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"Why should I?" Engaging learners in digital literacy skills development

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"Why Should I?" Engaging Learners in Digital Literacy Skills Development

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Abstract: In the current digital environment, it is becoming increasingly vital for learners to develop digital literacy skills. The UK's Quality Assurance Agency for Higher Education (HE) requires graduates to be able to demonstrate digital literacy. Employers consider these skills to be essential in the workplace. Recent changes to the funding of HE by the UK Government mean that the personal cost to the learner is rising dramatically and, as a result, learners themselves increasingly expect UK university courses to demonstrate relevance to the workplace. But despite all this, some learners may not fully engage in digital literacy skills development, instead concentrating on the subject-specific content of their modules. We explore learner experiences of digital literacy skills development in an attempt to understand why learners fail to perceive the relevance of the skills content of their module, or at least give it low priority. The UK's Open University (OU) is a distance-learning institution. Its Faculty of Health & Social Care (FH&SC) has evolved different approaches to digital literacy skills development using technology-enhanced learning, based on skills resources that are either 'generic' (usable within any FH&SC module) or context-dependent and module-specific. Our Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project is exploring learner perceptions of skills activities and our overall skills development strategy, with data collected from online questionnaires (N=298) and interviews (N=18) involving learners from three modules. This paper presents findings from an analysis of the quantitative questionnaire data, comparing types of skills resources, and approaches to digital skills development in terms of learner perceptions and degree of engagement. We also look at learner perceptions and engagement in relation to the demographic factors gender, age and previous education and explore whether demographic factors influence individual learner preferences for the type of learning design, such as use of generic resources versus contextualisation of skills activities that emphasises the relevance of skills to the subject and/or working practice. Our aims are to identify good practice in learning design and what demographic factors, if any, need to be considered in learning design to support individual learners appropriately, and so optimise engagement.

Keywords: digital literacy, skills, information literacy, ICT, learning design, demographic factors

1. Introduction

Digital literacy is defined by the European Commission as 'confident and critical use of ICT [information and communication technology] for work, leisure, learning and communication'(JISC, 2012). The ability to demonstrate digital literacy skills is a key requirement for graduates, demanded both by the UK Quality Assurance Agency for Higher Education and by employers. Recent changes to the funding of HE by the UK Government mean that the personal cost to the learner is rising dramatically and, as a result, learners themselves increasingly expect UK university courses to demonstrate relevance to the workplace. But despite all this, some learners may not fully engage in digital literacy skills development, instead concentrating on the subject-specific content of their modules.

Digital literacy skills development is particularly important in work-based learning programmes leading to professional qualifications. As learning designers we need to understand how to engage students in learning materials so that they will meet the requirements of those qualifications. This issue plays a key role within the social work (SW) degree in the Faculty of Health & Social Care (FH&SC) at the Open University (OU). However, digital literacy skills development is also widely required in other degrees, not just for professional qualifications and 'graduateness' but also for more general use in study, at home and at work.

We are interested in the pedagogical and resourcing implications of using resources that are more generic, in particular how effective generic contexts may be in enabling wider use of shared activities, as opposed to subject- and context-specific activities, which may be more challenging to share and maintain.

As part of the Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project, we are therefore evaluating how students perceive their digital skills development and the relevance of digital

literacy to themselves and their employers, looking at what motivates their engagement and identifying features of learning design that facilitate engagement and skills development.

2. Background and methods

The OU is a distance-learning institution which has always employed a blended learning model and has been in the vanguard of using technology-enhanced materials to deliver high-quality learning. A certain level of digital literacy is necessary simply to study with the OU.

For the purposes of this study we divide digital literacy into:

- Information literacy (IL), defined as the ability to find and make use of information, including searching for, evaluating and referencing information.

- Information and communication technology (ICT) skills, defined as the skills drawn on to organise, present or share information using a computer, by means of, for example, word processing, spreadsheets, email and presentation software.

IL skills fall within the general qualification requirements of all OU degrees. The demonstration of ICT skills is not specifically required by all OU degrees at present.

OU students taking its SW degree are all mature students, in employment. They are usually sponsored by their employer to study the degree, though some are self-funded. During some SW modules, described as *practice-learning* modules, sponsored students undertake learning opportunities in the workplace, organised by their sponsors, during which their studies are intended to relate directly to the work practices being developed. The regulatory body overseeing SW qualifications in the UK demands the inclusion of certain ICT skills.

OU students taking its health and social care (HSC) degree are generally mature students, usually employed, though mostly self-funded. Core modules in this degree are practice-*related* rather than practice-*learning*. That is, they are theory-based modules with no formal work-based learning, but the relationship between theory and practice is emphasised. ICT skills are a specific qualification requirement for the HSC degree.

Data were collected from students taking three modules in FH&SC:

- SW1 – a Level 1 (equivalent to first year undergraduate) social work module
- SW2 – a Level 2 (equivalent to second year undergraduate) social work module
- HSC2 – a Level 2 health and social care module.

SW1 and SW2 are both practice-learning modules. HSC2 is a core module in the HSC degree, but is also an optional module in a number of different OU degrees, covering a range of interests. ICT skills are not necessarily a qualification requirement for these other degrees.

In each of the three modules, students are introduced to a task requiring digital literacy skills in the main module learning guide. They are then directed to skills guidance, provided in one of three ways:

- Generic – a skills activity, provided via the HSC Resource Bank (HSCRB), a web-based, faculty repository of resources that can be used by any FH&SC module.

- Contextualised – module- and context-specific skills guidance provided as a PDF document on the module website.

- Hybrid – contextualised skills guidance that also links at certain points to a generic skills activity.

The guidance in SW1 and SW2 is contextualised within social work. In HSC2 students are provided with a direct link to the relevant HSCRB generic skills activity.

A mixed methods approach was used for data collection. All students on the three modules were given the opportunity to complete a questionnaire, presented in the form of a reflective quiz towards the end of each module. The quiz allowed students to reflect on their skills development and to evaluate particular skills activities. Some questions required fixed-choice responses and provided quantitative data while others allowed free-text entry and thus provided qualitative data. Separate questions were asked about ICT and IL skills.

This paper focuses on questions that inform the following aspects of student perceptions:

- Preferences in relation to the *nature* of skills guidance – generic or contextualised.
- Preferences in relation to *location* of skills guidance – provided within the module or separately from it.
- Preferences in relation to *timing* of skills guidance – provided at point of need or at a time when the learner decides.
- Perceptions of the value of skills to themselves.
- Perceptions of the value of skills to their employer.

Comparisons are made in relation to three demographic factors: gender, age, and level of previous qualifications (PEQs) obtained before joining the OU. Lower PEQs are those students who have obtained qualifications up to and including UK A-Levels (or equivalent) while higher PEQs are those students who have obtained qualifications from Further or Higher Education. Data from all modules are combined for this demographic analysis.

For each of the three demographic factors, students are divided into the following groups for comparison (not all items of demographic information are available for every student and N values reflect this):

- Gender – men (N=44) and women (N=249)
- Age – 35 or under (N=91), 36 to 45 (N=106), and 46 or over (N=96)
- PEQs – lower PEQs (N=105) and higher PEQs (N=109)

All differences between modules, between demographic groups, and between IL and ICT skills, are tested for significance using χ^2 tests.

3. Results

3.1 Questionnaire submission rates

A total of 298 students submitted the questionnaire, representing 23.0% of all students invited to complete it.

3.2 Generic versus contextualised skills activities

Student responses to four statements about the nature of skills activities are shown in Figure 1 (in this and other figures, the statements have been abbreviated) and Table 1.
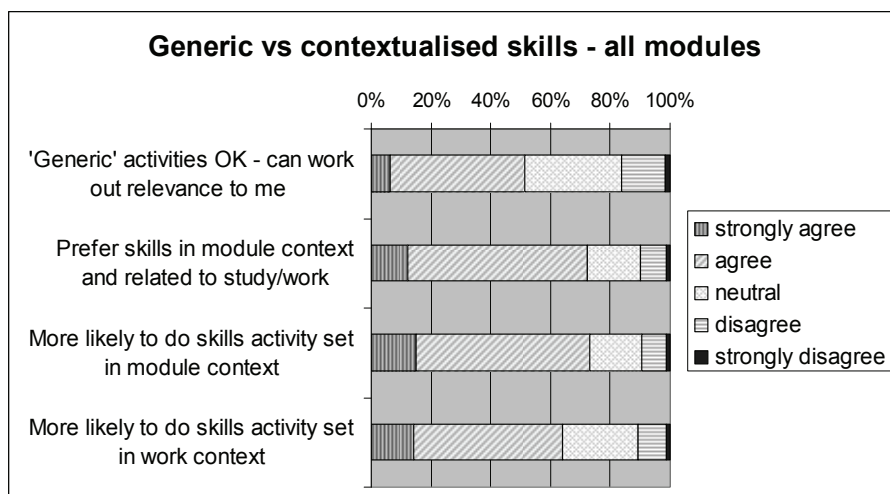

Figure 1: Student views on generic and contextualised skills activities

Only 16% of students are unhappy about doing generic skills activities. However responses to statements 2-4 show that they much prefer skills set in a module context and related to study or to work and that they are more likely to complete a skills activity if it is contextualised, especially if it is set in a module context.

Table 1: Differences in responses to statements about skills activities that are generic or contextualised

	Statement		Differences between modules			Differences between demographic groups		
No.	Text		SW1 vs SW2	SW1 vs HSC2	SW2 vs HSC2	Gender	Age	PEQs
1	I am happy to complete a 'generic' skills activity (one not specifically related to the module or to my work) because I can work out what its relevance is to me.		NS	NS	NS	χ^2=11.07 df=4, p<0.05	NS	NS
2	I prefer skills activities set in the context of study or work, and built into the content of the module, rather than presented as something separate.		NS	NS	NS	NS	NS	NS
3	I am more likely to do a skills activity if it is set in a context that is relevant to the module.		NS	NS	NS	NS	NS	NS
4	I am more likely to do a skills activity if it is set in a context that is relevant at work.		NS	NS	NS	NS	NS	NS

There are no significant differences between modules, between age groups, or between students with higher and lower PEQs. Men are more likely than women to be happy about completing a generic skills activity (Figure 2).
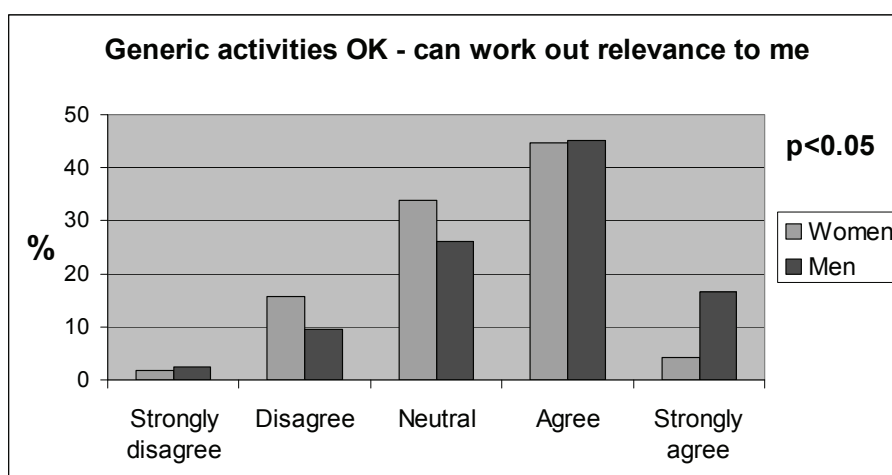

Figure 2: Responses of men and women to statement 1

3.3 Location and timing of skills activities

Student responses to three statements about the location and timing of skills activities are shown in Figure 3 and Table 2.

A large majority of students (over 70%) are more likely to do a skills activity if it is provided in the module at the point of need. Only a minority of students (less than 30%) prefer to decide for themselves when to do a skills activity or are more likely to do a skills activity if it is provided separately from the module.

There are no significant differences between modules, between age groups, or between students with higher and lower PEQs. Men are significantly more likely than women to prefer to decide for themselves when to do a skills activity, though overall men are about equally split between preferring to decide for themselves and preferring not to. Men are also more likely than women to do a skills activity if it is provided separately from the module (Figures 4 and 5).
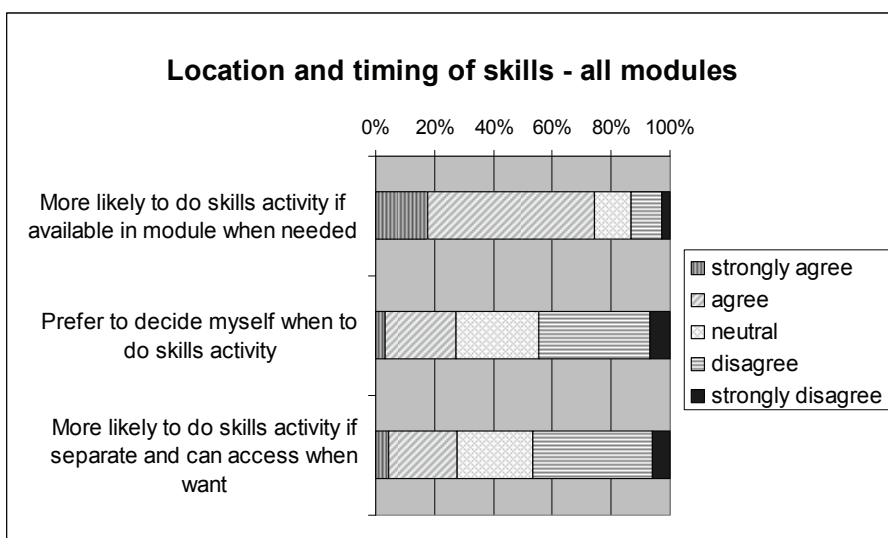
Figure 3: Student views on skills activities integrated into or separate from the module

Table 2: Differences in responses to statements about skills activities that are integrated into or separate from the module

| Statement		Differences between modules			Differences between demographic groups		
No.	Text	SW1 vs SW2	SW1 vs HSC2	SW2 vs HSC2	Gender	Age	PEQs
5	I am more likely to do a skills activity if it is made available at the exact point in the module that I need the relevant skill.	NS	NS	NS	NS	NS	NS
6	I prefer to decide for myself at which point to do skills activities.	NS	NS	NS	χ^2=10.97 df=4, p<0.05	NS	NS
7	I am more likely to do skills activities if they are made available as part of a separate set of resources that I can access when I want to.	NS	NS	NS	χ^2=13.69 df=4, p<0.01	NS	NS
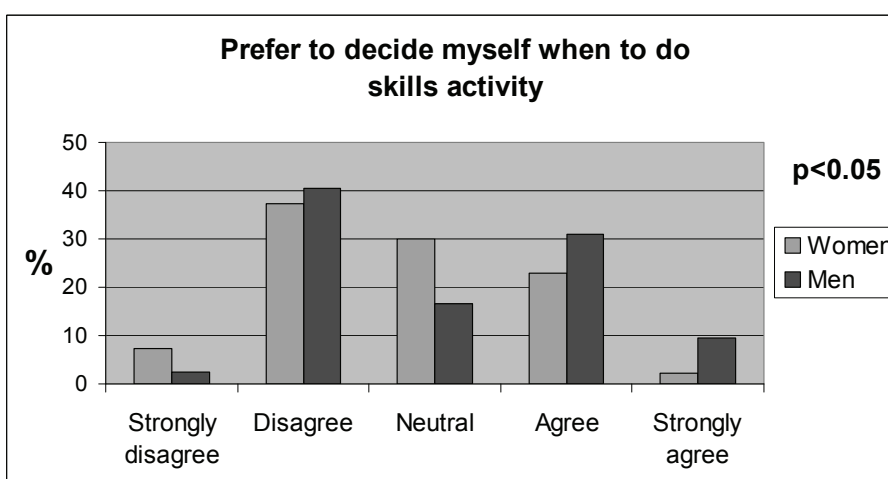
Figure 4: Responses of men and women to statement 6

3.4 Value of skills to the student

Student responses to six statements about the extent to which students believe they will be able to use the IL and ICT skills they have developed in the future are shown in Figure 6 and Table 3.

A large majority of students think they will be able to use their digital literacy skills in their employment (over 90%), future study (almost 100%) and personal life (at least 80%).
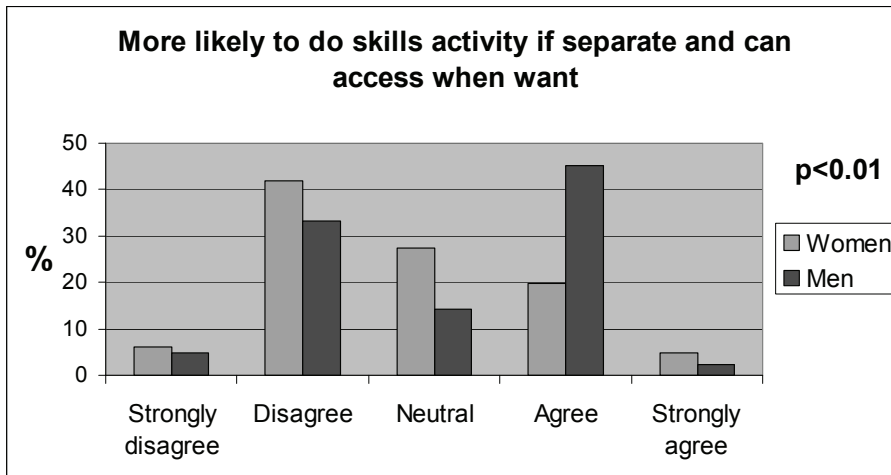

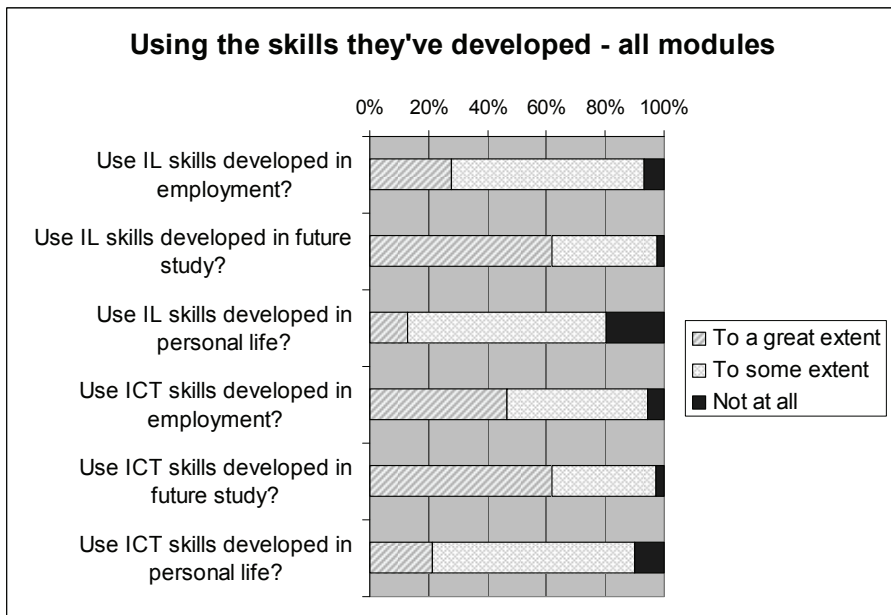**Figure 5:** Responses of men and women to statement 7

Figure 6: Student perceptions of the extent to which they will be able to use their skills in the future

There are significant differences between at least one pair of modules for all statements. In terms of employment, SW1 students believe they will use IL skills more than do SW2 or HSC2 students and ICT skills more than HSC2 students. More SW2 students believe they will use both IL and ICT skills in employment compared with HSC2 students although the proportion of SW2 students who believe they will use IL skills to a great extent is smaller than for HSC2 students. In terms of future study, SW1 students believe they will use ICT skills more than do SW2 or HSC2 students. More SW1 students believe they will use IL skills in study compared with SW2 students although the proportion of SW1 students who believe they will use IL skills to a great extent is smaller than for SW2 students. In terms of their personal life, SW1 students believe they will use IL skills more than do SW2 students. More SW2 students believe they will use ICT skills in their personal life compared with HSC2 students although the proportion of SW2 students who believe they will use ICT skills to a great extent is smaller than for HSC2 students.

Table 3: Differences in responses to statements on using skills in employment, study or personal life

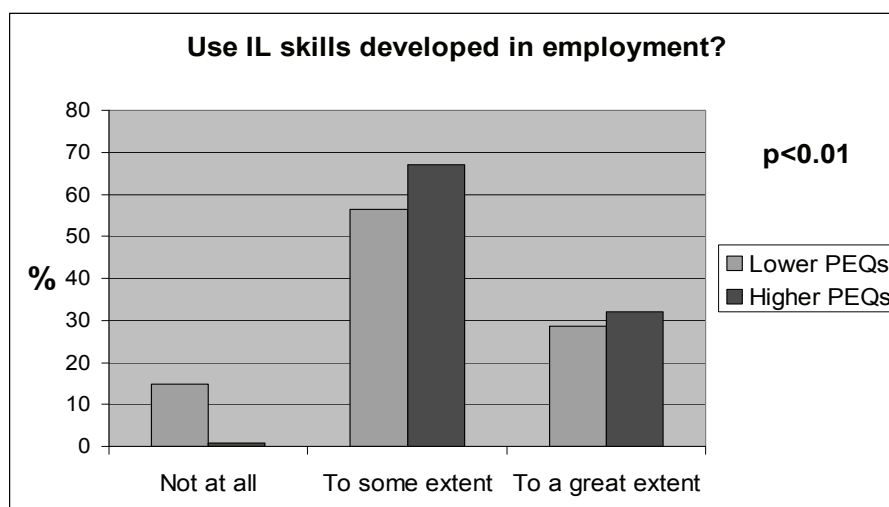|	Statement	Differences between modules			Differences between demographic groups		
No.	Text	SW1 vs SW2	SW1 vs HSC2	SW2 vs HSC2	Gender	Age	PEQs
8	How much do you feel you will be able to use the IL (finding and using information) skills that you've developed by studying this module in employment?	χ^2=9.06 df=2 p<0.05	χ^2=11.33 df=2 p<0.01	χ^2=6.74 df=2 p<0.05	NS	NS	χ^2=14.34 df=2 p<0.001
9	How much do you feel you will be able to use the IL (finding and using information) skills that you've developed by studying this module in future study?	χ^2=9.63 df=2 p<0.01	NS	NS	NS	NS	NS
10	How much do you feel you will be able to use the IL (finding and using information) skills that you've developed by studying this module in activities outside employment and study?	χ^2=10.02 df=2 p<0.01	NS	NS	NS	NS	NS
11	How much do you feel you will be able to use the ICT (computing) skills that you've developed by studying this module in employment?	NS	χ^2=16.86 df=2 p<0.001	χ^2=8.92 df=2 p<0.05	NS	NS	χ^2=10.95 df=2 p<0.01
12	How much do you feel you will be able to use the ICT (computing) skills that you've developed by studying this module in future study?	χ^2=6.22 df=2 p<0.05	χ^2=7.18 df=2 p<0.05	NS	NS	NS	NS
13	How much do you feel you will be able to use the ICT (computing) skills that you've developed by studying this module in activities outside employment and study?	NS	NS	χ^2=8.66 df=2 p<0.05	NS	NS	NS

Figure 7: Responses of students with higher and lower PEQs to statement 8

There are no significant differences between men and women or between age groups. Students with higher PEQs are more likely than those with lower PEQs to believe they will be able to use both IL skills and ICT skills in employment (Figures 7 and 8).

3.5 Value of skills to employers

Student responses to two statements about the extent to which students believe their skills are seen by employers as important are shown in Figure 9 and Table 4.

Only a very small minority of students (less than 10%) believe that employers think that digital literacy skills are not important. Students are significantly more likely to believe that ICT skills are important to employers than they are IL skills (χ^2=16.93, df=3, p<0.001).
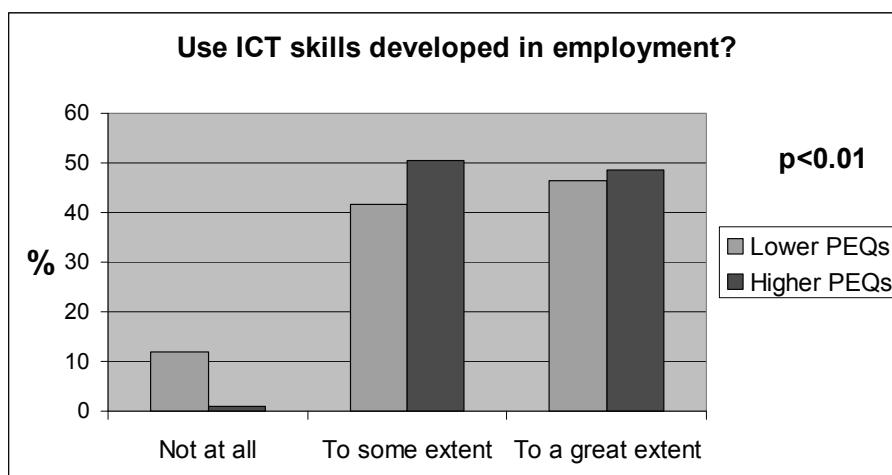
Figure 8: Responses of students with higher and lower PEQs to statement 11
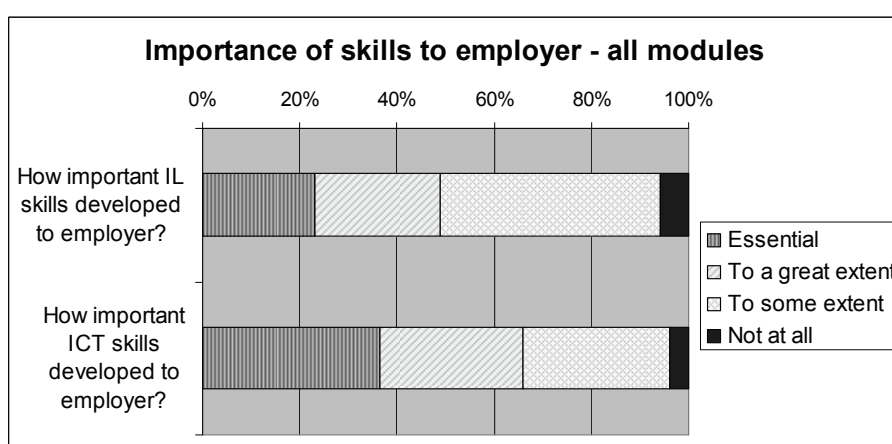

Figure 9: Student perceptions of the importance employers attach to skills

There are significant differences between at least one pair of modules for each statement.

SW1 students are more likely than either SW2 or HSC2 students to believe their employer thinks IL skills are important. SW2 students are more likely than HSC2 students to believe their employer thinks ICT skills are important.

There are no significant differences between demographic groups.

Table 4: Differences in responses to statements about the importance employers attach to skills

Statement		Differences between modules			Differences between demographic groups		
No.	Text	SW1 vs SW2	SW1 vs HSC2	SW2 vs HSC2	Gender	Age	PEQs
14	How important to your current or future employer do you think the IL skills are that you've developed by studying this module?	χ^2=11.93 df=3 p<0.01	χ^2=7.86 df=3 p<0.05	NS	NS	NS	NS
15	How important to your current or future employer do you think the ICT skills are that you've developed by studying this module?	NS	NS	χ^2=7.85 df=3 p<0.05	NS	NS	NS

4. Discussion

The majority of learners studying the three modules believe that digital skills are important and transferable beyond the module to all areas of life. Digital literacy skills, particularly ICT skills, are thought to be of great importance to employers.

Most learners prefer to learn skills in the context of the subject they are studying and to be able to access skills guidance at the point of need. The same preferences have been identified in a separate analysis of the qualitative data from this study by Nix, Hall & Baker (2012). There is evidence that learning is more effective when skills development is integrated into the curriculum (e.g. Beetham, McGill and Littlejohn, 2009; Ford, Foxlee and Green, 2009; Kingsley and Kingsley, 2009).

Not surprisingly, given that the two social work modules are practice-learning modules with an emphasis on the necessity of using skills in the workplace, most of the differences between modules are related to employment. Social work students, especially those at Level 1, are more likely than health and social care students to believe they will be able use their skills in employment, and that their employer thinks digital literacy is important. Levine et al (2008) found that dentistry students value information literacy skills when the relevance to their professional practice is made clear. Edmunds, Thorpe and Conole (2012) found that ICT is perceived by students most positively in the work context.

The differences between SW1 and SW2 students might be related to the fact that most of the digital literacy skills in the social work degree are delivered at Level 1. SW1 students may regard skills as more important than SW2 students simply because there is more emphasis on skills in their module. However, the difference between social work and health and social care students also carries over to the areas of study and personal life to some extent, with social work students being more likely to think that they will be able to use their skills both in future study and in their personal life. Possibly, the value that social work students attach to skills in the workplace enables them better to 'transfer' skills use to other areas. Edmunds, Thorpe and Conole (2012) found that the work context appears to be an important driver for technology use in other areas of life.

There are no differences between age groups, at least for the aspects of student views considered here. The youngest age group (35 or under) can be categorised as 'digital natives' who have grown up with technology, according to Prensky's (2001) original definition as those born after about 1980. The older age groups, however, are categorised as 'digital immigrants' because their first experiences of digital technology came later in life. Supporters of the concept of the digital native/digital immigrant divide would expect the youngest age group to hold different attitudes to the two older groups. Our analysis provides no evidence for this. However, although the concept of the digital native may still be valid, there is increasing evidence that it is not necessarily linked to age (e.g. Helsper and Eynon, 2010). In any case, as Kumar (2010) amongst others has pointed out, digital natives may appear to be comfortable with technology, for example with the everyday use of mobile phones, Google, and social networking, but may not understand its use in an academic or professional setting.

There are three differences between men and women. Men are more likely than women to be happy to do a generic activity, to show a preference for deciding for themselves when to do a skills activity, and to do a skills activity if it is provided separately from the module. However, men do not show an overall preference for deciding for themselves when to do an activity. These differences imply that, although they may not actually prefer it, men are more *willing* than women to work on their skills independently of their study of the module, both in time and 'space'. We will be exploring this further in analysis of our qualitative data.

Only one difference is found between students with different levels of previous educational qualifications. Higher PEQs are more likely than lower PEQs to believe they will be able to use their digital literacy skills in their employment. We can think of three possible explanations for this. First it could be because higher PEQs are more likely to have a technically demanding job in which they can use their skills. Second, they may be less likely to find work tasks intimidating or be more confident about using their skills in the workplace. Third, they may be better at 'transferring' skills learned in a module context to other contexts, so are more able to relate their skills to the workplace. However, there is no difference in the extent to which higher PEQs think they will use their skills in the other contexts of future study and personal life, which implies that the third explanation is not correct. Further analysis of our quantitative and qualitative data may provide evidence for or against one or both of the first two explanations. Further alternative explanations may also emerge.

To conclude, if we as learning designers wish to maximise engagement with skills learning then, on the basis of our analysis so far, we should deliver digital skills development activities in the context of the subject that the student is studying and provide skills guidance at the point that they need it. This

would suit the majority of students and would not disadvantage any of the demographic groups we have considered here. We should also make it clear to students why digital literacy skills are important and useful, not only to the subject they are learning and/or to their professional practice, but to all areas of their life.

Acknowledgements

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