning, outlined in the college prospectus (Overview of the HCT, 2011). Offering a trustworthy source of quality online learning could also provide a way for the HCT to distinguish itself from the 'diploma mills' that saturate the online learning market (Simonson et al, 2005).

1.2 Objectives of the study

The study compares the current choice of institutional VLE (BBVista) with open source alternatives and evaluates the strengths and weaknesses of different tools (Moodle and PLEs) for online learning management. Findings show that, whichever platform is chosen, it should incorporate opportunities for learner autonomy and facilitate the HCT graduate outcome of sharing and managing information (Overview of the HCT, 2011). Focus on staff and student preferences for the use of ICT in teaching and learning helps to identify suitable strategies for online learning design. The difficulties of harnessing course related student contributions are explored, with the aim of identifying possible ways around obstacles to participation. Research into these areas provides a background for learning design on an online course in basic computing (ITEC N100), using social software and multimedia to motivate student participation and facilitate life-long learning.

1.3 Getting the most out of the institutional VLE

Since the early 90s, BBVista has been in operation throughout the HCT system. This package, which costs between $100,000 to $125,000 per year (Deltawire, 2010) is used for the management of student records and the administration of online exams and the collection of grades. From an institutional perspective, there are several advantages of such a system: it provides a safe environment for storing personal details and allows easy tracking of attendance and student progression throughout their studies. From a pedagogical point of view, a ready-made learning template helps to link learning to outcomes and provides a forum for course news and announcements. Built in communication tools (email, discussion boards and chat rooms) offer channels of communication between students and staff. There is also a function for making and tracking student completion of online quizzes (Siemens, 2010).

For the HCT, there are many other advantages to managing learning through BBVista. Firstly, there is perceived pedagogical value in the use of one uniform system across campuses. According to Fauzan Qazi, Information Tech Programs Chair at RKWC (2011), investment in BB Vista is deemed to improve the quality of courses, allowing more functions and connections. As a result, all teaching faculty are asked to use it as extensively as possible in their day to day teaching. This is reflected in management initiatives such as competitions including 'the Blackboard exemplary course program' (Blackboard Learn +, 2011) to encourage the effective sharing of good practice. One example of this

is a forum for resource sharing, to provide staff the opportunity to contribute learning objects that are ready to be published to a shared repository. The aim of this initiative is to:

"Foster a more dynamic environment by providing a mechanism for the development and sharing of more materials across the system." Burridge (2009)

For course design, the advantage of such a repository is to save staff time, as they could share reusable learning objects, for example multimedia 'how to' tutorials, that could potentially be incorporated into different courses. BBVista then, offers one possible platform for the HCT to transform existing materials, created for established vocational courses such as basic computing into credible, blended and distance e-learning products.

From the point of view of privacy, BBVista offers another advantage. Due to cultural restrictions in the Gulf, the extent to which female students may express themselves online is limited and, despite the potential of public social networks to develop communication and information management skills, their use may be frowned upon by traditional families as it may lead to exposure to inappropriate online content or chatting between men and women (Azaiza, 2009). As a result of these concerns, teachers may often be reluctant to experiment with social software and prefer to operate within the relative safety of the institutional system. This could contribute to the argument in favour of using BBVista as the online learning management system at the HCT. In terms of teaching and learning, many of the tools for collaboration that have become popular amongst online learners in recent years, such as wikis, blogs, microblogs and social networks (Siemens, 2010) have been added to the Blackboard suite (Blackboard, 2006). Keeping these tools within the LMS could be considered one way to encourage collaborative learning by giving students the confidence to share content with their peers without the need to publish their work to an unknown audience in the public domain. These are some of the reasons that the HCT may wish to continue investing in BBVista.

1.4 The limitations of the current institutional LMS

Despite the advantages outlined, there is growing awareness of the limitations of the institutional LMS:

"Educator frustration with LMS views of learning is driving alternative views of learning. Instead of having the software defines learning, organizations are beginning to first define learning, and then seek tools (and tool suites) to meet desired needs". Siemens (2010)

The limitations of institutional VLEs have been documented in an Ofsted (2009) report on the use of VLEs in schools and colleges. The study points out that the institutional LMS should not be seen as an automatic solution to meeting learner needs. Careful setting up is required to make activities work and, at present, this is usually carried out by one or two institutional 'champions' (Ofsted 2009), who develop materials and encourage their use amongst learners and staff. The report finds that the concept of the VLE is still new for most staff and that training is required to avoid the use of the repository as a place to shelve materials. The need for more sharing of good practice amongst peers, collaborative working and further promotion of the benefits to learners to help publicise the capabilities of these systems is also pointed out as a priority. Results from around 40 schools and colleges showed that no institution's VLE covered all aspects of the curriculum and that their use represented 'only a small proportion of the student learning experience'. (Ofsted, 2009). According to Wheeler (2009), one of the most notable points from this report is that the systems are too complex for most teachers to handle, resulting in a 'dumping' of content, which does not translate to a face to face classroom setting. Wheeler (2009) argues that VLEs intended for teaching should be designed by teachers rather than commercial companies as, at present, they do not support the learning process adequately. Considering the amount of money the systems cost, their limited take up amongst staff is a genuine concern for management:

'The (expensive) institutional VLEs I am familiar with are in reality administrative tools for storing documents and forms. While they do have add-on discussion boards, blogs and wikis, these are poorly designed and not a patch on applications available on the web - often for free'. Somabula blog, quoted in Wheeler (2008).

This is illustrated by a comparison of the BBVista interface, which lists functions in a side menu, and the free, open source LMS Edmodo, which uses the familiar 'status update' or 'post' format to allow users to update their status or add posts to a central forum.
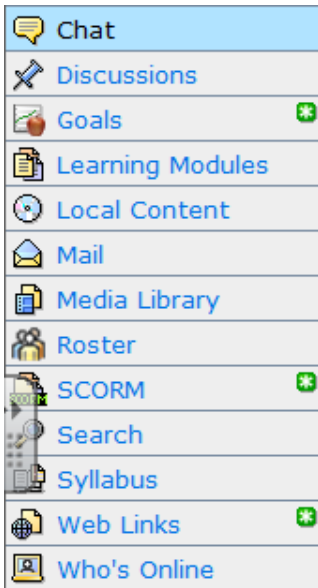

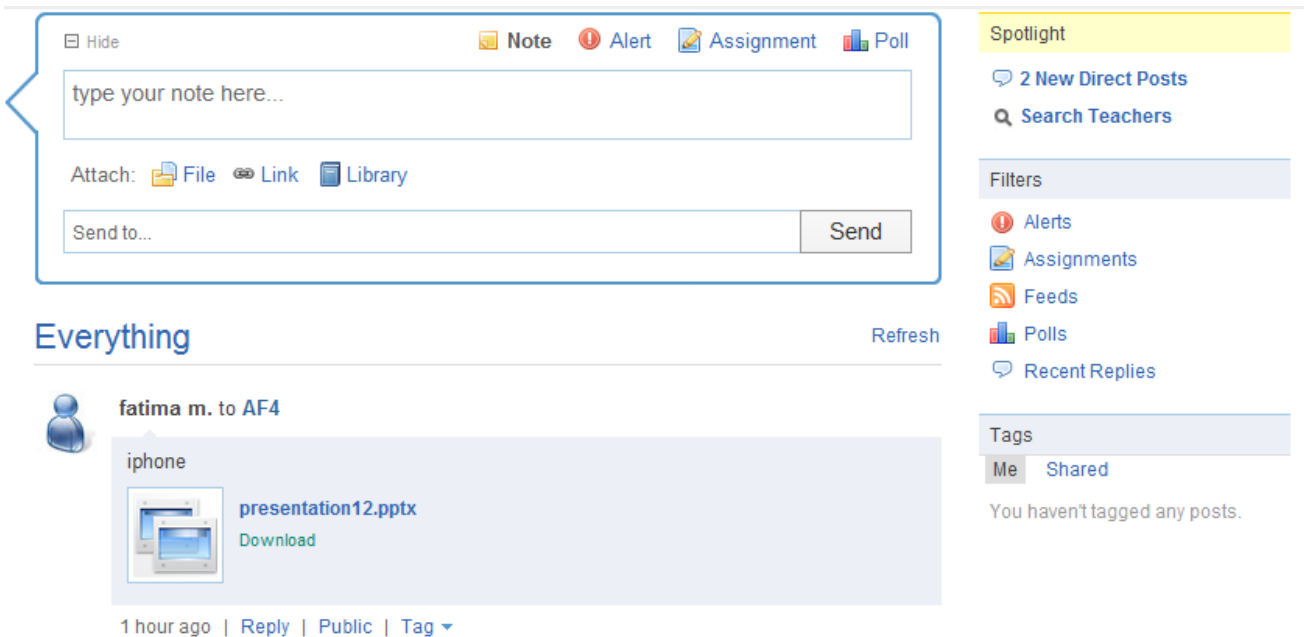*Figure 1: BBVista communication tools*

Figure 2: Edmodo interface

Many case studies highlight successful courses launched through BBVista: Simulated Gaming in Business, University of Glamorgan, Online Delivery of BA Business Studies, University of Derby (JISC, 2009). In most of these cases, though, the repository is secondary to the activities, which could be launched through an alternative platform. The quantity of examples of good practice using BBVista could be due to the prevalence of this tool over the last 10 years (Online, 2006). The 'intensely hierarchical' (Coopman, 2009) structure of Blackboard puts the instructor in control. From the HCT perspective, this may have some advantages. For example, content can be sequenced to avoid jumping to the next activity without completing the first. Also, a function exists within BBVista for conveniently grouping contributions from each learner into one place. The disadvantage of this, however, is that they may not make sense when posts are taken out of context and grouped together. Learner contributions to a platform such as Edmodo, on the other hand, although engaging learners by allowing them more flexibility in the content they add (Coopman, 2009), may be difficult to monitor as such a grouping function is not available. One way to address this is through reflective assessment, which requires students to keep an account of their own contributions and put them into the context of their learning (Creme, 2005).

At the HCT, lack of staff take up of BBVista is noticeable. Initiatives such as the shared repository, for example, although perhaps attracting input from a few staff members at individual institutions, have not resulted in any obvious, co-ordinated effort to share resources throughout the system. This may be because sharing between programmes already takes place in local drives, or because there is a general lack of awareness of the existence of an alternative repository. It could also be due to the need for staff to log in to and navigate the system to upload files or because educators may already have access to a wealth of resources on the World Wide Web. Similarly, although the institutional platform includes the capacity for student blogging, course wikis and podcasts, there are few, if any prominent examples of the use of these tools within BBVista for collaborative student projects at the HCT. Generally, unless it is mandated by management, e.g. for course wide assessment, there is little evidence of any use of BBVista on a course-wide scale at RKWC. Anecdotal evidence from conversations in the staff room suggests that the platform is unpopular due to its 'clunky' interface and the difficulty of navigating between teacher and student pages.

1.5 Exploring the alternatives to BBVista

Research into Moodle as a possible alternative to BBVista shows that such a platform would save the college money, be more user friendly and achieve more 'buy in' from staff (Siemens, 2010). The open architecture of this system would be more flexible and would not need to be closed for massive uploads of new software and, if running slowly, would allow staff to make changes to code based on advice from the Moodle community (Deltawire, 2010). Although Moodle offers a possibly more dynamic learning environment than BBVista (Siemens, 2010), it is important to consider the needs of learners and educators to make the system effective. Including other web 2.0 tools in learning design, for example, may help learners to create personal learning networks (PLNs) to promote life-long learning (Siemens, 2010), but they also need to be equipped with the digital literacy skills necessary to exploit these resources effectively. A crucial part of this is allowing students the freedom to choose their own online tools i.e. how they choose to find information (Mott, 2010). For HCT learners, the sheer volume of online tools available may quickly become overwhelming. For this reason, the educator needs to provide suitable models, but at the same time allow for flexibility of learner choice (Weller, 2006).

1.6 Institutional drivers for change

As well as technological drivers for change, there are other, more practical reasons for the HCT to investigate alternatives to BBVista (Azaiza, 2009). To keep up with increased competition in the education sector and to maintain its position as a major HE provider, several attempts have been made by the institution to gain accreditation from institutions overseas (HCT news, 2010). To meet the standards necessary for such accreditation, there is a need to review current approaches to assessment and opportunities for staff development. The significance for HCT learners is that they are now expected to meet international standards of graduate competency such as technological and information literacy. For ICT courses, this means adhering to learning outcomes stipulated by the computing accreditation commission ABET, which include demonstrating understanding of:

"The fundamentals of the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies".

 (ABET, 2010). The current dilemma facing the colleges is how to respond to cuts in funding, but at the same time meet these standards. An open source VLE incorporating web 2.0 tools offers a possible solution, but this must be balanced with the need for privacy and the protection of student information.

1.7 Conclusion – implications of the current study in the context of the HCT

Learning management systems may offer value to organisations, but the emergence of free, online alternatives, such as the course management system Edmodo and free online quiz makers such as Quia, for many teachers, have made these functions in BBVista redundant (Weller, 2007). This shift, by learners and educators, to public forums has lead to educators and managers to question the need to pay for an institutional system (Mott, 2010). A shift from the established VLE in BBVista has the potential to save money for the institution and offer students a more dynamic learning platform (Siemens, 2010). However, several factors need to be considered to make this option viable. There is a need for the sharing of good practice in online learning design amongst staff. Also, learner needs should be considered, if they are to be properly engaged and be equipped with the skills for life-long learning.

2. Literature review – the strengths and challenges of integrating ICT to the HCT syllabus

2.1 Introduction – the need to adapt to technological change

The exponential rise in information available on the internet (Steinert & Ehlers, 2010) is bringing into question the traditional role of institutions and teachers as holders of knowledge:

"One effect of open content has been to dramatically increase the availability of information to students and independent learners. As a result, the role of the teacher is undergoing a slow but definite change, from the guardian and dispenser of knowledge to the guide and coach for learners faced with an overabundance of resources". Horizon Report (2010)

According to Steinert & Ehlers (2010), the amount of information available online results in rapidly growing knowledge cycles, meaning a 'voiding' of ICT skills every 5 years. This could range from using the latest version of a word processing package to navigating websites or institutional intranets and using social software e.g. social bookmarking/ blogs/ Wikipedia to locate and synthesise information. To respond to the change, it is generally recognised that institutions need to teach learners how to navigate and manage information that may help them in the future.

"Students have unparalleled access to learning materials; what they need from teachers now is help cultivating the skills of finding, assessing, interpreting, and synthesizing information."
 Horizon Report (2010)

 Siemens (2008) describes how, in the digital age, knowing where to find information may be more important than knowing the information itself. For this reason, many universities are already adopting new educational methods, such as the use of social networks and bookmarking, to effectively engage what are termed 'New Milennium Learners' (Steinert and Ehlers, 2010). Stanford University (2011)'s initiative to make podcasts of lectures available in iTunes, allowing access by anyone with an internet connection or MP3 player is an example of how learning has been made more accessible and learner centred. This shift to more flexible, informal and social learning has also resulted in the need for educational institutions to link learning to 'real life' skills. For example, traditional, generic graduate outcomes such as effective reasoning are expanding to include information sharing and management skills Oliver (2002). Thos competency is described by McCausland et al (1999) as "the capacity to identify an issue and then locate and evaluate relevant

information in order to engage with it or to solve a problem arising from it". To respond to this change, the institutional learning environment should incorporate opportunities for social learning through social networking/bookmarking tools (Koper, 2004). For learners at the HCT, however, integrating 'new millennium' (Steinert & Ehlers, 2010) information management skills presents several pedagogical challenges. Firstly, learners are limited by their language ability, which is a significant barrier to participation. Also, although they may have exposure to Web 2.0 technology, such as email and social networking, it should not be assumed that they are able to effectively exploit these tools for learning.

2.2 Integrating information management skills at the HCT

In 'The net generation are not big users of Web 2.0 technologies', Kennedy et al (2007) provide a useful background to learner preferences which could relate to the development of blended and distance learning at the HCT. In their report, Kennedy et al (2007) suggest that, although certain tools such as social networking and emails have become part of the 'everyday fabric of student life', students may not be inclined to apply these tools for learning. At the HCT, from observations in the staffroom, it is obvious that some teachers are attempting to exploit the power of social media for learning. Open source wikis and blogs, for example, are frequently the primary means of communication with students and serve as a useful means of gathering evidence for assessment e.g. writing and speaking portfolios or business projects. Using these tools to bridge the gap between informal and formal learning however, remains a challenge. Firstly, affective factors may prevent learners from wishing to take part (Crook, 2008). Also, for the educator, keeping track of learner contributions to different online forums may be challenging if not impossible. The difficulty of finding a balance between teacher-controlled, institutionally managed learning systems like BBVista and open source web 2.0 tools such as blogs and social networking/bookmarking sites, which shift control to the learners themselves is causing discussion amongst educators:

"Social software has initiated discussions about the extent to which tools should be separated or integrated in systems". (Dalsgaard, 2006)

Research into the power of social media reveals the importance of incorporating such tools into online and blended learning. Collis et al (2005), for example, point out that they give control and freedom to the learner, which is considered by Anderson (2006) to be an integral part of 21st Century

life-long education and learning. On the other hand, the increased use of social media also presents many challenges. For example, while networked learning and web 2.0 tools can be seen as a way of coping with ever growing volumes of information (Educause, 2005), it may be difficult for learners to discern which information is reliable. Wikipedia is an example of a popular source of information which is not considered valid by academia. Also, due to the 'instant' nature of search engines, learners may be tempted to cut and paste the first answer they find, rather than investigating topics on a deeper level. This is certainly an issue for HCT learners, who lack experience of reading and writing in English (Moussly, 2009).

Accessibility to social networks means that there are more options now available to educators to design socially constructive tasks (Siemens, 2006). Social software can increase autonomy by giving learners a platform to share their thoughts with the world. However, it is likely that learners, even at higher levels, may have little or no experience of extending this kind of writing. The new challenge for educators is to find ways to stimulate the communication process, by helping learners to find, investigate and share dialogue around their own areas of interest. Applications such as social networks are a way to help learners build networks that provide support from their own community, giving them the incentive to engage in learning beyond the classroom (Downes, 2006), Nevertheless, there is no guarantee that learners will be able to sustain such engagement. Kreijns et al (2002), for example, discuss the danger of overlooking online distractions and off-topic interactions which can cause learners to detract from the task. This could be an important factor when considering how to structure activities in online forums, particularly for young students with limited world knowledge or communicative competence i.e. non-native speakers of English, who may feel more comfortable in informal chat, away from the course website or in conversations not relating to study. Weller (2006), points out the need for educators to be flexible in giving learners the freedom to choose the tools they use to approach a task. However, this poses a problem for teachers aiming for consistency and reliable assessment of whether learning is taking place. Making social networking tools available within the VLE is one way that student interaction could be better monitored, but according to Mott (2010), keeping learners within the confines of the institutional VLE could be an obstacle to participation. He describes how making student work accessible only through an LMS creates a 'walled garden' which limits participation only to those who are enrolled in them. This environment also assumes that learners have given their consent for tutors to have access to their social exchanges, which they may sometimes prefer to keep private (Crook, 2008).

2.3 Appealing to HCT learner preferences

Kennedy (2007) suggests that the best way for educators to 'reach' students in tertiary education may not be through You Tube or blogs, as these may not be the forums that they access most. Peer-to-peer collaboration through social networking sites such as Facebook may appeal more, as these tools are used more frequently (See figure 3).

Figure 3: students share topical links in Facebook

Building networks that provide support from a community of practice (Wenger, 2009) has the potential to extend formal learning beyond the classroom. Although there is nothing new about the social constructivist theory of learning explored by Vygotsky and Piaget in the 1920s, using applications such as Facebook could be a way to help learners to build networks that provide support from their own community, giving them the incentive to engage in learning beyond the classroom. According to Prensky, (2001) this appeals to students' *'digital native'* familiarity with social software and helps to make the research process student centred. Once again, however, this raises the difficulty of monitoring how learning takes place in such an informal community. According to Conole (2008), students may have pride in finding 'secret', or informal avenues to finding resources

that help them complete teaching/learning tasks, highlighting the user driven, 'bottom up' nature of learning 2.0. The difficulty of keeping track of learner input to multiple networks gives rise to the need for alternative assessment, whereby learners are responsible for monitoring and reflecting on their own input. Nevertheless, this kind of reflection assumes relatively sophisticated language ability and critical thinking skills.

To facilitate engagement in deeper learning around course related information, the educator needs to consider ways of scaffolding informal learning. One way to do this could be for learners to share mutually beneficial links in sources such as the social bookmarking site Delicious, or the micro blog Twitter. This kind of socially constructive learning could be an effective way to develop the collaborative skills needed to manage information online. A simple example of this, for HCT learners with limited English, could be through sharing of links to useful language learning websites (see fig.4). Again, to measure whether learners accessed each others' links, this kind of activity would require some reflective feedback, for example a summary of what has been learned, as a mechanism to measure whether learning is taking place. Incorporating this kind of reflection would need careful scaffolding, for example through teacher models, shared in the VLE.

Figure 4: informal exchange of resources amongst students in Facebook

Crook, (2008) points out that practitioners, whilst taking a less visible role, need to facilitate navigation of a constantly changing environment by designing activities that support organisation, participation and exploration. The VLE can provide a central focus for such activity, where further channels of communication i.e. usernames in other networks can be shared. This offers a useful way for learners to make connections outside of the formal learning environment which can be used for study related questions e.g. technical help from peers. The value of having one conveniently accessible place for sharing resources is identified by Von Hippel (2005) as an important pre-requisite for facilitating "networks of interpersonal ties that provide sociability, support, information, a sense of belonging and social identity". Wellman (1998), quoted in Von Hippel (Ibid).This observation, however, presents the challenge for educators of helping learners to bridge the gap between using the web for formal learning and entertainment or social contact.

Crook (2008) identifies four dimensions of knowledge building through Web 2.0: 'the expressive' allows creativity through user generated content such as videos shared in blogs, which may appeal to the reported 'Net generation' (Kennedy, 2007) preference for 'pop video' style presentation. This has the advantage for HCT learners of not having to concentrate on large amounts of text, which can be off-putting in another language (Herring, 1999). Learner generated instructional videos, such as tutorials on how to use certain software, could be a useful way to engage learners. Producing their own learning objects such as video tutorials could help learners to acquire and share the technical skills they are likely to need in the future. Although this assumes technical knowledge on the part of the learner, tutor models, supplied in the VLE could support the process.

Crook (2008) identifies the key to learner participation as the ability to connect and constructively build knowledge with others. He identifies elements such as 'the playful' as transforming previously individual activities like computer gaming into social and collaborative activities, as players chat with each other online. This could be significant for HCT learners, as, if allowed to communicate with a wider audience; they may be tacitly encouraged to engage in authentic communication in the target language, for example chatting whilst gaming. Similarly, learners can attend and discuss virtual lectures in immersive environments such as Second Life. Apart from limited accessibility due to language restrictions, a pitfall of accessing such forums, particularly for HCT learners, is exposure to inappropriate language or content. A possible way to avoid this would be to designate a particular space e.g. the British Council Isle in Second Life, for learners to meet and work on interactive tasks.

Blogs and social networking sites represent 'the social' (Crook, 2008) and give learners a platform to create an online identity and exchange information with peers. The advantage of these forums is that

they can prevent domination of discussions by offering every learner the same opportunity to contribute. However, this process needs to be carefully scaffolded to help learners to gain confidence in writing for an audience. This can be done by providing models and a language framework for contributions which can build from simple exchanges to more complex discussions. Tagging using social bookmarks also socialises 'the exploratory' (Crook, 2008), by allowing learners to subscribe to, or tag mutually relevant content. Again, this implies certain pre-requisite knowledge on the part of the learner which would have to be demonstrated through video tutorials, but tagging could be a useful way to involve learners in contributing to group activities without putting too much emphasis on written communication.

2.4 Digital literacy and the HCT learner

Due to difficulty with Roman script, and the lack of a tradition of reading in most Arab countries (Moussly, 2009), HCT student motivation for extensive reading and writing on undergraduate programmes may be limited. The stress for non native speakers of communicating using only the written word is highlighted by Herring (1999), who notes that students may feel frustrated or disadvantaged when trying to express ideas in another language. To help HCT learners to deal with the volume of language online, tutorials hosted through the VLE could include multimedia such as screencasts or podcasts, to avoid over-emphasis on text.

The conflict between conventional 'content' based teaching and student centred learning is illustrated by Prensky (2001), who sees 'digital immigrant' lecturers as still being rooted in the print paradigm, in which the written word is fixed, or written once. *Digital natives* Prensky (2001), on the other hand, are acculturated into a digitally-based 'secondary-orality' (Ong 1982), which increasingly impacts on the 'print model', as transactions are repeated rather than staying static.

Social networking, blogging and micro-blogging may also offer a solution to navigating the web by helping students to break down and share information. The character limit in short posts in microblogs such as Twitter or Edmodo could make information more accessible to students, as they are able to work at their own pace and use translation programmes to decipher messages. Brevity and simple language helps to reduce barriers to students' own participation, as they can use simple language such as 'here is a useful link about...'. A summary of useful links can be kept in student blogs or journals, which can be shared with peers. Again, this task assumes a level of written capability, but examples of model blog or journal posts can be made accessible in the VLE, to give a simple framework for summarising the 'who, what and how' to turn complex information in 'bite sized' extracts. This kind of activity may appeal more to HCT students as posts can be shared. It also

offers an alternative to paper handouts that may never be read. Face-to-face activities such as group presentations based on research can also translate well to an online medium but, again, learners need a frame of reference to help them to organise group work online.

Mobile technology is another factor that can influence students' accessibility to their learning. As mobile devices become a part of peoples' everyday lives, learning can take place at times that fit in with their schedules, rather than those specified by institutions. Weller (2009) writes:

"Many people engage in learning every day, often without realising it because new technologies have lowered the threshold to engagement.... The actual goal of learning is made less explicit, and thus to an extent, learning itself has become further democratised."

Examples of activities supported by mobile learning (Kukulska-Hulme et al, 2007) are digital storytelling, citizen journalism, blogging and photo sharing, all of which are powered by social, rather than institutional incentives for participation. A user generated discussion in a social network, for example, might result in more participation than a discussion board set up by a tutor in a course forum. One of the reasons for this may be the informality and lack of any consequence other than peer recognition in a non-institutional environment. Again, this poses the difficulty for educators of monitoring learner participation. Open source personal learning networks (PLNs) also have the potential to personalise the organisation of information by including the familiar 'app' buttons seen on mobile devices such as 'chat' and 'forums'. This visual representation appeals to users with experience of the functionality of mobile devices, potentially increasing learner motivation to take control of their learning (see fig. 5). Again, however, bridging the divide between the use of such media for informal socialisation and formal learning presents a challenge for the educator, who needs to find ways to promote online learning as a social activity.

Figure 5 – open source personal learning network

2.5 Barriers to learner participation in online study

Despite the potential offered by technology for learners to take part in collaborative knowledge sharing, there is evidence that students may not wish their learning to be automated and prefer face to face contact with peers and tutors. Although learners use the web to access online reference materials for their studies from home, few of them contribute to wikis or blogs or use social bookmarking tools. A study of students at Oxford Brookes University, (Benfield, Ramanau and Sharpe 2009) found that 88% preferred face to face contact with other students compared to 53% through social networking. This suggests that there is less involvement in online construction of knowledge amongst peers than may often be assumed. Other studies (Hagel & Shaw 2007; Bruce et. al., 2005; Frederickson, Reed and Clifford 2005) also document a strong preference for face-to-face learning in conventional campus based and distance education where tutorials were available, suggesting learner preference for face to face contact with tutors and peers whenever possible. From the HCT perspective, this is a reminder of the value of a blended learning approach, allowing the tutor to act as a face to face facilitator of e-learning. Where face to face contact is not possible, the next preference for contacting tutors was email (82%), reaffirming student familiarity with this method of

communication. Interestingly, there was virtually zero desire to communicate through social networking, confirming, as Sclater (2008)'s point that:

"Students do not necessarily want their education – which they may see as quite a separate part of their lives- to mix with their social environment".

The study also revealed that the use of multimedia for watching video or listening to music was much higher than for online communication, suggesting that technology is most commonly used for entertainment rather than sharing information. This highlights the possibilities for the use of multimedia in learning design, scaffolded through the VLE.

There are also arguments that Web 2.0 technologies can inhibit traditional literacy and critical thinking skills, due to the reduced attention span of the 'hypertext minds' of the *Net generation* (Oblinger and Oblinger, 2005). One reason for the lack of enthusiasm for collaboration and information sharing online may be insufficient learner experience with making sense of overwhelming amounts of information. As a result, students may not recognise the need to analyse and discern the legitimacy of their sources and may develop a 'cut and paste' mentality. This can be a major obstacle to peer learning and highlights the issue of digital literacy skills. The sheer volume of text based content on the web requires new browsing and summarizing skills which take time to develop. Learners who have been through conventional educational institutions may have experience of reading and synthesizing information from a physical location (library), where sources (books and journals) can be assumed to be trustworthy. For online learners, a new set of skills is required to navigate huge volumes of information, much of it in text format. For students entering the HCT, this may be a perplexing task. There is an argument that tutor support needs to be available until sufficient learner autonomy is established. As Sclater (2008) points out:

"Many learners will continue to need considerable hand-holding in the online learning world. Leaving the management of their formal learning activities entirely up to them will result in increased drop-out rates".

Teachers and course designers need to be able to facilitate learner guidance, but, as Franklin and van Harmelin (2007) point out; teachers themselves may be affected by a 'skills and/or culture crisis', if they are forced to 'use unfamiliar tools and work in unfamiliar ways and alien environments'. Although digital literacy skills may be more developed amongst teaching staff, their use of

technology is often limited to their own research or class preparation (Cuban, 2001). Bridging personal use of technology with practice is a gradual process that requires experimentation by trial and error.

Technological mediation of learning can affect social skills and cause alienation and disconnection. As Thorpe, (2008) suggests, this may be due to lack of learner experience or confidence with online communication.

'In conditions of student diversity and unfamiliarity with online literacy practices, marginalization, isolation, and 'dissensus and conflict' (Blair and Monske 2003: 449) can undermine the goals of collaborative learning'.

Encouraging learner autonomy, independence and nurturing critical thinking skills could be said to be the ultimate objectives of any course of study and these goals are often included in the course aims. In practice, it is often difficult to see whether these aims are being achieved. The learning process is influenced by many factors and the schemas that learners bring with them to the classroom or learning environment are critical in helping them to make sense of tasks. The *Net generation* may be digitally literate, but their interaction with learning materials depends on their previous experience and ability to interact with peers. HCT learners may have a preference for online games and social networking, but this is rarely related to their studies. This can be because they are too challenged by the material or because they are not engaged. Encouraging learners to use social networking tools, blogs or group edited documents e.g. Googledocs for study usually requires the pressure of tasks being assessed and, when they are, this detracts from their authenticity. Web 2.0 tools have the potential to assist learners to become independent, but sufficient scaffolding of tasks is crucial.

"What (students) need from teachers now is help cultivating the skills of finding, assessing, interpreting, and synthesizing information." (Blair and Monske 2003)

This is reflected in the change in generic graduate outcomes such as effective reasoning and the ability to communicate effectively, which are expanding to include information sharing and management skills (HCT Prospectus). McCausland et al (1999) describe this ability as "the capacity to identify an issue and then locate and evaluate relevant information in order to engage with it or to solve a problem arising from it".

2.6 Conclusion - The implications for practitioners in technology-enhanced learning.

Despite learner preferences for face to face contact when possible, demand for online education continues to grow (Allen and Seaman, 2008). This could be due to economic factors, or because technology is more closely interweaved with peoples' everyday lives through portable devices. Downes (2009) argues that in order to keep up with the changing needs, capabilities and interests of learners, a decentralised approach is needed to push learning decisions to those who are closest to the situation: learners themselves. Rather than the learner adapting to the system, education needs to adapt to the learning situation. Recognising the pool of knowledge that already exists (or does not exist) amongst participants, facilitates the identification of learner needs. Downes writes:

"The interaction, in other words, meets and addresses an objection often put of self-directed learners: that they don't know what they need to know". (Clayson, 2005). Through participation and interaction in this wider environment they are able to identify these needs (as expectations, for example), and hence to select and conduct appropriate learning episodes." (Chickering & Ehrmann, 1996)

Studies show that learners' preferences for technology use vary across disciplines, from multiplayer online games for technology students to more frequent library searches by Social Studies and Law students (Benfield, Ramanau and Sharpe, 2009). Design for learning needs to take into account these preferences by offering a choice of activities suitable to the learning context. To make activities learner centred, activities can be structured to draw on learner experience and encourage peer support through learning objects like communal discussion boards. To encourage participation, learning outcomes should be realistic and closely tied to assessment. One way of handing over control to learners is to have them grade each other on their contributions to group projects, although some tutor involvement may be necessary to retain objectivity and moderate disproportionate bias towards un/popular students. A suggested shift in the way students are assessed is to use authentic assessment, whereby learners demonstrate, rather than talk about what they know and can do. This method facilitates a more situated approach and reduces opportunities for plagiarism. Blogging and e-portfolios could also be a form of alternative assessment, as students are required to collect data and reflect on their learning over time, providing a record of how learning has taken place.

The internet has changed the way people access, create and share information. Technology blurs the distinction between formal and informal learning and has the potential to make the process a more personalised experience. Designers need to create tasks which engage and increase autonomy, whilst

allowing reflection and re-visiting of learning materials to assist the cognitive process. One advantage of limitless online storage space is that learners have the opportunity to keep a record of their learning, or re-visit materials in an online course without the self consciousness associated with having to ask for repetition or clarification. Although this kind of processing and synthesis of information may be appropriate for post-graduate study, time and effort is required to help HCT learners to adopt these practices. Blogging, for example, is an effective way of keeping an online record of learning, but making regular contributions and leaving comments on other peoples' blogs may be a challenge for students who are not used to writing for an unknown audience. Bloggers may also quickly become bored if their contributions are not reciprocated. Without a high level of learner independence and focus, some degree of tutor mediation seems appropriate if students are to maximise opportunities for technology enhanced learning.

3. The present study

3.1 Investigating alternatives to the institutional VLE

"Few organisations, including colleges and universities, change unless they feel directly threatened from outside of the organisation, often to the point that their very survival is in question".
Meyer (1997)

Until now, BBVista has been the platform of choice for self access study at the HCT, but due to new budgetary restraints, there is good reason to question the value gained from the cost of this package and to investigate the possibility of a cheaper, more user friendly alternatives. A move to the open source system Moodle, for example, could present such an alternative, but careful consideration is necessary to understand what would be involved in a shift to this system. Pedagogically, due to established learning styles and difficulty with reading in English for HCT students, an instructional approach may be appropriate. One of the main strengths of LMSs such as BBVista and Moodle in this regard is the ability for educators to sequence the release of content, thus controlling the pace at which course material is accessed. Consideration of learning design is necessary to guide students through this process, to motivate reading and engagement with course materials. Tasks should be socially constructive to appeal to '*net generation*' (Kennedy, 2007) experience with social media. This section looks briefly at a case study of how Moodle was implemented at Dubai Men's College (DMC) in 2008, and compares the user experience with BBVista. Findings will show that although Moodle may provide a more dynamic and user friendly platform, it should not be seen as a magic 'off the shelf' solution to learning management, as effective learning design should include opportunities for collaboration via a range of options, to appeal to different learning styles and HCT user experience with ICT.

3.2 BBVista vs Moodle: A comparison

Apart from the cost saving advantage of migrating the HCT's LMS to Moodle, there are several other benefits of using this alternative. Firstly, as Moodle is an open source application, although there are periodic upgrades from the standard version, there is no need for the system to shut down for software re-installation as is the case with BBVista. Also, Moodle's user friendly interface may offer greater functionality, as faculty have more control over learning design (Siemens, 2008). Beetham & McGill (2007) detail how virtual learning environments can make activities and tasks leading to course outcomes more learner centred, through more opportunity for social exploration

and development. An important function of Moodle is that it allows participation in potentially global communities of practice, harnessing the 'power of the crowd' to continually improve upon and facilitate the sharing of learning objects. Conversations around artefacts such as hyperlinks to readings or multimedia presentations are also made easier through a more dynamic interface. All of these functions offer the institution the ability to respond more flexibly to its needs in the face of a rapidly changing e-learning panorama.

3.3 Case study: The implementation of Moodle at DMC

In 2008, there was a trial of Moodle for Business and Finance courses at the Dubai Men's College campus of the HCT (DMC, 2008). A brief examination of this endeavour reveals that many courses were transferred to this medium. However, what is most striking from viewing the design and layout of the courses is their similarity to HCT courses presented in BBVista. Most of the material is static and, it seems, there is little incorporation of social media in the learning design. Despite the advantage of contact with a potentially global community of practice, there is little evidence of learner centred activities such as participation in discussion boards. This could be one of the reasons why the platform has seen no activity since 2008. Another factor causing limited exploitation of the resource could have been a lack of technical and pedagogical training for staff. This highlights the need for staff to be trained in how to manage and deliver online content, perhaps by participating in a training course run through the medium itself. Conole et al (2008) point out that, despite the possibilities for collaborative learning made possible by technology, opportunity for sharing best practice in e-learning through social networking may not be exploited to its full potential. This may be due to the difficulty in articulating a process that is largely tacit and dependent on local context, or the tendency to stick to existing practice and think of learning in linear rather than 'free floating' terms. According to Conole et al (2008) a major obstacle to harnessing the principles of social networking for education is getting teachers to share ideas. This is partly due to the difficulty explaining learning design, but could also be to the demands of keeping up with the constantly changing environment of the web and the range of tools available. There is an argument that, precisely because of the plethora of new technologies and ways they can be used in education:

'teachers can no longer rely on tacit knowledge and past experience as a means of guiding their design process; it is no longer possible for them to be experts in all the possibilities.' Conole et al (2008)

From an institutional perspective, commenting on and modifying others' designs in Moodle could act as a means of eliciting designs from peers using a 'common vocabulary and understanding of

learning activities'(Conole, 2008). The sharing of learning designs may be an effective way of encouraging staff to embrace the openness and interactivity afforded by Web 2.0 tools. A collaborative exercise like sharing designs in a forum might motivate teachers to submit ideas not only for each others' benefit but for recognition within the institution. Laurillard (2002) highlights the need for academics to 'share their experiences in order to build an account of practice in the growing debate on online learning and teaching and the role of the teacher.' Central to this interaction are objects, which could be incorporated into the Moodle design template in the form of videos or worksheets that would assist practitioners in learning vicariously about uses of new technologies within their own community of practice. One way of doing this, suggested in a journal entry by Burns (2009) is to record classes involving technology, to be posted and commented on in a virtual discussion in which tutors offer feedback on each others' lessons. Providing hyperlinks to such recordings in the Moodle course homepage may provide valuable opportunities for vicarious learning and peer collaboration. Burns (ibid) also outlines examples of how Web 2.0 tools have been effectively used in teacher training by requiring participants to share their evaluations of Web based resources through social bookmarking. Inclusion of a section entitled 'useful related links' in learning activities and a summary of findings may help to harness resources related to the specified design.

From the learner's perspective, the main advantage of setting up materials in an online forum such as Moodle is the possibility for user appropriation of online tools and interaction around learning objects. Although institutional course management systems such as Blackboard Vista provide functions like chat and discussion boards, they do not offer the same potential for social networking as open source tools. They also tend to be cumbersome compared to the dynamic environment of an online forum, which benefits from a wider range of participants and fosters collaboration. Stephen Downes (2009) describes how social networks create a cross-over of information that becomes ever more fluid:

 "Systems supporting social networks represent a partial decentralization of the management of learning, pushing some decisions (such as association with other learners or clustering of material into categories) from central decision-makers to the learners themselves."

The effect of the availability of free floating information is to force institutions to re-consider course content such as 'syllabi, teachers' guides, lecture notes and material, reading lists, etc.' Geser (2007) and think in terms of a more democratic and learner centred approach.

Whilst the initial objective of many courses may be to create a 'repository' of resources in a single location, the boundaries of such a resource do not facilitate the independent discovery and sharing of learning materials that can be achieved through social networking. Wenger (2007) suggests that the potential of connecting with communities of practice is that it allows professionals to find their identity through meaningful engagement with peers with the communal goal of improving the quality of shared information. Feedback from peers on contributions to Moodle could motivate participants to add more content for no other reason than the aggregate benefit of the community. The challenge for the future success and sustainability of resource sharing through Moodle, as seen in the DMC (2008) example, is convincing others of its benefits. Wenger (2007) describes the phenomenon of 'giving up your claims of knowledge for peer review' as a scientific revolution:

"this move from alchemy as an individual process…, to this communal process of making a statement of truth of your claims to knowledge inspectable by a community and actually contestable by that community." (Ibid)

Wenger also suggests that once trust stabilises around an idea, it has some credibility. Although persuading teachers to collaborate and share ideas may be challenging, it offers great potential for collaborative learning in the future.

3.4 Learning design in the VLE

Learning design is core to the teaching process. The ultimate learning experience students have is the result of how a teaching session or some learning materials are designed. (Conole, 2008) In the creation of learning materials either for independent study or facilitated by a tutor, the impact of good design becomes obvious. Teachers have the skills and experience to relate learning to a specific context. They can also make judgments about the best form of assessment at the appropriate time. Sharing learning designs in Moodle can help to articulate this process so that it can be reused in different contexts on other courses.

Although there is no clear consensus on the extent to which learning styles influence the way that learning takes place, it is generally agreed that any course should incorporate different options, to offer participants choices in how they develop as learners. Teachers may already do this, but be unaware of the theoretical approach they use to incorporate learning activities into course design.

Learning goals or outcomes are a good starting point in the design process (Beetham 2007a). Once they have been decided, activities and tasks can be planned around them. One advantage of VLEs is

that they allow learners the chance to navigate their own path through the activities to get to the learning outcomes. To achieve this, there is a need for a structured format and breakdown of activities to help learners manage their time. The wording of learning outcomes is important to define different levels of attainment, for example related to knowledge, skills and values. This reflects a constructive approach, favouring the integration of skills and knowledge, planning and reflecting. Beetham (2007b) argues that learning goals must be relevant and meaningful to learners, who must have the chance to consolidate new knowledge by appropriating it in some way through extended tasks. VLEs can also facilitate this process through a socially constructivist approach. Activities can be designed to foster collaboration between participants through discussion of key themes, either through discussion boards in the course forum, or in personal blogs. The minimal or 'low key' involvement of the course tutor and the emphasis on the value of collaboration with peer learners is made possible in the VLE through synchronous and asynchronous discussion tools i.e. discussion boards, chat rooms or virtual classrooms in Elluminate or Wimba.

Beetham (2007a) points out that, as long as sufficient teaching resources are available, learning goals can be much more broadly defined through VLEs, making design more learner centred:

"Individual learning logs and e-portfolios allow learners to collate evidence towards broadly defined learning loads, and to reflect on their progress."

(Beetham, 2007a)

This kind of personal learning repository, which can be shared through the VLE, can be assisted by concentrating on the criteria of goal setting, to assist learners in reflecting throughout the learning process; sharing options, to allow them to decide which information they make public and comments, to allow communication with tutors and fellow students.

An alternative option for students to share and reflect on their learning is through a personal learning network or environment (PLN/PLE). Examples of these include Pageflakes, netvibes, Yahoo pipes, iGoogle and Symbaloo. All of these offer syndication of feeds from other locations and work effectively as aggregators of different web pages, including documents stored in the cloud e.g. Googledocs. This kind of PLN 'dashboard' is a useful way for learners to keep their favourite links in one place, but as a repository for evidence of learning may be more difficult to share with tutors and peers as they tend to be personalized, with content and links that learners may wish to keep separate from their studies.

3.5 Collaborative learning

Incorporating web 2.0 tools into learning activities such as group discussions, keeping a journal in a blog, or having students comment on each others' work facilitates collaborative meaning making. This kind of co-participation is a possible way to bridge the gap between formal and informal learning, but may not appeal to all learners. However, as Beetham (2007b) points out, there is also an argument that learners need to be challenged with different types of activity to become flexible enough to take responsibility for their own learning. The advantage of VLEs is that learners can choose the extent to which they participate in forums, and concentrate on tasks that appeal to their own learning style, such as manipulating data in a spreadsheet, or finding and synthesising a series of resources from the web. Whichever learning style is favoured; holistic, serial, linguistic, spatial, numerical, audio visual or social (Kolb, 1984), the web offers limitless opportunity for further exploration of themes and can therefore be said to favour constructive and situative, rather than associative learning, as learners focus on the tasks and activities leading to learning outcomes, rather than on the technology that is used to carry them out.

According to Steinert & Ehlers (2010), changes in technology have lead to 'the demand for "new" learning scenarios which are self-organised, learner-oriented, situational, emotional, and socially communicative.' This reflects the shift towards more informal ideas sharing and collaboration amongst virtual communities through online networking, virtual conferences or 'webinars' and reflections on learning and practice in blogs and micro-blogs. The JISC (2003)'s paper 'towards a Unified e-learning strategy', points out that, although this shift has the potential to transform the way teaching and learning take place, it cannot replace the role of the teacher or lecturer in the learning process, but should be seen as an aid to existing approaches to teaching. Educators bring with them a diverse range of backgrounds and knowledge of best practice in their field. At the HCT, this process is concerned with engaging the learner by appealing to their schemata and promoting the desire to gain knowledge and improve ability, not only for extrinsic rewards such as exam grades, but for the satisfaction of seeing their own progress.

"There is no single, right medium of online learning, or a formulaic specification that dictates the kind of interaction most conducive to learning in all domains with all learners. Teachers and course developers can only respond to learner and curriculum needs by developing a set of online learning activities that are adaptable to diverse student needs" (Fournier 2006)

Oliver (2002) highlights a value, rather than technology led approach by e-learning technologists, who are more concerned with pedagogical aspects of the student experience than the software that facilitates it. Staff may not be technically proficient with different kinds of software, but should strive to make learning as user friendly and student centred as possible. Graham et al (2001) use a set of principles for effective practice originally identified by Chickering and Gamson (1987) and apply these criteria to online interaction. The areas of good practice identified include: 'adequate channels of communication'. This highlights the importance of a 'back channel' to the institutional forum which, just like the staff coffee lounge or student common area, can provide a valuable forum for informal collaboration, observations and discussions. This interaction relates to 'Meaningful co-operation between students' a great deal of which may take place behind the scenes in informal discussions or ironing out technical difficulties. In the HCT scenario, this process could be assisted by student contributions to a course wiki, to provide an opportunity building evidence of learning through text. Sharing and discussion of projects amongst peers can be achieved in activity design by the sharing of group work in the VLE. The process that goes into the choice of media for collaborative online projects can reflect the diverse range of styles and group dynamics.

3.6 Representing and sharing learning designs

Being able to represent learning design helps to create a process for sharing the most valuable properties of learning activities for reuse in different contexts. It also helps to guide learners through complex activities. Conole (2008) points out that the amount of theories and digital tools that can be applied to learning design is overwhelming, and puts forward a method based on Activity Theory (Engestrom, 2001), by which aspects of learning activities can be represented through 'mediating artefacts' such as multimedia which can be used to capture and share practice in the VLE.

3.7 Practitioner choices

Teachers go through the process of learning design every day, but may not articulate their approaches overtly. Augostinho (2006) points out the need for a standard notation system in learning design. This is difficult to achieve, as teachers are idiosyncratic in their planning and teaching. Teachers may not, for example, feel comfortable trying to follow someone else's lesson plan without adapting it to fit their own teaching style. This is an important reminder of the need for flexibility in learning design, which can be achieved through differentiated activities. This is significant for online course design at the HCT, as personalising the learning platform could assist teachers in planning activities. The use of icons is a valuable method of representing design. This is something that practitioners may already do according to their own perceptions of which icons represent certain

activities. A set of icons like the ones below provides a simple indication of what is required of learners.
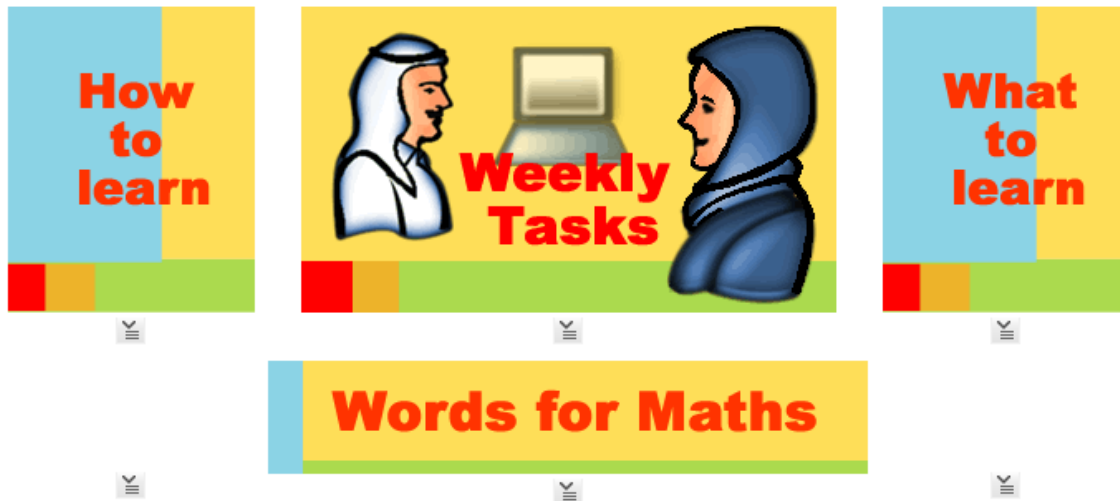

Figure 6 - representation of learning design in BBVista

An investigation of the representation of courses in the DMC Moodle site reveals emphasis on text, which assumes intrinsic learner motivation to read. This may be off-putting for learners at HCT, due to the issues of foreign language literacy already discussed (Herring, 1999).
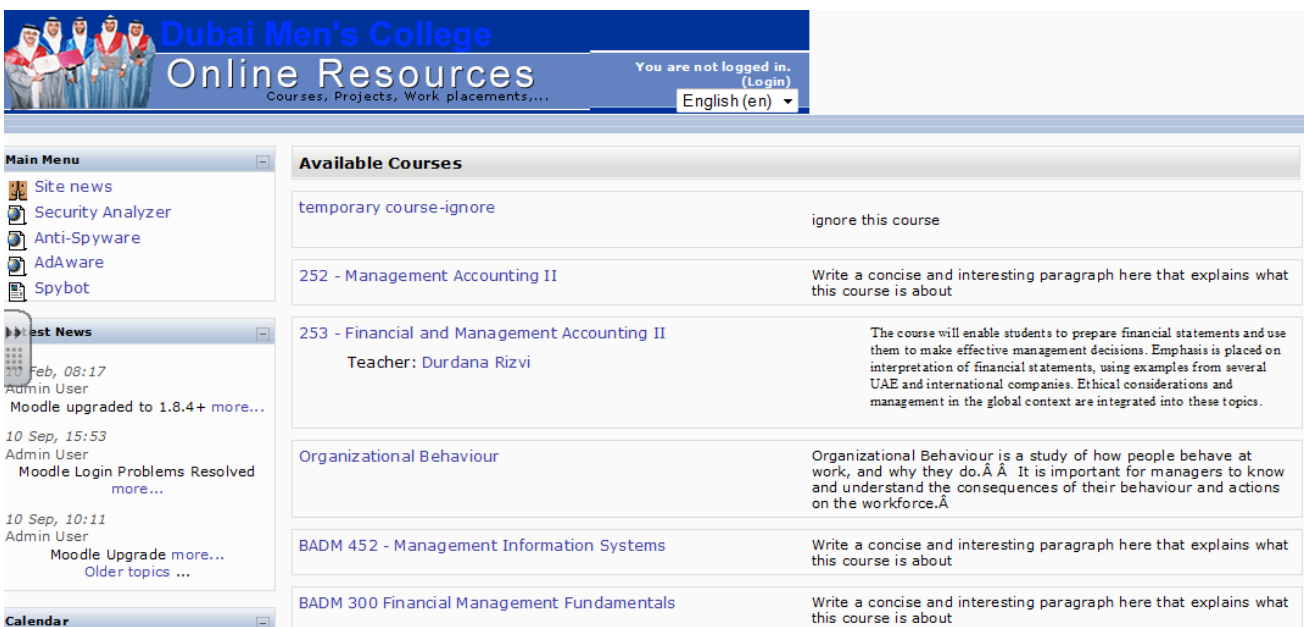

Figure 7 – DMC Moodle course portal

3.8 Learner choices

Like teachers, learners may be:

"Overwhelmed by the plethora of choices (for the innovative use of ICT tools) and may lack the necessary skills to make informed choices about how to use (them)". (Conole 2007)

Some of the kinds of tasks made possible through the use of web 2.0 tools are outlined as:

'Finding and synthesising a series of resources from the web, contributing to a 'for and against debate' in a discussion forum, constructing a group report in a wiki, manipulating data in a spreadsheet and summarising the salient points of a podcast'. (Conole 2008)

Open source tools offer a way to facilitate these activities and enhancing learner independence. It should not be assumed, however, that learners will have the know-how or motivation to participate in autonomous learning without incentives. Pino-Silva & Mayora (2010) highlight lack of learner participation as an obstacle to creating meaningful computer mediated communication (CMC) for non native speakers of English. They use Bishop (2007)'s Ecological Cognition Framework (ECF), which identifies the desires to socialise online, lead others and produce new and original content as reasons for participation. Bishop's theory is that learner participation comes from an intrinsic desire to carry out actions, rather than the needs driven approach outlined in other theories (Mantovani, 1996). Bishop identifies the desires to socialise online, lead others and produce new and original content as reasons for participation. This framework provides a useful basis for encouraging learner participation. Kerwalla (2008) also outlines four factors that learners identified as 'needs' to facilitate their e-learning experience. Perceptions of audience factored highly. This reflects the need for reciprocation for contributions. Interest may wane if the topic does not engage the learner and, if posts go unanswered, learners feel there is little value in writing. Kerwalla (2008) also highlights the need for a community. Wesch (2007) points out that most contributions online are intended for an audience of less than 100 people. Belonging to a group may be more productive than writing for an unknown audience. This can be facilitated by students sharing links to each others' blogs in the VLE. Speed and proximity are influential in persuading learners to stay focused on one task in the fast paced environment of the web. Comments between students were third on Kerwalla's list of motivating factors. The encouragement or otherwise of peers could make the difference between whether learners continue to participate or not. This highlights the need for communicative competence, which may be a barrier to participation. Learners may be encouraged by the brevity of contributions in micro-blogs, where people may tend to try to get ideas out quickly, without necessarily spending time proof reading.

3.9 Conclusion – summary of e-learning needs in the VLE

One of the biggest challenges for teachers at the HCT is to hold students' attention for long enough to get them to perform in English, when they can do all the social networking they need in Arabic. To make tasks authentic, they should be related to the learner's world, which becomes easier to understand with the help of discussion forums and social networks, for example, by access to student posted hyperlinks. Making the process of finding and synthesising information collaborative through micro-blogs, social networking and tagging/bookmarking offers a way for learners to develop information management skills. However, the issue of making his kind of activity appeal to learners with limited literacy skills, who may come from a traditional, rote learning background remains a challenge, but can be assisted by step by step instructions in the VLE leading to socially constructive, collaborative activities.

4 Specification for e-learning design informed by the literature review

From the findings already discussed, it is apparent that there is a need for educators to embrace social software to increase learner autonomy. Tasks designed for 'New Milennium Learners' (Steinert & Ehlers, 2010) including the need for social presence and a responsive audience outlined by Bishop (2007) and Kerwalla (2008) fit with Vigotsky (1986)'s overarching theory of the importance of social interaction in knowledge construction. This project aims to build on these theories by beginning with the familiar (personal information sharing) and expanding to exploring the unfamiliar through the experience of others. A series of e-learning activities is suggested, using open source tools designed to foster a social approach to information sharing. Activities are launched through an open source wiki (Wetpaint), with video tutorials on how to use additional tools such as Twitter and Edmodo. The decision to use free Web 2.0 tools is to appeal to learners' existing familiarity with social networks, to help them connect with each other and with the outside world. Pedagogically, there is a need to relate this activity to learning outcomes (Beetham, 2007a). Unless there is some element of assessment involved, they may be reluctant to take part in this kind of supplementary activity without some obvious result (Crème, 2005). A reflective element in the assessment of contributions to group wiki projects is designed to counter this. Individual users are made responsible for keeping backup copies of important evidence e.g. group work, which is to be used for assessment. Making learners responsible for keeping track of their own learning, with the aid of a teacher model to guide the reflective process also limits the difficulty of assessing learner contributions and guards against the possible eventuality of the wiki being unavailable for technical reasons. Since the course wiki is necessarily editable by all, there is a risk of deliberate or inadvertent sabotage of its content. An undo 'track changes' function assists moderators to rectify any unwanted changes. Another potential pitfall of any online work is plagiarism. This may be difficult to monitor in a constantly updated 'cut and paste' environment. Again, a reflective element in the assessment helps to counter this.

The learning revolves around collaborative meaning making related to the main themes of a basic computing course, ITEC N100 (privacy, copyright, electronic monitoring or surveillance and ownership of Information). Discussion boards in Edmodo are the central focus of the activities, which culminate in a multimedia group presentation to outline the group's findings. The choice of Edmodo as a central forum is to provide a recognisable domain and the sharing of information in groups is designed to develop a sense of community (Wenger, 2006). Group presentations and summaries of findings are shared with other student and, potentially, a wider community of learners

through the course wiki. Although learners may be intimidated by making their work more accessible to a learning community, there is also likelihood that they will be motivated to produce a superior end product for inspection by others (Siemens, 2010). Access to a range of web 2.0 tools (blogs and social bookmarking) is intended to assist learners in the process of shared information management. Reflective assessment aims to make learners responsible for documenting their own use of these tools.

4.1 Intended audience

The activity is designed for ITEC N100 students at RKWC with intermediate level English. Tasks are differentiated to allow for varying language levels and models are provided to assist the structuring of presentations. The group work process is enhanced by the option of aggregating sources of information in the social bookmarking site Delicious. Opportunities for networking and resource sharing through microblogging (Twitter) are included to facilitate the sharing of resources for the key themes of the course. Each group will synthesise the information they have found, first by editing a page shared in the class wiki, then by creating a multimedia presentation to summarize the information. Rich & Holtham (1999) point out that collaborative meaning making and knowledge building from within the student body itself attracts learner interest in the tasks they have been set. Making the research process student centred and including applications that are accessible and editable by all is intended to encourage the HCT learning outcomes (Overview of the HCT, 2011) of collaboration and information management. The activities are anticipated to take around 2 hours each, with the potential to develop independently in future. Although the design is intended to meet a specific need within the HCT, it could also be applied as a generic activity to promote team resource sharing online.

4.2 Stages of the learning design

4.2.1 Familiarisation with the e-learning environment

As an introduction to the learning environment, participants are asked to create a presentation about themselves e.g. 'My home, my hobbies and my family' to share with the class and upload to Edmodo. (See figure 8). This socially constructive activity appeals to the desire to socialise identified in Bishop (2007)'s Ecological Cognition Framework and Kerwalla (2008)'s learner need for an audience to enhance motivation to participate in e-learning.
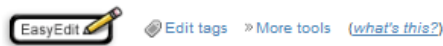
ITECN100 Home

USING ICT - Personal introductions

Welcome to the first unit. In this unit you will create a presentation about yourself using suitable presentation software (Windows Moviemaker or Powerpoint) and you will include a spoken commentary.

You will also upload your presentation to our Edmodo site for the teacher to mark. You will also get the chance to vote on the best presentation.

This will be a great way for other in the class to learn about you and for you to impress your teacher!

Teacher example:

Figure 8 – example of student presentation instructions (Mansoori, 2011)

Reduced emphasis on text is important at this stage, so as not to alienate learners who may be overwhelmed by detailed written instructions (Herring, 1999). A framework of useful language and a teacher model are included, to scaffold the task. Technical difficulties are dealt with by including 'how to' screencasts in the course wiki (see fig 9). Sharing presentations in the Edmodo is an effective way to motivate learners to participate as the end product will be visible to a community of users. Inviting learners to comment on each others' presentations facilitates socialisation and personalises the learning process (Kerwalla 2008). The aim of this activity is to appeal to *'net generation'* (Kennedy, 2007) familiarity with social software i.e. social networks, to access the natural desire for human to human interaction and make the learning a social experience.

Figure 9 – video tutorial page of the course wiki (Mansoori, 2011)

4.2.2 Outline of the group work project

Once participants have become familiar with the discussion board function of the Edmodo, they are put into groups and asked to investigate the main themes of the course: privacy, copyright, electronic monitoring or surveillance and ownership of information. The aim of this task is for students to find definitions of the terms e.g. examples, case studies (e.g. newspaper articles) of different kinds of privacy. Searches can be performed through the Google search engine and, to make the task manageable for lower level English speakers, a simple dictionary definition, including images and minimal text is acceptable. Each group summarises their findings, first in a page of the wiki (see fig. 11), then in an online presentation, with the option of including narration by each of the group members. Although presenting a challenge to learners, giving them the freedom to construct their own sources of information in a shared online space will appeal to the learner participation need identified by Bishop (2007) to produce new and original content. Being able to visit other groups' pages will also provide the audience (Kerwalla, 2007) needed to make the task worthwhile. Plagiarism, which may be an issue in this activity, will be detected by users rather than tutors if groups decide to copy each other's content. This could be an effective way to encourage diverse content from each group, as there will be some drive for originality (Bishop, 2007). Having a record of the information page and presentation also provides evidence of participation. A reflective summary of their experience of group work, which can be a simple step by step account of how they divided up the work and selected sources, will be useful evidence for assessment.

Lave & Wenger (2006)'s theory of communities of practice provides a framework for setting up and managing communities of learners. They identify three elements that need to be nurtured for such communities to flourish. Participants must first value their collective competence and ability to learn from each other within the learning **domain**. The group of learners in this study has prior experience of using wikis for class projects and are familiar with how to edit pages. Engaging in joint activities and discussions is essential to build a **community**, to build relationships that allow learners to learn from each other. By checking each others' pages, learners will have access to information gleaned by other groups and will have to read it if they wish to make sure their own content is different. The third element of **practice** can apply to finding course related literature as an enquiry based task, with a 'problem' (finding definitions) to be resolved. To make the group work a viable exercise, there is a need to set clear goals that are meaningful to the learner (Beetham, 2007a). Groups can be encouraged to hold meetings to agree on a division of work i.e. each group member can investigate a different course theme. Agreeing clear goals and a realistic time to complete them is an important part of the task process. Learners can also be encouraged to use multimedia in their presentations, for example by adding their voices to images in Moviemaker or Powerpoint. Including a range of media is important, to appeal to different i.e. auditory/visual learning styles (Kolb, 1984). As these tools may be new to learners, there is a need for explicit visual instructions, to provide support at every step. For example, models can be provided of good and bad media presentations to raise awareness of the need for limited text, so as not to overwhelm the viewer. The allocation of clear roles and targets can help teams to agree on a limit to the amount of slides and the content added by each participant. The inclusion of a group presentation is an opportunity for participants to develop key competencies for e-learning such as collaboration and the use of multimedia. Sharing a tangible end product for inspection by the rest of the learning community can motivate learners to perform (Wenger, 2008). Assessment for the task, rather than being based on the presentation itself, can be carried out through reflection on the task process. This can involve observations of even participation, time management, team working, background knowledge and self awareness, to encourage learners to explore and reflect on the dynamics of working with others.

Although the focus of the activity is to find definitions for the course themes, the ability to reflect on group dynamics of this project has the potential to be the main focus of the learning. Good practice that can be identified from group work tie in with the findings of Graham et al (2001)'s investigation of online interaction. They include, for example: 'adequate channels of communication'. This highlights the importance of a 'back channel' to the institutional forum which, just like the cafeteria

or student common area, can provide a valuable forum for informal collaboration. To this end, a chat function is added to the wiki to assist co-operation between students (see fig. 10).
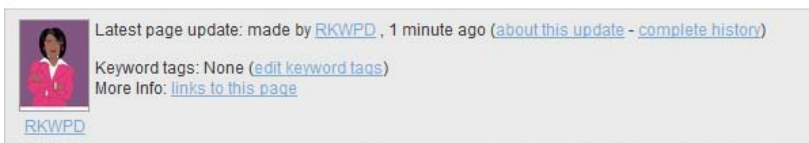
Figure 10 – example of a chat room added to course wiki for informal discussion

'Respecting diverse talents and ways of working' can also be assisted by the range of media available for the team to communicate. Updating a course wiki, for example, provides an opportunity for more evidence building through the medium of text. 'Sharing and discussion of projects amongst peers' can also be achieved in the activity design by groups sharing the end result with the rest of the class. Graham et al (2001) suggest re-drafting the product based on peer feedback. A further project with different team members would be a valuable exercise in reflective practice to consider in future. The ideal learning scenario is to encourage participation not through motivation to get a good grade, nor for the end product, but as part of a voluntary desire to work well as part of a team.

4.2.3 Social bookmarking

An introduction to social bookmarking in Delicious is designed to assist the collaborative learning process. Learners are asked to open an account and share bookmarks within their groups by adding their user names to a page in the wiki and connecting with their peers (see figs. 11/12). They are

invited to perform a search using the key word 'privacy' and start bookmarking links with the tag 'ITECN100' for their group. The aim of this activity is to facilitate sharing amongst groups and to provide an introduction to the power of 'folksonomy' (Van der Wal, 2004). The Delicious web service is a valuable tool to facilitate life-long learning, as learners have the option of continuing to use it after graduation, assuming that the service is still available. The difficulty of this activity will be persuading learners of its worth, as they are likely to be unfamiliar with the concept of tagging content. The key, again, to making social bookmarking appeal to HCT learners is to make it relevant to learner needs. To appeal to their initial motivation, common topics of interest, such as entertainment, could be tagged and shared.

Figure 11 – introduction and instructions for social bookmarking activity

Figure 12: An example of a bookmarking network in Delicious

4.2.4 Microblogging - Twitter

An extension to information sharing through social bookmarking is to introduce students to the microblog 'Twitter'. This service may be familiar to learners as it has become part of the internet landscape and is usually installed as standard on new mobile devices. Asking students to connect with each other through this network and to seek out further people to follow e.g. e-learning enthusiasts is another way to encourage socially constructive information sharing. Students will be invited to watch a tutorial on using Twitter in the VLE, then asked to sign up to the site, 'follow' their classmates and start sharing resources (See fig. 13)

Using Twitter

1. Watch the video about Twitter and answer the questions

2. Sign up for a Twitter account

3. Post a link to your favourite website and add the tag #ITECN100

4. Follow the people in your group and start to share resources on the themes of the course

Figure 13 – introduction to the microblog Twitter

The objective at this stage is to foster community building by creating another online connection between learners (Wenger, 2007, Kerwalla, 2008). Interest in using the tool in its own right may be limited, as learners already have access to their own preferred networks (Weller, 2006). However, it is anticipated that interest will increase as they begin to comment on each others' links (Kerwalla, 2008).

4.2.5 Student blogging

To start to bring together the research and encourage deeper analysis of information found in shared hyperlinks, students will be asked to keep a blog, summarising the best links they have shared. Again, tutorials on opening a blog will be provided through the VLE, with a model blog post including a simple framework for summarizing the 'who, what and how' to go with each post, outlining a basic summary of each link. The use of blogs as a repository for student reflection is intended to increase student capability for independent study and promote organized cooperation amongst users. Von Hippel (2005), identifies this is a useful way to draw together widely distributed contributors into communities, where they can share different adaptations of technology developed by different users. This kind of community building is a valuable way for students to share information and provide mutual assistance. The inclusion of activities involving Twitter, Delicious

and blogs is intended to expand networking beyond the confines of the institutional VLE and inculcate a desire to become part of a wider community of online learners.

4.2.6 Course wiki

To bring students' research together in one communal repository, each group is assigned a page in the class wiki. This page is used to display a collection of the most useful links and best summaries of information from different blog posts. This collaborative construction of information will provide a useful resource for future reference. The advantage of the course wiki is that it gives learners permission to create limitless pages of research. The wiki also provides evidence of group work. A key element of the success of wikis is that "users do not have to adapt their practice to the dictates of a system but can allow their practice to define the structure" (Lamb, 2004). Although ownership of the wiki is handed over to the students, there is also a need to demonstrate what is required. Headings will be provided to help students fill in gaps related to different themes (see fig.14).
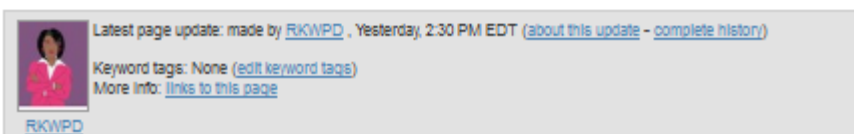

Figure 14: headings to assist groups in collecting materials

4.3 Conclusion

It is clear that social media are already an established part of the internet landscape (Jones& Healing, 2010). Harnessing these tools for learning, particularly for students with limited language ability is challenging, but careful scaffolding can help to put learners at the centre of the learning process. Building the functions of wikis, chat, student blogs and discussion boards into learning design helps to increase learner autonomy by making participants responsible for providing evidence of their own learning.

5. Limitations, conclusions and recommendations

5.1 Institutional barriers to participation

Although many teachers and learners may be aware of the existence of web 2 tools such as blogs, microblogs (Twitter) and social networking (Kennedy, 2007), they may have little experience of using these tools for learning. This could lead to difficulties in encouraging the use of social media in mainstream courses, particularly amongst staff who may be enculturated into the 'print paradigm' (Ong, 1982) and who may object to students detracting from the prescribed course materials. This kind of conflict could be an example of a digital immigrant/native difference, if members of staff perceive independent research as a threat to their control of the learning process. Another factor that may deter educators at the HCT from using social media is the risk of exposing learners to inappropriate content in social forums. This applies particularly to female HCT students, for whom online interaction may break social taboos (Azaiza, 2009). On the other hand, this could also be said to highlight the responsibility of educators to help students to gain information literacy skills that will help them to identify genuine and accurate information online. This is visible in the informal blog posts of teachers reflecting on their everyday practice:

"Shouldn't we use (social networks) in the classroom so that students learn how to use them well and learn about potential issues with social media so they know what to do and what to look out for?" Ahrenfelt (2009)

Laurillard (1994) points out the importance of the extent to which the teacher is seen as a support or hindrance in the learning process. This is an important aspect to consider in the evaluation of student exchanges. The controlled environment of the LMS, where the teacher moderates messages between participants, for example, may detract from the authenticity of communication, as learners alter their behaviour simply because they know they are under observation. Nevertheless, managing the online environment (Edmodo), gives the tutor the opportunity to act in the role of 'leader' (Bishop, 2007) and to monitor, help with and collect evidence of individual learner contributions. This role also allows the tutor to stimulate interaction by commenting on and refining learner contributions.

5.2 Assessment

Assessing the skill of information management can be a challenge. A reflective approach could offer a solution to the problems of plagiarism that can result from surface learning, purely to fulfil

assessment requirements without necessarily engaging with the course material. Crème (2005) suggests that selecting quotes from different course contributions and justifying them is one alternative to the rigidity of exam style assessment, but notes that this is a compromise as it does not encapsulate the whole learning experience. Students who have contributed a lot to their blogs may feel assessment is unfair if their efforts are not recognised. Nevertheless, Crème (2005) also identifies the need to relate course concepts to the outside world/life experience and suggests journal writing (whether included in the syllabus or not) is a way to encourage 'risk taking' and emotional engagement with the material. Adding references from other course members' blogs achieves acknowledgement of collaboration, whilst also encouraging posting and comments on posts which fuel writing. Crème (2005) points out that peer and self assessment can be enhanced if students are able to reflect on what they accept/reject from others' comments. Blogs make this possible, with emphasis on the learner to collate evidence. An important element in the assessment of student work is that expectations and grading criteria are shared. For this reason, a copy of the marking scheme for the final product should be included and students asked to view these criteria from the start. Crème (2005)

5.3 Overcoming possible obstacles to student participation

Although '*digital natives*' (Kennedy, 2007) may be familiar with certain online tools, translating this to an academic context may be difficult. This has implications for learning design. Using search engines to find information, for example, is a familiar skill that can have huge advantages, but students need to learn to discern which information is reliable, by being made aware of issues of authenticity and reliability, for example, quoting from Wikipedia or copying and pasting answers. For this reason, fact finding tasks need to be mediated in some way. Digital literacy skills such as data analysis and information summary can be facilitated through collaborative tasks such as finding and sharing statistics e.g. by country. This can be organised through the virtual learning platform. Mikuska (2011) suggests the need for learners to develop note-taking skills, to summarise information they have found online and keep a note of where it has come from, to avoid plagiarism, passive online scrolling and looking for key words without evaluating appropriate content.

Considering the need to develop digital literacy skills, it may not be surprising that many students do not regularly create content on the web such as wiki contributions, blogs or podcasts (Kennedy, 2007). This kind of writing or voice recording for a general audience may be daunting and time consuming and needs to be appropriately structured, with relevance to the learner experience. This is particularly the case for learners at the HCT, who may have low levels of English language ability.

In order to effectively integrate interactive information sharing, interoperability and user-centred design into teaching and learning, it is necessary to understand some of the obstacles affecting their implementation and how these may be overcome. Kreijns et al (2002) identify a possible pitfall in computer mediated communication (CMC) of overlooking the social-psychological elements of non-task (off topic) interactions. This is a risk in any online activity involving student interaction and is a reminder of the need to provide clear and explicit instructions for each stage of the task. Marking criteria should also be shared with students from the beginning of the activity so that they are clear as to the desired learning outcomes. The tendency to drift into 'non task contexts' Northrup (2001) is an important aspect to bear in mind when designing discussion forum activities, and justifies reflective assignments, which encourage participants to ensure they contribute a sufficient amount of task related posts. Nardi & O'Day (1999) describe human-computer interactions information ecologies, evolving unpredictably. This concept helps to sum up the diverse mixture of backgrounds that students bring with them to the learning scenario. Although activities using social media may be carefully designed to help students learn from each other, it is difficult to predict or keep track of which activities will achieve the most learner take up or 'buy-in'. For this reason, it is important to incorporate flexibility into the learning design to cater to different learner preferences. In this case, the end product will be a culmination of the research in a summary of each group's main findings.

Kreijns et al (Ibid), supported by Wegerif (1998) propose an 'ecological' approach to interaction, incorporating social affordances in learning design to help form a sense of community, where people feel they will be 'treated sympathetically by their fellows'. The aim of introducing social software to the learning design is to facilitate 'folksnomy', or the sharing of useful resources by others. This can be achieved by opening as many channels for peer communication as possible to facilitate informal dialogue and collaboration beyond the tutor group forum. This ideal learning scenario, although desirable, may not always be easy to achieve. Take up of activities within the group may be limited, for example due to time constraints, language difficulties or lack of experience using these technologies. There may also be psychological barriers to participation such as the perceived return value of the activity or lack of trust in social networks. Incorporating a chat function in the course homepage, where it is possible to see who is online, could help to build trust in such tools and facilitate the kind of informal dialogue that helps to establish 'affective relationships and a sense of community' Gunawardena (1995).

Peer to per collaboration

Joinson (2001) points out that:

'Even when virtual groups have only just met, they could often be more social than a comparable face-to-face situation'. Joinson (Ibid)

With the benefit of comparative anonymity, people may be more willing to contribute, as they have less to lose (Chester & Gwynne 1998). Walther (1996) observes that a lack of visual cues creates a more homogenous group, and that

'photographs, video, voice or geographic information' reduce the imagined homogeneity and lead to lower group identification'. Walther (Ibid)

Although learners at RKWC may have experience of social media such as Facebook, cultural restrictions prohibit them from adding their photos online. By operating anonymously under a pseudonym, they may be more willing to contribute to discussions. On the other hand, this leads to the difficulty for teachers of tracking learner contributions. Again, reflective assessment can be a solution, to put accountability for contributions in the hands of the learner.

5.4 Conclusion

Incorporating social media into learning design presents several problems. It should not be assumed that familiarity with social networking tools will automatically lend itself to formal learning. The challenge for educators is to find authentic contexts in which students will be intrinsically motivated to participate. Keeping track of learner participation in the networked world is almost impossible, but, if students are to take control of their learning and achieve the graduate outcome of digital literacy, they should be given choices beyond the institutional environment. Having the opportunity to participate in a wider online community is a step towards the HCTs ultimate aim of making them more employable.

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