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Are learner perceptions of digital literacy skills teaching affected by demographic factors?

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2. Are learner perceptions of digital literacy skills teaching affected by demographic factors?

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Abstract

It is becoming increasingly important for learners to develop digital literacy skills (defined by the European Commission as the confident and critical use of ICT for work, leisure, learning and communication). The Quality Assurance Agency for Higher Education requires graduates to demonstrate digital literacy and employers demand these vital employability skills. And, with the rising cost of university education, learners themselves increasingly expect courses to demonstrate relevance to the workplace. Despite this, learners may not fully engage in skills development, giving priority instead to subject-specific learning. We therefore 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 Open University's Faculty of Health & Social Care (FH&SC) has evolved different approaches to digital 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 and interviews involving learners from three modules. We present findings from analysis of some of the quantitative questionnaire data in relation to three demographic factors: age, gender and previous educational level. We consider to what extent learners' engagement in and/or perceptions of skills development correlate with demographic factors. We also explore whether demographic factors are related to learner preferences for the type of learning design, for example, use of generic resources versus contextualisation of skills activities that emphasises relevance to the subject and/or the workplace. Our aim is to identify what demographic factors, if any, need to be considered in learning design to support individual learners appropriately, and thereby optimise engagement.

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 an essential element of 'graduateness', demanded both by the UK Quality Assurance Agency for Higher Education and by employers. Recent changes in Government funding for UK Higher Education mean that the personal cost to the learner is rising dramatically and, as a result, learners themselves increasingly expect university courses to demonstrate relevance to the workplace. But despite all this, some learners may not fully engage in digital literacy skills development, instead giving priority to the subject-specific content of their modules.

As part of the Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project, we are therefore evaluating student perceptions of their digital skills development and the relevance of digital literacy to themselves and their employers, investigating what motivates their engagement and identifying features of learning design that facilitate engagement and skills development.

2. Background and Methods

The Open University (OU) is a distance-learning institution. It has always taken a blended learning approach and has been in the vanguard of using technology-enhanced materials to deliver high-quality learning. A certain level of digital literacy is needed now 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. At present, not all OU degrees require students to specifically demonstrate ICT skills.

Data were collected from students taking three modules in the Faculty of Health & Social Care (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.

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

- Generic – a skills activity, provided via the *HSC Resource Bank* (HSCRB), an online, 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.

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 from the module learning guide.

A mixed methods approach was used for data collection. All students were offered the opportunity to complete a reflective activity towards the end of each of the three modules. The activity was in the form of a questionnaire and enabled 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 so provided qualitative data. Separate questions were asked about ICT and IL skills.

In this paper we focus on the following aspects of student perceptions about digital literacy skills:

- Preferences in relation to generic versus contextualised skills.

- Preferences in relation to the location of skills guidance, i.e. whether it is provided within the module or separately from it.

- Preferences in relation to the timing of skills guidance, i.e. whether it is provided at the 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.

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

For each demographic factor, students are divided into groups for comparison as follows (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 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 completed the questionnaire, representing 23.0% of all the students studying the three modules.

3.2 Generic versus contextualised skills activities

Student responses to the following statements about generic and contextualised skills activities are shown in Figure 1 (the statements have been abbreviated within this and other figures).

Statement 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.

Statement 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.

Statement 3:   I am more likely to do a skills activity if it is set in a context that is relevant to the module.

Statement 4:   I am more likely to do a skills activity if it is set in a context that is relevant at work.
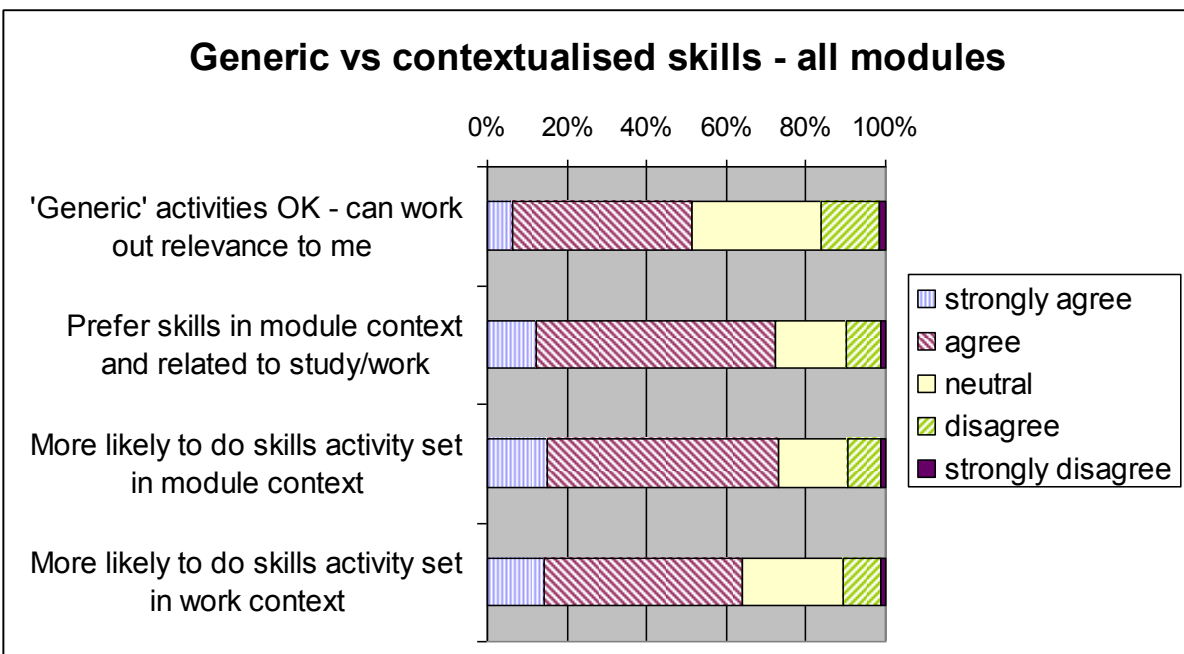

Figure 1: Student perceptions of generic skills activities compared with contextualised ones.

Less than 20% of students are unhappy about working on generic skills activities. However responses to statements 2-4 show that they have a strong preference for skills set in the context of the module 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.

There are no significant differences between any demographic groups.

3.3 Location and timing of skills activities

Student responses to the following statements about skills activities that are integrated into or separate from the module are shown in Figure 2.

Statement 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.

Statement 6: I prefer to decide for myself at which point to do skills activities.

Statement 7: 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.
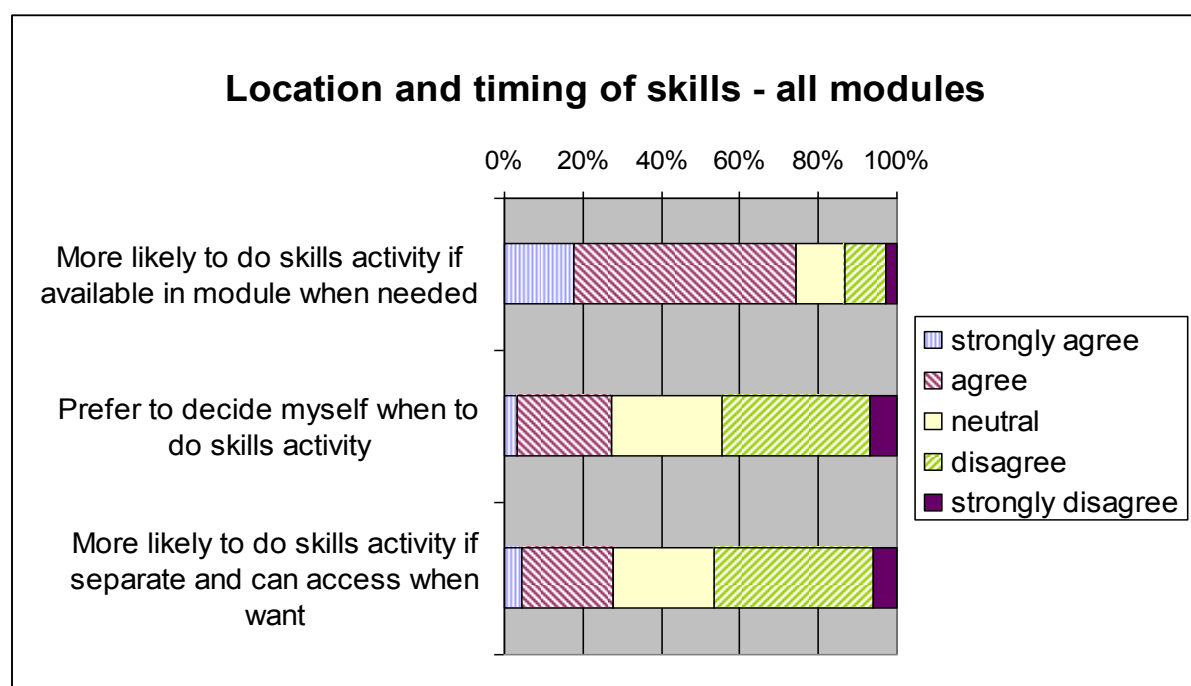

Figure 2: Student perceptions of skills activities integrated into or separate from the module.

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 demographic groups except for statement 7. Men are significantly more likely than women (χ^2=13.69, df=4, p<0.01) to do a skills activity if it is provided separately from the module (Figure 3).
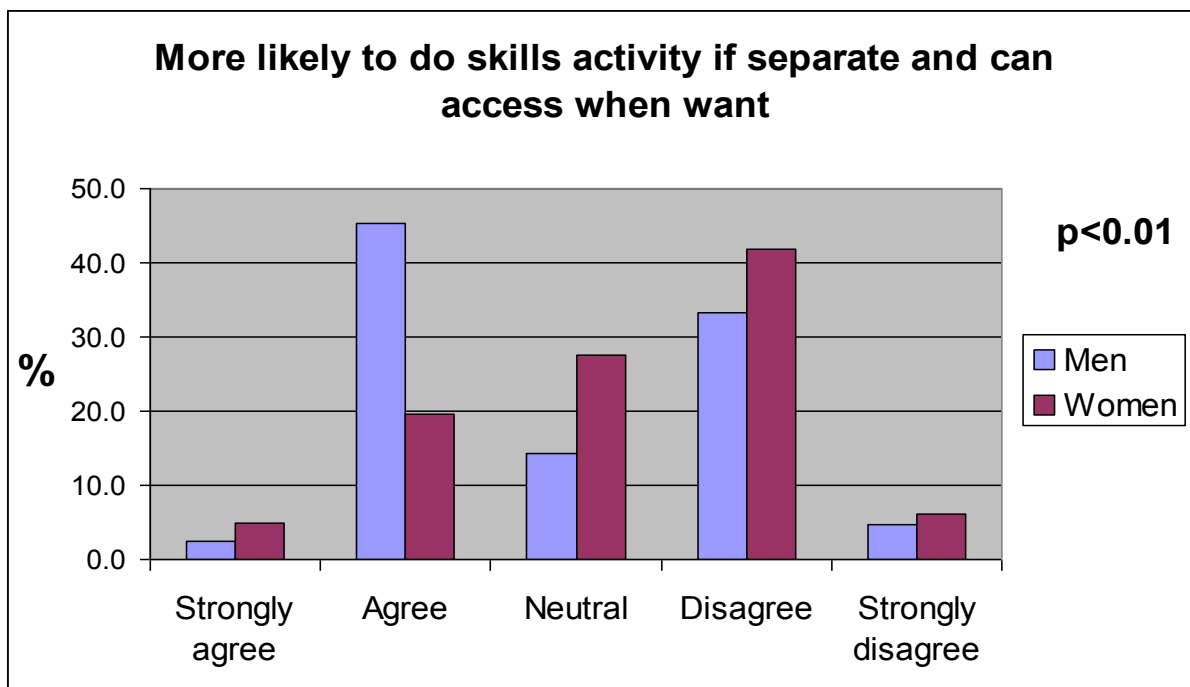
Figure 3: Responses of men and women to statement 7.

3.4 Value of skills to the student

Student responses to the following 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 4.

Statement 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?

Statement 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?

Statement 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?

Statement 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?

Statement 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?

Statement 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?
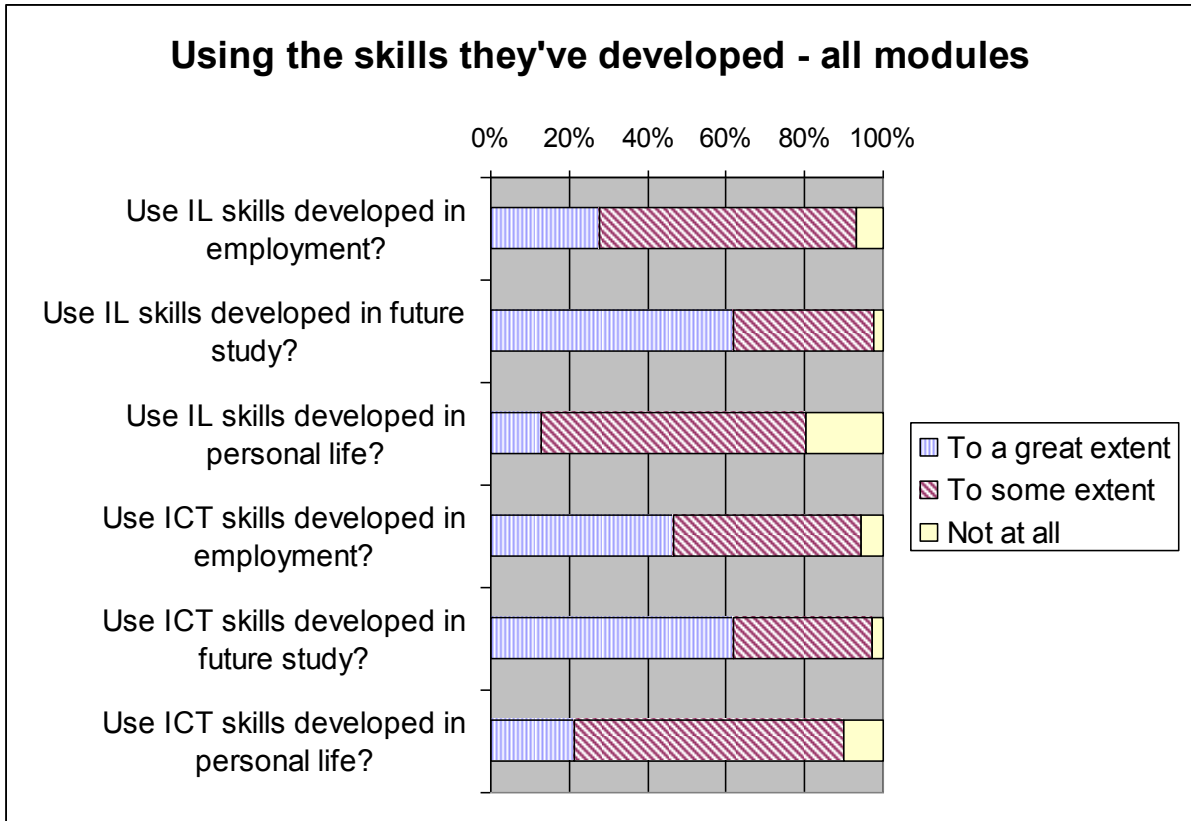
Figure 4: Student perceptions of the extent to which they will be able to use their skills in the future.

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%).

There are no significant differences between demographic groups except for statements 8 and 11. Students with higher PEQs are more likely than those with lower PEQs to believe they will be able to use both IL skills (χ^2=14.34, df=2, p<0.001) and ICT skills (χ^2=10.95, df=2, p<0.01) in employment (Figures 5 and 6).

Figure 5: Responses of students with higher and lower PEQs to statement 8.
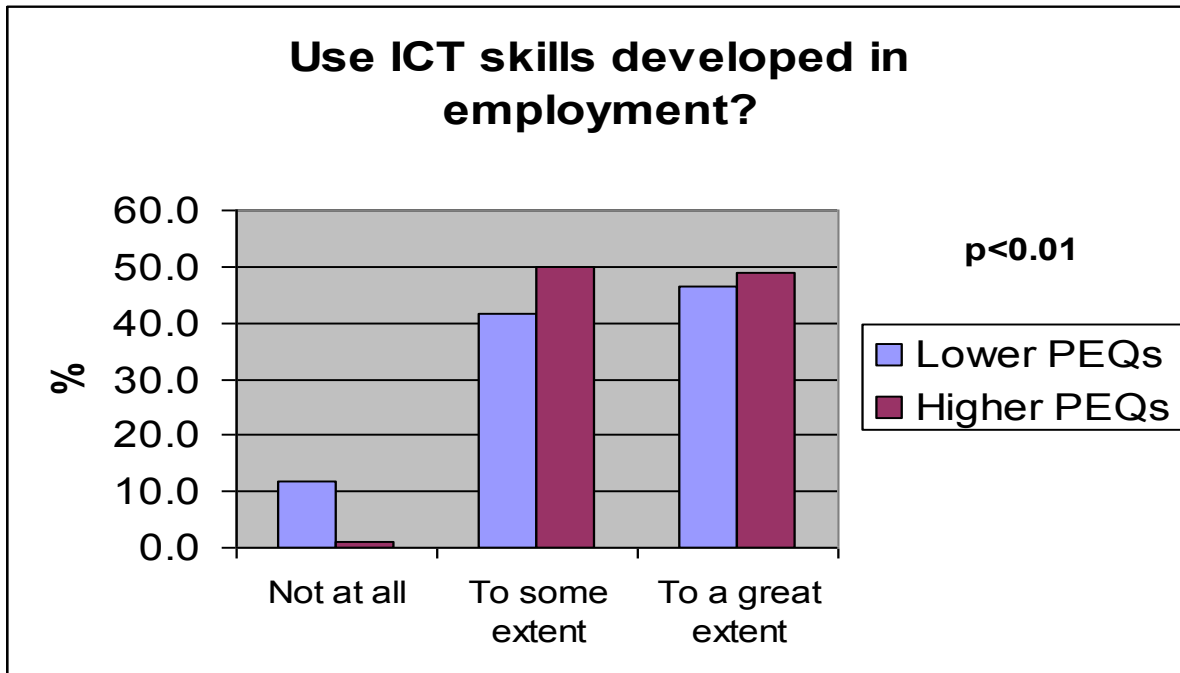
Figure 6: Responses of students with higher and lower PEQs to statement 11.

3.5 Value of skills to employers

Student responses to the following statements about the extent to which students believe their skills are seen by employers as important are shown in Figure 7.

Statement 14: How important to your current or future employer do you think the IL skills are that you've developed by studying this module?

Statement 15: How important to your current or future employer do you think the ICT skills are that you've developed by studying this module?
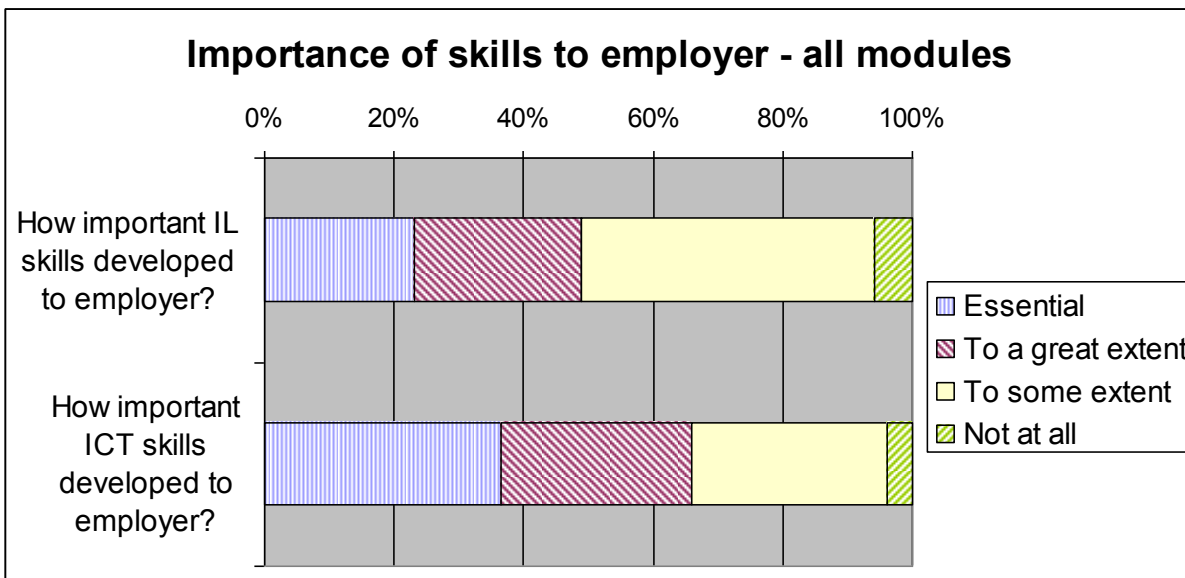

Figure 7: Student perceptions of the importance employers attach to skills.

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).

There are no significant differences between demographic groups.

4. Discussion

Most of the learners studying the three modules believe that digital skills are important and that they can transfer these skills from the module to all areas of their life. Digital literacy skills, particularly ICT skills, are considered of great importance to employers.

The majority of learners prefer to learn skills in the context of their subject and they like to be able to access skills guidance at the point that they need it. The same preferences have been identified in a separate analysis of the qualitative data from this study by Nix, Hall & Baker (2012). Evidence that learning is more effective when skills development is integrated into the curriculum is provided by several studies (e.g. Beetham, McGill and Littlejohn, 2009; Kingsley and Kingsley, 2009).

For the aspects of students views considered here, there are no differences between age groups. According to Prensky's (2001) original definition as those born after about 1980, the youngest age group (35 or under) would be categorised as 'digital natives' who have grown up with digital technology. The two older groups on the other hand would be categorised as 'digital immigrants' whose first experience of digital technology came later in life. According to the concept of the digital native/digital immigrant divide, the youngest group would be expected to hold different attitudes to the two older groups, but 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.

In comparisons between men and women, we find only one difference. Men are more likely than women to do a skills activity if it is provided separately from the module. One possible explanation is that men like to have the option of doing an activity at a time that suits them. However, the fact that there is no difference between men and women in their preference for deciding for themselves when to do an activity implies that this is not the reason. One alternative explanation is that men are more highly motivated than women to do everything in their module thoroughly and, as a result, are more likely than women to make the effort necessary to do a separate skills activity. Our current analysis does not provide any data to support or disprove this explanation but we will be looking for possible evidence, and for alternative explanations, as we analyse our qualitative data further.

We find only one difference 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. There are three possible explanations we can think of for this. Firstly, higher PEQs may be more likely to have a technically demanding job for which the skills will be useful. Secondly, they may be less likely to find work tasks intimidating or have greater confidence in using their skills in the workplace. Thirdly, they may be better able to 'transfer' skills learned in a module context to other contexts, so are better at relating their skills to the workplace. However, there is no difference between higher PEQs and lower PEQs in the extent to which they 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 the first and/or second explanation, as well as further alternative explanations.

On the basis of our analysis so far, we conclude that, to maximise engagement with skills learning, digital skills development activities should be delivered in the context of the subject that the student is studying and provide skills guidance at the point of need. This caters for all the demographic groups we have considered here. As learning designers, 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.

5. Acknowledgements

References

Beetham, H., McGill, L. and Littlejohn, A. (2009) "Thriving in the 21st Century: Learning Literacies for the Digital Age (LLiDA Project)", [online], http://www.caledonianacademy.net/spaces/LLiDA/uploads/Main/LLiDAreportJune09.pdf

Helsper, E.J. and Eynon, R. (2010) "Digital natives: where is the evidence?", *British Educational Research Journal*, Vol 36, No. 3, pp 503-552.

JISC (2012) "Digital literacy", [online], JISC InfoNet, http://www.jiscinfonet.ac.uk/infokits/collaborative-tools/digital-literacy.

Kingsley, K.V. and Kingsley, K. (2009) "A case study for teaching information literacy skills", *BMC Medical Education*, Vol 9, No. 7, [online] http://www.biomedcentral.com/1472-6920/9/7.

Kumar, S. (2010) "The Net Generation's informal and educational use of new technologies", *Technology & Social Media* (Special Issue, Pt 2), Vol 16, No. 1, [online], http://ineducation.ca/article/net-generation-s-informal-and-educational-use-new-technologies.

Nix, I., Hall, M. and Baker, K. (2012) "'What do I need?' – evaluating learner perceptions of digital literacy skills development to inform enhancements to learning design" [another paper presented at Blended Learning conference 2012 and submitted for inclusion in proceedings].

Prensky, M. (2001) "Digital natives, digital immigrants. Part 1", *On the Horizon*, Vol 9, No. 5, pp1–6.

Biography

Marion Hall (marion.hall@open.ac.uk) trained as a biologist. She joined the Science Faculty of the Open University in 1988, before moving to the Faculty of Health & Social Care as a Lecturer in Health and Social Care. She has been involved in developing e-learning materials since the early 1990s and currently works mainly on the development of digital literacy skills. See her website at http://www.open.ac.uk/personalpages/m.j.hall/index.html for further details.