

The Impact of ICT on the Development of Information Literacy by Students in Further Education

A report on the initial findings of an ongoing PhD study.

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Abstract

Information now plays a vital part in the lives of individuals, organizations and institutions and information literacy is the key to the optimum use of information. At a recent JISC Conference, the Secretary of State for Education and Skills emphasized the importance of ICT and information literacy as vital components in the development of life skills, workplace skills and citizenship.

Little research, as yet, has been carried out in further education (F.E.) as to the development of information literacy by students.

The purpose of the current PhD research is to study the value of ICT provision and use in the development of information literacy by students in further education. A case study approach has been adopted with the focus on "A" level students. Fieldwork has been completed in Colleges of F.E. and sixth forms in schools. Interviews with staff, focus groups with students and observations of individual students have been supplemented by completion of a questionnaire by teaching staff.

The research findings suggest that there is little coherent strategy within F.E. regarding the development of information literacy by students. Many students experience difficulties in accessing, evaluating and using information effectively. Initial analysis of the data to date suggests that a variety of factors are involved. However, fieldwork is not yet complete and much further analysis of the data will be required.

Keywords: information literacy, further education, impact of ICT.

1. Introduction

Information now plays a vital part in the lives of individuals, organizations and institutions and information literacy is the key to the optimum use of information. This paper looks at definitions of “information literacy” and considers the importance of its development for the individual. It gives an account of an ongoing PhD study into the impact of ICT on the development of information literacy by FE students. Certain emerging themes and issues are outlined and discussed. The intention of this paper is to present the findings to date while stressing that the research is ongoing and conclusions may be subject to change the research continues.

1.1 An information society.

Recent decades have seen rapid and radical changes in the Western social and educational environment with the rise of the “information society” predicted by the social scientists of the 1970’s and 80’s (Bell 1973; Porot, 1977; Masuda, 1982). It is generally accepted that the industrialized world is being transformed into a knowledge-based world. Information now plays a vital part in the lives of people and organizations. The amount and complexity of information available continues to increase at an enormous rate. Much of this rapid growth may be attributed to the development of information and communication technology, which permeates every aspect of government, education, commerce and industry.

Over the last ten years the UK government has seen ICT as crucial to its concern to improve educational standards, widen participation in further and higher education and facilitate lifelong learning (DfEE, 1997, DfEE, 1999). Extensive funding of technological development in higher education was intended to fulfil this agenda. Government has now turned its attention to technological development in further education, although the pattern of development has not been identical.

Within higher education there has been extensive research into the impact of this ICT provision (IMPEL2, 1998; HyLiFe, 2000; JUBILEE, 2001). These studies made it clear that some students experienced problems in finding the resources they needed for their studies and in using them effectively. So what was missing? Perhaps what was missing was “information literacy”

1.2 What is information literacy?

There has been growing world-wide concern with information literacy especially in Australia and the United States (Doyle, 1992; Sitonen, 1996; Walker, 1999; Bundy, 1998). The term “information literacy” is attributed to Zurkowski (1973) although there is no universally accepted definition of the term.

A number of reviews of the concept of information literacy have been carried out (Kulthau, 1993; McClure, 1994; Snaveley and Cooper, 1997; Bawden 2001) and various definitions of information literacy have been formulated.

In its definition the American Library Association (1989 :1) emphasized that

“Information literate people are those who have learned how to learn—they know how knowledge is organized, how to find information and how to use information in a way that others can learn from them—they are people prepared for lifelong learning”.

According to Bruce and Candy (1995 :1)

“Information literacy is the ability to locate, evaluate, manage and use information from a range of sources for problem-solving, decision-making and research”

1.3 Is information literacy important ?

The volume of information and the complexity of information available is increasing all the time and in the industrialized world the use of ICT is endemic. So if people do not have the knowledge and skills to deal effectively with both printed and electronic information sources then they are going to have problems in coping with daily life as a citizen, a worker and as a member of society. The Australian Library and Information Association (2001) considers that information literacy is a prerequisite for

- Participative citizenship
- Social inclusion
- Personal, vocational, corporate and organizational empowerment
- The creation of new knowledge
- Learning for life.

1.4 Development of information literacy

Research into the development of information literacy is extensive and ongoing. It suggests that students need more than a quick Induction session in the Library/ Learning Resource Centre and some information skills training sessions to become information literate. However, this is sometimes all that students receive.

Nearly all institutions start students off with Induction. This usually happens in the first weeks of the academic year and students are overwhelmed with information and simply forget most of it. They lose the printed information they are given and forget their passwords and IDs.

Information skills training in both HE and FE is frequently optional. Optional, “drop-in” sessions attract some students but are often ignored by those who need them most. New electronic resources are being developed all the time and existing resources change frequently. So students need to learn about new resources and update their knowledge and skills in using established resources at regular intervals.

Information skills training sessions, however, may not be enough. Students need to have

the opportunity to practice what they have learned and to consolidate the skills they have acquired.

Bruce and Candy (1995:2) suggest that

“It is the cumulative experience from a range of subjects or individual learning experiences that develops information literacy”.

1.5 From Higher Education to Further Education..

Within higher education (HE) there has been extensive research into information literacy (Bruce, 1997; Big Blue Project 2001). There has also been research into the impact of ICT (Jackson et al, 2000; Day and East 1997). However here has been little research in further education (FE) on either the impact of ICT funding and development, or on information literacy in FE. Involvement in the research in HE and recent involvement in the JUBILEE project in FE led to an interest in this “Cinderella” sector.

The Government has already invested large amounts of money in ICT in both higher and further education and the use of ICT is seen as a vital part of educational development. The recently proposed “e-learning strategy”(DfES,2003) and the Skills Strategy White Paper (DfES2003) emphasize the commitment to the use of ICT in education.

The use of ICT in teaching and learning is being actively encouraged within FE. Students will need to be information literate and able to make effective use of electronic resources in order to take full advantage of their course of study and fulfil their potential.

Little research has been undertaken in FE on students’ information literacy. Research is vital in order to inform future policy in FE institutions and to guide staff in developing effective strategies for students’ information literacy

2. Research Focus

2.1 Aims of the research.

This research is concerned with the following question.

“Do Further Education institutions, by their increasing use of ICT in teaching and learning, enhance the development of “A” level students’ information literacy?”

The aims of the research are

- To explore the effects of information and communication technology (ICT) upon the development of “A” level students’ information literacy.
- To identify those factors having a significant effect upon the development of “A”

level students information literacy.

- To develop a model of “A” level students’ information behaviour.

2.2 Methodology.

The research is concerned with the opinions of staff and “A” level students and the effects of these upon their actions. A case study approach is being used as this is appropriate in exploring activities in the real life context of an educational environment using multiple sources of evidence (Yin 1994:13). In this way it is possible to explore the views, experiences and actions of staff and students and gain a deeper understanding of what is happening in a complex situation.

As there are over 600 FE Colleges in the UK it would not have been possible to include them all. The replication strategy proposed by Yin (1994: 47) for case study research has therefore been adopted. Three colleges have been chosen which vary in size, because the researcher predicts similar results (replications). Two schools have also been included so that the experiences of students in sixth forms can be compared with that of students in FE colleges (contrasting results likely).

While Merriam (1988) sees case study as being essentially research as essentially qualitative and requiring only qualitative methods, others (Grover and Fowler 1993, Yin 2003) support the use of both qualitative and quantitative methods in a research study if these will enhance the study. The methods of enquiry used in this study include a literature review, semi-structured interviews with staff, focus groups with students, observations of individual students involved in searching for information for an assignment and documentary analysis. A questionnaire for academic staff has also been used in order to add breadth to the data collected.

A literature review was undertaken at the commencement of the study to gain an understanding of previous research. Documentary analysis was used to gather data on institutional planning for the development of students’ information literacy and to corroborate and augment evidence from other sources. Interviews with senior managers and academic staff were carried out in order to gather a range of opinions on students’ information literacy, the use of ICT in teaching, the facilities and resources provided and the policies and practices within the institutions. Focus groups provided data on students’ attitudes and perceptions regarding information literacy and to gather data on the use of ICT in particular subjects. A questionnaire for staff was used to gather data from lecturers teaching a range of subjects, on the staff themselves, the subjects they teach, their use of ICT in teaching and their involvement (if any) in the development of students’ information literacy.

2.3 Research to date.

The progress of the research to date includes the completion of a literature review, the selection of case study sites, the designing of the necessary documentation and fieldwork

in all of the five institutions. The fieldwork involved

- Interviews conducted with 48 members of staff including senior managers, academic staff and LIS staff.
- Focus groups conducted involving 134 students.
- Observations of 9 individual students completed
- Questionnaires distributed to 150 academic staff and 128 returned.

The interviews, focus groups and observations were tape recorded and transcribed and the transcripts entered on a QSR NUDIST database.

The questionnaires were coded and recorded using SPSS software.

2.4 Impact of ICT on students.

ICT gives students access to a much wider variety of resources and this is both a blessing and a curse. They appreciate the choice but many students feel overwhelmed by this profusion of resources.

More than half of the students in the focus groups have a computer at home as well as access in College and can search for information regardless of time and place. This means that students, some of whom are working part-time, have some flexibility as to when they do their College work. However, computers in FE colleges are often located in IT rooms, that are used for teaching or in Libraries/Learning Resource Centres that are closed in the evenings and at weekends. So access is sometimes an issue.

Students use ICT mainly for word processing and feel that it is quick and easy to edit and amend their work and improve the presentation of assignments using ICT. However, some tutors feel that students' ability to analyse and synthesise information is deteriorating as they rely upon "cutting and pasting" information into essays without absorbing the subject content.

The "A" level students use the Internet extensively. Again this is a mixed blessing. The Web is a quick and easy way to access masses of information on any topic. However, most students tend to use search engines (especially GOOGLE) and ignore subject gateways and databases. The searching skills of many students are limited and they gain many irrelevant responses rather than a few relevant ones. A number of students admitted that they often feel frustrated by their own limitations when searching. Staff consider that some students lack evaluative and critical skills and accept whatever they find on the Internet as being accurate and reliable. *"If it's on the Web it must be true"*.

The use of ICT may facilitate collaborative learning and communication. A computer at home and the provision of ICT facilities in College means that students can learn from family members, friends and other students as well as teaching staff and LIS staff. This informal learning is valued highly by students as some of them are inhibited in asking for help from staff.

The provision of ICT facilities and electronic resources in Libraries and LRC means that students can ask for help from LIS staff in using these. Unfortunately, staff and students agreed that few students do ask for help. In some colleges LIS staff do some information skills teaching of small groups/classes at the request of teaching staff but these are the exception rather than the norm.

The availability of ICT facilities in some classrooms should that teaching staff can incorporate information literacy development activities within their subject teaching. However, less than half of the lecturers in the study said that they did so.

2.5 So far, so good?

If students in HE have problems with the development of information literacy, then students in FE have even more. There is little or no formal training in information skills in FE and although some academic staff say that they provide the activities to help students to develop information literacy, these are on an individual and ad hoc basis.

Five statements made by staff and students involved in the research demonstrate the problems hindering the development of information literacy in FE students.

- “*Its implicit not explicit*”
- “*Its everyone’s responsibility—so no ones*”
- “*There is no time to do this*”
- “*We don’t have the staff to do this*”
- “*We don’t want to do anything extra*”

One of the problems in FE appears to be the lack of awareness among senior management of its importance. All of the senior managers interviewed stated that information literacy had never been discussed at management level and there were no specific references to the information literacy of students in policy or strategy documents. Because *it is implicit rather than explicit*—staff are not sure what action should be taken and by whom to ensure that students became information literate.

Most staff agree that the development of students information literacy is *everyone’s responsibility –BUT* because no-one is specifically responsible—very few people actually do much about it.

More than half of the academic staff interviewed said that they felt very much under pressure. Their contacts have changed, they have more administrative work to do and the curriculum seems to be constantly changing. They are expected to grapple with technological developments and develop their own ICT skills while fulfilling all their teaching commitments. They are being pushed to use ICT in teaching and learning whether they want to or not. They reported that stress levels are escalating and that many staff are eager to “get out” of teaching. They feel that developing students’ information literacy is yet another task to be undertaken within an already crowded curriculum. “*We*

just don't have the time" was the response of many staff.

The number of LIS staff in FE Colleges is often very small in proportion to the number of FE students. The LIS staff in the study said that it practically impossible for them to do any information skills teaching as there are just not enough people available to do this. So although LIS staff were concerned that some students lacked information skills and would have liked to help students develop information literacy, their response was "*We don't have the staff to do this*".

Students in FE tend to be pragmatic. Many of them will do only what they think they need to complete their course. They have to see the relevance of information skills training or they will simply dismiss it. They are not interested in "extras" even if this will ensure that they do well in their studies or get better marks. So they have to be convinced of the value of information literacy and how this can benefit them. They want to know "What's in it for me". More than two-thirds of the students said that they wouldn't attend information skills training sessions unless they were an integral part of their course.

"We don't want to do anything extra" was the response of many students.

2.6 Significant factors in the development of students' information literacy.

Certain factors seem to be significant in the development of information literacy in FE students.

Awareness of the importance of information literacy is required at all levels but especially at senior management level as they are responsible for strategy and the provision of resources, both technological and human.

An explicit strategy for information literacy development is required so that all staff are aware of what should be done and who should do it.

Academic acceptance of their role in promoting students' information literacy is important. Students follow the recommendations of their tutors regarding information sources. Many academics do recommend resources, both printed and electronic to their students. However, staff can only recommend resources if they know about them and some of them don't.

Academic knowledge and skills are a significant factor. Research shows that students rely to a great extent upon their lecturers. If academic staff do not use electronic resources in their teaching, then students tend to ignore them. If lecturers consider that students' information literacy is not their responsibility then they will not try to ensure that students learn and consolidate the information skills they need. If students perceive that academic staff place little value on information skills development then they will not value it either.

Collaboration between LIS staff and academic staff is important in ensuring that students receive the support and guidance they need. While LIS staff provide resources and support for individuals and groups who visit the Library/LRC, many students make little use of this support.

Some students are not aware of what the Library/LRC can provide. Some rely on a limited range of resources with which they are familiar. Some lack the ICT skills to use electronic resources effectively. Some are reluctant to acknowledge their limitations. Some think they know it all and don't need any help or guidance. So LIS/LRC staff have to find ways of reaching these students and often the only way they can do so is through the academic staff.

The status of LIS staff in some FE colleges is a matter of concern. The number of LIS staff in FE colleges is far less than in HE institutions. Sadly, their knowledge and skills are sometimes overlooked by the academic staff and their expertise is not valued as highly as it should be. This means that although they may try to be proactive and communicate and co-operate with academic staff their efforts are not always greeted with enthusiasm.

Integration of information skills training into the curriculum or tutorial programme may raise its value in the eyes of students. Students tend to be pragmatic. Many of them will do only what they think they need to complete their course. They have to see the relevance of information skills training or they will simply dismiss it. They are not interested in "extras". If the information skills training is just another optional extra then many of them will ignore it.

The availability of ICT resources will affect their use by staff in teaching. Many academic staff in FE said that they could not use ICT in teaching as their classrooms were not equipped.

Staff training made a difference to whether ICT was used in teaching and learning. It is sometimes assumed that all staff and students in FE have good ICT skills. However, older staff, and some younger ones, may have limited ICT skills. Staff wanted ICT training that was relevant, timely and ongoing. They wanted staff training sessions at times that were convenient for them.

3. Conclusions

The research findings to date suggest that there is little coherent strategy within FE regarding the development of information literacy in students. Many students experience difficulties in locating, accessing, evaluating and using information effectively. A number of issues have emerged and several significant factors seem to be involved. Academic staff have a major role to play and collaboration between academic staff and LIS staff is essential.

However, this research is ongoing and there is much more to do. Although the fieldwork is complete, the data analysis is not. The researcher would like to express her appreciation of all those who have participated in the research and made it both enjoyable and illuminating.

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