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## **Networked Learning in Context: What does e-learning offer students working independently, and what do they bring to it?**

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### **Abstract**

The Open University UK has been offering degree-level courses to dispersed independent learners for more than 30 years. The university's 'multiple media' approach to teaching and learning now involves elements of networked learning with information and communication technologies (ICT) being included within a large proportion of courses. This covers, for example, e-mail support, computer conferencing, web-based resources and electronic submission of assignments. For any distance education university, the institutional advantages to be gained from networked learning (or e-learning) are mainly concerned with greater flexibility, faster development and response times, and better and more extensive opportunities for learner communication and participation. However, the technologies must serve – not determine – educational aims and outcomes. For e-learning to be effective, it is the educational context, purpose and design for use that are fundamentally important. But independent learners are not all seeking the same outcomes, and there is diversity in their existing skills for learning and approaches to studying. From the students' perspective, networked learning offers a variety of opportunities that both draw upon existing experiences and present new challenges.

### **Introduction**

Information and communication technologies (ICT) can enhance teaching and learning in two main ways: by improving access to information and resources, and by facilitating dialogue between people. Both are particularly pertinent in those distance education contexts in which learners studying independently are unlikely to have easy access to suitable resources and to fellow students.

However, both teachers and learners need to understand the educational purpose for communication and to develop appropriate skills for its effective use. Although ICT makes it possible for students to retrieve information and data from local, national and international sites, such resources are unlikely to achieve their goals unless they are grounded in the educational context and integrated with the pedagogy of the course or programme to which they relate. Networked communication using ICT can also enhance teaching and learning for those studying independently through the promotion of interaction between people. Some would argue that interpersonal communication, co-operation and collaboration are essential elements of higher education in the early 21<sup>st</sup>

century (see, for example, Beaty, *et al*, 2002). However, the facilitation of two-way communication needs to be linked to purposeful activities if worthwhile outcomes are to be achieved. Why discuss and/or collaborate with other students if there are no perceived rewards or clearly identified outcomes to be gained from the process?

This presentation will report and draw upon findings from research on students' use of networked technologies in connection with their studies to illuminate some of the relevant issues. It will examine and discuss how independent learners use ICT as part of their study activities (both formal and informal), drawing upon their existing skills and experiences. It will explore the effectiveness, or otherwise, of networked learning processes for meeting the expectations and needs of learners.

### **Potential Benefits of Networked Learning for Students of the UK Open University**

Within an Open University framework, independent learning is very often a solitary experience. A large proportion of a student's time is spent working individually with course materials and resources, most of which have been provided by the university. Materials delivered on disk for use in stand-alone computers introduced a level of *interaction with resources* that had previously been difficult to provide for learners, but it was finite in extent and the possibilities presented to students for engaging with the content was pre-determined by the designers (Kirkwood, 1998). However, the arrival of the Internet (particularly the World Wide Web) offered two prospective enhancements for distance education.

First, there is the potential for students to access on-line information and resources from a wide range of providers in many locations - local, national and international. The Internet can be used by independent learners to obtain up-to-date information from a multitude of providers and to get access to primary source materials (texts, data, archives, etc.) that previously could only be consulted by those individuals capable of visiting academic libraries and other specialist collections. For example, the Library at the UK Open University is in the process of transforming itself to make an increasing range of services available on-line to registered students, wherever they are located (Ramsden, 2003). These on-line services include the provision of access to searchable databases and catalogues, electronic journals and texts, quality-assessed web-sites, etc.

Second, but perhaps more importantly, the Internet has facilitated faster and more frequent two-way communication between people. For many years, the opportunities for UK Open University students to engage in dialogue with their tutors had been limited to exchanges by post, and by telephone. For some, occasional face-to-face sessions also provided opportunities for discussion with their tutor and other students. Networked communication offers the potential for reducing the isolation of independent learners, wherever they were located, by providing a means by which individuals can develop dialogue not only with their tutors, but also with fellow students.

### **Access to and Use of ICT**

The UK Open University was established to provide opportunities for higher education to adults studying part-time and ‘at a distance’. It has a mission to be ‘open’, so it admits students to undergraduate courses without requiring them to have any educational qualifications. All UK Open University courses include a range of media components and, as new technologies have developed, the range of media available to learners has diversified. The introduction of each new medium has involved achieving a balance between the potential contribution that it could make to teaching and learning and the issue of accessibility for independent learners (Kirkwood & Kirkup, 1991; Jones, *et al*, 1992). In 1988 a fundamental shift occurred when the university’s policy changed from that of *providing* computing facilities for learners on applicable courses (through terminals at a limited number of study centres throughout the UK), to *requiring* students to arrange their own access to suitable computing equipment, usually at home or at their place of work.

Access to equipment has been monitored for courses with *required* ‘personal computing’ and also for those many courses without such a requirement. By 2001, overall student access to computers had risen to more than 85%, with ICT elements in a large proportion of courses (Rae and Kirkwood, 2001). However, there have been persistent and sometimes considerable differences in access in terms of gender, age, geographical location and subject area. Gender differences have been a particular concern, not only in terms of computer access *per se*, but also in respect of qualitative factors such as the specification of equipment used and whether or not the student was the primary user of the home computer. We have also been aware of the many practical difficulties associated with using ICT for study in a domestic setting – very often equipment is located in a communal family space and competition among family members for the use of equipment and/or the telephone line is a routine occurrence (Kirkwood, 2000).

### **Networked Learning and Independent Learners**

For almost all of the UK Open University’s independent learners, studying does not have first call on their time and attention – their work or domestic responsibilities have a higher priority. As busy people, they have only a limited amount of time available for studying. Very often, the time available is not sufficient for all of the course materials to be studied to the depth anticipated by the course designers. While most students tend to appreciate the variety and flexibility that multiple media offers, they have to be selective to survive in the system (Kirkwood, 2003a). The assessment requirements of any course play a significant part in guiding learners’ choices. While a small proportion of learners seem to study *only* what is essential for assessment purposes (i.e. they are *assignment focussed*), a much larger proportion confess that assignments do influence their study behaviour (they are *assignment conscious*).

Although many UK Open University courses now include opportunities for networked learning via the Internet, only a small proportion are *Web-based* in

the sense that they have been designed from initiation for on-line presentation. In most courses, components such as web sites, 'gateways' to on-line resources and communications facilities have been provided as *additions* to the existing components. So most UK Open University students spend more time working with printed texts than with any other form of materials or resources. Texts not only comprise the *core* of the teaching and learning materials, often they are also used as 'Study Guides' which direct students in their use of other media components and provide structure for their learning activities. Consequently, it is hardly surprising to find that students report using course texts to a very great extent, and that those texts almost always receive very high ratings when students are asked about how helpful they find the various course components for their studies (a standard question in the university's annual *Courses Survey* – see Programme on Learner Use of Media, 2002). Learners use other components to a greater or lesser extent, depending upon their perceptions of the benefits to be gained in relation to the time and effort involved.

### ***How Students are using ICT in their studies***

Regular surveys have revealed that very many UK Open University students have been using ICT in connection with their studies, even if the courses they were taking did not have a *requirement* for computer use. A number of different surveys have provided information about the extent of learners' previous computing experience and the ICT skills that they possess. A large proportion of entry-level students already have experience of word processing, of sending and receiving e-mail and of searching the Web for information. In a study of new students taking Level 1 (i.e. entry-level) courses in Arts, Social Sciences and Languages in 2001 (Kirkwood, 2002a), there were low proportions of respondents who had no access to a computer (6%), or who were only able to use a public access computer (5%). [For many years these discipline areas have had below-average levels of computer access and offered very few courses *requiring* ICT use.] Those students with some form of computer access were asked a series of questions about their ICT skills and the ways in which they had used a computer. A majority (52%) of respondents with computer access reported making '*much use*' of it 'for educational or study purposes', but there were also substantial numbers who made '*much use*' of a computer for 'purposes related to employment' (44%), for 'family correspondence, hobbies, etc.' (31%), for 'leisure/entertainment' (31%) and for 'domestic and household purposes' (23%).

Few respondents in that study considered themselves to be '*beginners with little or no experience*' (5%), or to have only '*some fairly basic experience*' (15%). Many had expertise in specific types of computer use (e.g. spreadsheets, graphics, etc.), but only a small proportion had fairly high levels of competence across a wide range of applications. High proportions of respondents indicated that they had '*much experience*' of the following specified uses: 'word processing' (73%), 'communicating using e-mail' (61%), and 'getting information from the Internet/WWW' (54%). A substantial proportion (70%) had '*little or no experience*' of communicating

with other people using conferencing, chat or newsgroup facilities. A substantial 41% of respondents indicated that they accessed the Internet on a *daily* basis and a further 32% did so *weekly*: Only 20% reported that they used the Internet '*rarely*' or '*never*'.

Most of the respondents expressed an interest in learning more about ICT and in developing their own skills. The topics selected by more than half of the respondents were:

- 'Creating and manipulating images, graphics, etc.' (61%),
- 'Finding and using information effectively' (60%),
- 'Using electronic resources (libraries, etc.)' (60%),
- 'Understanding more about ICT generally (features, jargon, etc.)' (59%),
- 'Building a Web site' (53%), and
- 'Using a computer for studying' (52%).

Clearly, many of these students wanted to find out more about ICT research skills, i.e. 'Finding and using information effectively', 'Using electronic resources (libraries, etc.)' and 'Using a computer for studying'. These findings suggest that many respondents had more than just basic *ICT skills*, but that their *information literacy skills* were much less well developed.

### Locating and using web resources

Very many students search for resources on the Web in connection with their studies, whether or not there are specific recommendations and links provided in their courses. However, we have found that many times more use a familiar search engine such as Google, Alta Vista or Lycos than use the university's maintained 'gateways' for specific courses or disciplines (Rae and Kirkwood, 2003). This raises several related issues that need to be considered further:

- ❖ How much use do students make (or not) of web-based resources recommended in the courses they study?
- ❖ What are the incentives and barriers to using such resources?
- ❖ How do learners evaluate the relevance and appropriateness of the resources they find on the Web?

Although many UK Open University courses now include links to on-line resources (journal articles, databases, web sites of other institutions or organisations relevant to the discipline, etc.), the extent to which they are used by students varies considerably. Analysis of students' responses to the annual Courses Survey undertaken at the end of 2001 revealed that for many of the undergraduate courses with such links, at least two-thirds of respondents had 'not used' those facilities (Rae and Kirkwood, 2003). For postgraduate courses, the corresponding proportions were frequently between 40% and 50%. It was found that for many of the undergraduate courses (and some of those at postgraduate level) the links to on-line resources were for *optional* 'further reading'. Wherever such links to on-line resources were included as

an integral part of the course activities (e.g. for project work or for critical analysis of primary sources) they were much more highly used by students.

The ‘optional’ nature of many links to on-line resources is clearly one important disincentive to greater use by learners. Another factor is the ease with which such links can be followed. For some journals and other educational resources, access is controlled by means of usernames and passwords that can make actual use more difficult than simply following a hypertext link. There is some evidence that students are more likely to follow direct links than those involving the use of a password for access.

The advantage that students can derive from using maintained ‘gateways’ or recommended links to web-based resources is that the sites to which they are directed have been evaluated and selected for their quality and suitability in terms of various factors, including being up-to-date, being at an appropriate educational level, and having sufficient authority and accuracy. They might also give access to sites with restricted access or to information in databases within ‘the Deep Web’ (Bergman, 2001), i.e. public information that is normally invisible to general search engines, but is several hundred times more extensive than that in the ‘surface web’. When students search the Web for information using a familiar search engine, they are likely to be presented with a long and undifferentiated list of ‘hits’ – web pages that contain the word or string of words entered by the person undertaking the search. To make effective use of this apparent ‘surfeit of riches’ necessitates a considerable input from learners, who must browse and evaluate the many identified links in order to distinguish potentially appropriate sites from the larger number of inappropriate ones. In addition, very many relevant and valuable resources might be missed because they do not contain the chosen search words or are not accessed by the search engine. Developing and refining *information literacy* skills should be an important element of courses making much use of ICT, because few students are well prepared for such activities (Kirkwood, 2002a).

Increasingly, students need to retrieve information and data from national and international sites in connection with their employment as well as for their studies. However, when course or external Web sites resemble ‘books on screen’, there is a tendency for students to print long documents – increasing the costs incurred and often diminishing print quality. Presenting course resources on the Web must involve more than simply delivering existing materials in a different medium: it requires a *transformation* process for both the form and the pedagogical approach (Petre, *et al*, 1998).

### Electronic communication

As mentioned above, e-mail and computer conferencing have increased the potential for independent learners to engage in asynchronous two-way communication, but most UK Open University students have little or no experience of one-to-many or many-to-many computer communication (conferencing or Chat) before they commence their studies. Electronic

communication could be particularly valuable for students who live in remote locations and those who are ‘housebound’ due to health, disability or domestic responsibilities – for such students, electronic communication represents their only opportunity for dialogue with other students. In two studies of students’ experiences of on-line tuition (Kirkwood, 2002b; Kirkwood, 2003b) at least half of those who had volunteered for computer-mediated tuition (as an alternative to occasional face-to-face group sessions) did so because they were unable to participate in tuition by the normal means offered to UK Open University students (the remainder sought the greater convenience and flexibility and/or wanted to build upon their experience of on-line tuition from previous courses).

Computer conferencing can enable course participants to discuss and explore information, ideas, problems, strategies, etc. and on-line working can be used for task-focussed collaboration (see, for example, Kear and Heap, 1999). However, it is unlikely that just making two-way communication available will be sufficient to achieve worthwhile teaching and learning outcomes, especially when it is just added on to an existing course – dialogue with other students must be an integral part of the design and relate to the pedagogy of the course. For example, if a course is primarily concerned with *imparting knowledge* and adopts a largely transmissive teaching approach, there is little for students to gain from discussion other than the clarification of uncertain or misunderstood ideas or concepts. If, in contrast, a course adopts a more active, constructivist approach – being concerned with promoting critical thinking through the exploration of multiple perspectives, with problem-solving and inquiry, or with developing inter-personal skills – the achievement of the course aims would be severely impaired without opportunities for dialogue to take place. Problems of participation are usually a product of learners being unaware of the purposes to be served by interaction with their fellow students. Learners need to know not only *what* they are supposed to do, but also *why* they are expected to do it – what it will contribute to their learning.

But what do we know of the student perspective – what do *they* think are the purposes and benefits of electronic communication? Analysis of Humanities and Social Science students’ written answers to free-response questions about their experiences of on-line tuition reveals that there are considerable differences in underlying views about the educational roles that communication can play (Kirkwood, 2002b; Kirkwood, 2003b). Some students’ comments suggest that they have an individualistic and receptive approach to learning – they seem to be mainly concerned with making sure that they have fully grasped what is being taught. For such students, communication with other people is a deviation or distraction, unless it serves to clarify and reinforce their comprehension. Some sample comments about the benefits of on-line communication:

*“Continuous contact with my tutor even when out of the UK.”*

*“By just being there to consult easily. By expanding on difficult areas of the course and relating them to other areas. By giving good advice [on*

*assignments], course difficulties and exam hints.”*  
*“Getting to ask questions to my tutor without attending tutorials.”*

Statements from some other students taking the same courses indicate that they have a more active, co-operative approach to learning – they are keen to test and develop their understanding through dialogue with other learners. For example:

*“It always helps understanding when you can discuss a topic with like-minded people.”*  
*“This course is proving to be a ‘shared’ experience with my fellow students. I do not feel as if I work in isolation and there is a definite feel of support for each other.”*  
*“By communicating with other students, I learned about other people’s points of view on the subject.”*

Clearly, students’ willingness to devote time to participating in activities that involve communicating with other people, and the manner in which they play a part in the process, will reflect their conception of the role of such communication in furthering their learning.

The following list of benefits of on-line tuition to learners is derived from respondents’ own free-response comments in recent studies (Kirkwood, 2002b; Kirkwood, 2003b):

- Greater flexibility in terms of when participation takes place,
- Quicker response to queries and problems; from other students as well as from course tutor,
- Learning through discussion; the exchange of ideas and perspectives,
- Asynchronous communication allows time for reflection and consideration, rather than requiring an immediate response to be given,
- Easier for reticent people to make a contribution; not discouraged by others,
- It provides a written record that can be referred back to subsequently.

However, students need to be convinced that learning benefits can be derived from their purposeful participation in networked activities, in terms of achieving significant learning outcomes. Course assessment requirements might need to be reviewed, particularly if they concentrate solely on the achievement of individuals and ignore or discourage any co-operative or collaborative learning. New skills for working on-line are necessary for both teachers and learners – they are not ones that most people already possess. Salmon (2000) has presented a range of ideas, approaches and resources for effective on-line activities based upon considerable practical experience.

### ***In Conclusion***

In the UK it is now the situation that a very large proportion of independent learners not only has access to ICT, but also has more than just a basic level of ICT experience and skills. Nonetheless, we have found that only a small

proportion has (a) any experience of on-line discussion, and (b) well developed information literacy skills. It is increasingly the case that successful study of university-level distance education courses requires independent learners to make use of on-line facilities, but it is often *erroneously* assumed that students already possess the necessary skills and experience. [Campus-based UK universities are also attempting to make greater use of networked learning, but there is little evidence that their students have the appropriate skills (Rowley, *et al*, 2002).] It should be the responsibility of course providers to ensure that the skills necessary for networked learning (i.e. group-working and information literacy) are explicitly developed, both by students and by their tutors.

Although ICT can *enable* new forms of teaching and learning to take place, they cannot *ensure* that effective and appropriate learning outcomes are achieved. It is not technologies, but educational purposes and pedagogy that must provide the lead, with students understanding not only *how* to work on-line, but *why* it should be of benefit for them to do so.

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