

## **Collecting questionnaire and interview data: Evaluating approaches to developing digital literacy skills**

Ingrid Nix and Marion Hall

Faculty of Health & Social Care, Open University

### **Relevant Disciplines**

Education, Health, Social Work

### **Academic levels**

Advanced Undergraduate, Postgraduate

### **Methods Used**

Cross-sectional surveys; longitudinal surveys; questionnaires; semi-structured interviews.

### **Keywords**

Cross-sectional survey; longitudinal survey; questionnaire; Moodle quiz; semi-structured interview, digital literacy, information literacy, ICT, skills, learning design.

### **Links to research outputs**

Hall, M., Nix, I. and Baker, K. (2013) Student experiences and perceptions of digital literacy skills development: engaging learners by design? *Electronic Journal of E-Learning*, **11** (3), 207–225. ISSN 1479-4403. Available at: <http://www.ejel.org/issue/download.html?idArticle=258>

Hall, M., Nix, I. and Baker, K. (2012) “Why should I?” Engaging learners in digital literacy skills development. In: *Proceedings of the 11th European Conference on e-Learning, University of Groningen, The Netherlands, 26-27 October 2012* (ed. by H. Belduis), pp. 220–229. Reading, UK: Academic Publishing International Limited. ISBN 978-1-908272-73-7. Available at: <http://oro.open.ac.uk/35574/>

Nix, I., Hall, M. and Baker, K. (2012) “Why bother?” Learner perceptions of digital literacy skills development: learning design implications. In: *Proceedings of the 11th European Conference on e-Learning, University of Groningen, The Netherlands, 26-27 October 2012* (ed. by H. Belduis), pp. 406–415. Reading, UK: Academic Publishing International Limited. ISBN 978-1-908272-73-7. Available at: <http://oro.open.ac.uk/35581/>

Hall, M., Nix, I. and Baker, K. (2012) Are learner perceptions of digital literacy skills teaching affected by demographic factors? In *Proceedings of the Seventh International Blended Learning Conference, Wednesday 13 to Thursday 14 June 2012: Reflecting on our achievements – what's next for technology-enhanced learning and teaching*, pp. 12–20. Hatfield, UK: Learning and Teaching Institute, University of Hertfordshire. Available at: <http://oro.open.ac.uk/35488/>

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. In *Proceedings of the Seventh International Blended Learning Conference, Wednesday 13 to Thursday 14 June 2012: Reflecting on our achievements – what's next for technology-enhanced learning and teaching*, pp. 21–31. Hatfield, UK: Learning and Teaching Institute, University of Hertfordshire. Available at: <http://oro.open.ac.uk/34718/>

### **Abstract**

This case study describes a method of collecting data on students' experiences of developing digital literacy (ICT) skills as part of their course at the UK's Open University. An online reflective quiz was integrated into three health and social care modules, offering students the opportunity both to reflect on their experience of developing skills, and to give feedback to module authors. To make this quiz engaging and motivate students to complete it we used a variety of question types, including some that were interactive. We also used the quiz, very successfully, to invite students for interview. Recruiting interviewees can be a difficult process, especially with distance learners. Although there was no evidence of higher response rates, there are indications our data quality may be better than often achieved with standard questionnaires. Respondents value the reflective and interactive aspects of the quiz. Some question types, while improving the respondent experience, require extra work to extract data for analysis, but we suggest the effort is worthwhile in terms of the quality of data generated. Our method reaches all students on a module, not just a sample, and allows us to collect longitudinal data from repeated module presentations.

### **Learning outcomes**

By the end of this case study students should be:

- Able to identify advantages of using an online integrated module activity as a vehicle for collecting quantitative and qualitative data on student views about their module.
- Aware of how such an activity can serve the dual purpose of supporting students' learning and providing feedback to module authors.
- Aware of the advantages and disadvantages of using different question types.

## **Introduction and background**

This case study describes how we, as authors of materials used to teach digital literacy skills to distance learners, used an unconventional method to collect feedback on those materials and obtain information about student perspectives on their learning.

### **Context of the research**

We began our Evaluating Approaches to Developing Digital Literacy Skills (EADDLS) project at the UK's Open University (OU) in 2011 for two reasons. Firstly, many Faculty of Health & Social Care students tended not to engage with an important aspect of their module, namely digital literacy skills development, by which we mean the 'confident and critical use of ICT for work, leisure, learning and communication', as defined by the European Commission. Instead they concentrated on the subject-specific content of their modules.

This was a problem because 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. Digital literacy is particularly vital in work-based courses leading to professional qualifications, like our social work (SW) degree.

Secondly, we had developed different approaches for teaching skills. To support learners with low confidence and lack of motivation, we had initially developed step-by-step guidance and integrated activities within the subject studied. Later, we developed a set of more 'generic' resources that could be shared between modules.

To evaluate what support and guidance students need, in terms of both presentation and contextualisation, we looked at students' perceptions of their own digital literacy skills development, what motivated them to engage, and the relevance of digital literacy to themselves and their employers.

Because of the continual change in students' digital practices, we also wanted to collect data from successive student cohorts so as to monitor students' changing needs.

### **Demographic factors**

Those people who have grown up with computers and the internet are often described as the 'net generation' (a term originally coined by Don Tapscott in 1997) or 'digital natives' (a term introduced by Marc Prensky in 2001). Don Tapscott argued that the net generation will inevitably be more confident with technology and have better digital skills than older people who grew up before the internet existed. However, it is now evident there is no simple division between 'net' and 'non-net'

generations. Christopher Jones and Binhui Shao, for example, have concluded that, while age is important, other demographic factors, such as gender, also affect students' responses to new technologies.

OU students are mostly mature learners and come from a wide age range, so as part of our project we wanted to see if there were any differences between students in younger and older age groups. We also investigated whether other demographic factors such as gender, previous educational qualifications, or disability affected the way learners viewed module materials and their own skills development. Our aim was to inform our design of materials so that as far as possible we do not disadvantage particular demographic groups.

### **Choosing an evaluation method**

#### **The Open University context**

As a distance-learning institution, the OU provides many of its learning materials online, via a virtual learning environment (VLE) using the open-source software Moodle. A certain level of digital literacy is necessary simply to use the VLE for OU study. We had to evaluate student experiences at a distance since normally there is no face-to-face contact between module authors and students. OU modules may be studied by several hundred to several thousand students inside and outside the UK. Since all our students study online to some extent, using an online survey method would enable us to reach a large number of students and have the additional advantage that data could be collected digitally.

However, we needed to consider OU regulations which limit how many times the same student can be approached to take part in interviews or University-administered surveys. If we used the standard OU online survey route, we would only be able to approach a sample of students selected by the University from the relevant cohort.

#### **Social Work degree context**

A third-level module (equivalent to third-year undergraduate) in our SW degree already included an online reflective quiz activity which invited students to look back over the module's digital skills activities, decide how useful they were, provide examples of when they used skills, consider their importance, and so on. We wanted to evaluate two SW modules at first and second level (equivalent to first- and second-year undergraduate) to get a fuller understanding of students views on the skills activities they encountered during their degree course.

## **Developing our evaluation methodology**

We realised that a reflective quiz like the one used in the third-level SW module, designed as an activity to help students review their learning, presented three key advantages as an evaluation tool.

1. As an optional activity, integrated into the module like all other activities, rather than an externally-administered survey, it did not require sampling of students or considerations of how many times they had previously been surveyed. It would therefore reach the maximum number of students.
2. Because the quiz was integrated into the module, the responses of each student who submitted it were automatically linked to the personal information the OU holds about them. Students simply had to give their permission at the end of the quiz for us to use these data for our research. Thus within the quiz itself there was no need to collect any of the personal information we needed for demographic analyses.
3. As a module activity it could generate longitudinal data, providing a separate dataset for each annual presentation of that module.

We therefore created a reflective activity based on the one in the third-level SW module. In addition to the first- and second-level SW modules (SW1 and SW2) we used it to evaluate a second-level module from our Health and Social Care degree (HSC2). Unlike SW1 and SW2 which included subject- and context-specific skills activities, HSC2 based its digital skills teaching on the set of generic skills activities, so including this module allowed us to compare these different approaches.

Working within our Moodle VLE, we built the reflective activity using Moodle Quiz rather than Moodle Questionnaire. This gave us access to a greater variety of question types.

### **Quiz design**

We used a mixture of questions, some with fixed choice responses, such as multiple choice, and some that allowed free text input. This enabled us to collect both quantitative and qualitative data. Free text questions allowed students to add further comments or give examples of how they had used specific skills in their work, study or home setting.

Given the prevalence of online surveys these days – both those evaluating aspects of education within the OU, and those collecting marketing/consumer information outside the OU – we also wanted to try and avoid ‘survey fatigue’ by creating an evaluation tool that would be more engaging for students than a standard survey, and thereby improving the likelihood of their completing the activity.

We therefore varied the pace and rhythm of questions in our quiz, interspersing free text types requiring more time to complete with questions that could be answered more rapidly. None of the questions was compulsory so students need not answer any question they did not wish to.

Fixed-choice response questions included standard multiple choice (one answer from several or multiple answers from several). Another type addressed attitudes and preferences by inviting degree of agreement with a statement, using drop-down menus (as shown in Figure 1). Here related statements were grouped together in a single ‘question’. This had the advantage of reducing the number of questions included in the quiz, making it seem shorter and less daunting for students to complete.

To what extent do you agree with the following statements about the contexts in which the skills activities were set?

|   |   |
|---|---|
| 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. | Choose...<br>Choose...<br>Strongly agree<br>Agree<br>Strongly disagree<br>neutral<br>Disagree |
| 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.            |   |
| I am more likely to complete a skills activity if it is set in a context that is relevant to the module.  |   |
| I am more likely to complete a skills activity if it is set in a context that is relevant to my work.   | Choose...<br>Choose...  |

Figure 1: Question using drop-down menus to indicate degree of agreement with statements

We wanted to collect information about how students rated each individual skills activity (e.g. how useful they found it) and the reason for that rating. We could have used a similar type of question to that in Figure 1, using drop-down menus to select rating and reason, for each activity. But to provide more variety and to make some questions more interactive and fun to complete, we used a ‘drag and drop’ style instead, where students chose a rating and dragged it into a box for each activity. Then they chose a reason from a range of reasons supplied and dragged it to a second box for that activity (see Figure 2).

As well as being more interactive, we felt this format would have two other advantages: it would be easier to complete, since respondents could see all the options at once, and the action of dragging would encourage reflection about where to place the rating or reason (we will return to this later).

How useful, or not, did you find each of the following **ICT (computing)** skills activities (in terms of being relevant **within and beyond this module**, in your study of this and other modules, at work, or in your personal life)? Indicate your rating alongside each activity (e.g. quite useful), and the **main** reason you chose that rating (e.g. useful in my work). *Drag the phrases into the relevant boxes.*

| Activity ( <i>Links provided in case you want a quick reminder</i> )                           | Rating          | Reason              |
|--|-----------------|---------------------|
| A. Organising your work ( <a href="#">ICT Session 1</a> )                                      | quite useful    | had skill already   |
| B. Online communication - forums and email ( <a href="#">ICT Sessions 2-3</a> )                | not very useful | wasn't assessed     |
| C. Getting started with Word processing ( <a href="#">ICT Sessions 4, 8</a> )                  | didn't do       | had skill already   |
| D. Word processing a report ( <a href="#">ICT Session 10</a> )                                 | very useful     | useful at work      |
| E. Working with tables and electronic files - PDFs ( <a href="#">ICT Sessions 11, 12, 13</a> ) | didn't do       | not enough time     |
| F. Working with database - managing references ( <a href="#">ICT Sessions 14, 15, 16</a> )     | so-so           | skill I didn't have |
| G. Web skills ( <a href="#">ICT Session 17</a> )   | not very useful | had skill already   |
| H. Creating network diagrams ( <a href="#">ICT Sessions 18</a> )                               |                 |                     |
| I. Making sense of numbers - Intro to Spreadsheets ( <a href="#">ICT Sessions 19-20</a> )      |                 |                     |
| J. Reviewing and analysing your progress ( <a href="#">ICT Sessions 21-22</a> )                |                 |                     |

|                     |                           |                         |                           |                   |           |
|---------------------|---------------------------|-------------------------|---------------------------|-------------------|-----------|
| very useful         | quite useful              | so-so                   | not very useful           | not at all useful | didn't do |
| useful at work      | useful for another module | useful in personal life | needed for TMA assignment |                   |           |
| skill I didn't have | not relevant              | couldn't follow it      | had skill already         |                   |           |
| wasn't assessed     | not enough time           | looked too difficult    | looked boring             |                   |           |
| other               | useful for this module    |                         |                           |                   |           |

Figure 2: 'Drag and drop' question

### Informing students and gaining consent to use data

The opening page of the quiz made it clear to students that it had a dual function as:

- a reflective activity to help them review their learning
- a mechanism to give feedback to the module authors.

The final pages allowed students to:

- give consent for their (anonymised) data to be used for the purposes of our research and publications
- volunteer to participate in interviews/follow-up research.

## **Making the quiz available to students**

We provided a link to the quiz within the learning guide on each module website. The link was ‘live’ for a few weeks from before the final end of module assessment (EMA) until just after the module finished. This meant all students had the opportunity to complete the quiz and they had some choice in when to do it.

The reflective quizzes are rolled forward into subsequent presentations of each module, so a new set of data is collected from each student cohort.

## **The interviews**

For the EADDLS project we selected 18 interviewees, six from each module. After the end of the module, we conducted semi-structured interviews lasting up to 2 hours, either face-to-face or by telephone. These were audio-recorded and transcribed. The interviews built on the quiz questions, considering perceptions and experiences of activity designs related to digital skills development. All three project team members took part in the first interview to standardise the approach. Subsequent interviews included one or two interviewers.

We took the opportunity during each interview to gather feedback on the effectiveness of the reflective quiz activity. We asked the interviewee what they thought about:

- The timing of the activity and whether providing it near the end of the module was appropriate
- The length of time it took to complete the activity
- The activity as a reflection tool
- The activity as a feedback tool

Interviewees were later invited to visit our project website to see our findings and outputs.

## **Analysis of data**

We analysed the interview data using thematic analysis and a contextualist method, described by Virginia Braun and Victoria Clarke as encompassing the reporting of experiences, meanings and the reality of participants while at the same time considering the ways the broader social context affects those meanings.

We used NVivo software to code the transcripts, based on methods described by Patricia Bazeley (2007), and using a set of categories or “nodes” agreed within the project team. To maximise reliability, all three members of the team coded the first two transcripts independently and checked for

interpretation. After that, transcripts were first-coded by one person and second-coded by another, swapping roles between project team members.

For the quantitative data, we used the combined data from all three modules to make comparisons in relation to five demographic factors: gender, age, level of previous educational qualifications obtained before joining the OU, disability, and socio-economic status. We also looked to see if there were any differences in students' responses between modules.

## Results

### Response rates

The results of each quiz were downloaded as a Microsoft Excel spreadsheet which, as well as student responses to questions, contained information about which students opened the quiz without subsequently submitting it.

From the three modules a total of 298 students submitted the reflective quiz (23.0% of all students invited to complete it) and 123 (9.5%) volunteered to participate in follow-up research.

Of those who opened the quiz, 52% then closed it without continuing or answering any questions.

| <b>Module</b>  | <b>Cohort total<br/>(no. invited<br/>to complete<br/>quiz)</b> | <b>No (% of<br/>cohort) who<br/>opened quiz</b> | <b>No. (% of<br/>cohort) who<br/>submitted<br/>quiz</b> | <b>No. (% of cohort)<br/>who volunteered<br/>for follow-up<br/>research/ interview</b> |
|----------------|--|---|---|--|
| SW1            | 573  | 303 (52.9)                                      | 160 (27.9)  | 71 (12.4)  |
| SW2            | 425  | 167 (39.3)                                      | 87 (20.5)   | 25 (5.9)   |
| HSC2           | 297  | 101 (34.0)                                      | 51 (17.2)   | 27 (9.1)   |
| Overall totals | 1295   | 571 (44.1)                                      | 298 (23.0)  | 123 (9.5)  |

*Table 1 Response rates*

### Analyses and data presentation

Figure 3 shows the sort of data that could be extracted from a drop-down-menu question type, in this case one where students were asked to indicate the degree to which they agreed with various statements (as shown earlier in Figure 1).

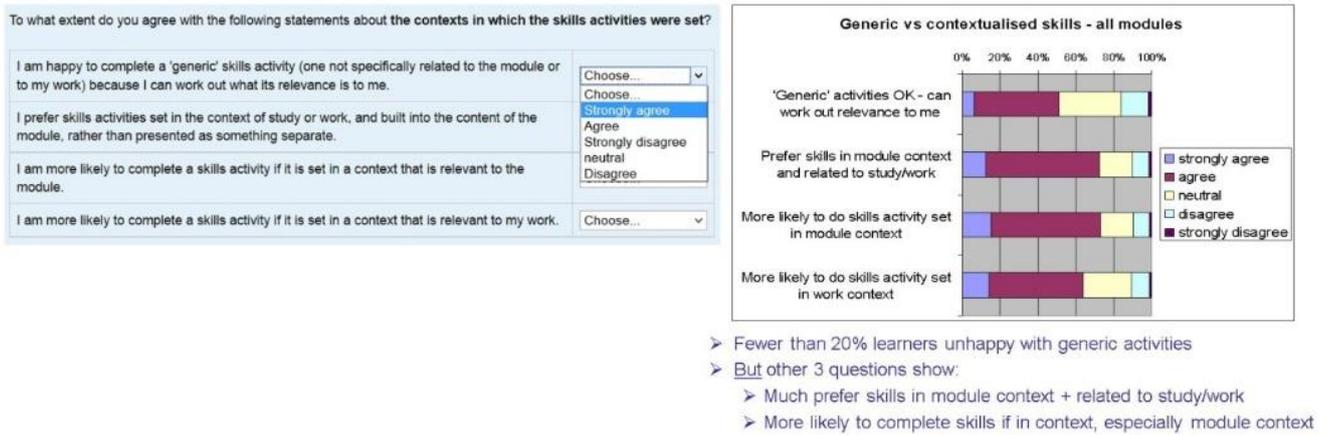


Figure 3: Data extracted from a question type based on a drop-down menu to indicate degree of agreement with statements.

Figure 4 shows the kind of demographic analysis that can also be carried out on the extracted data, in this case a comparison between women and men in their responses to the first statement in the question shown in Figure 3.

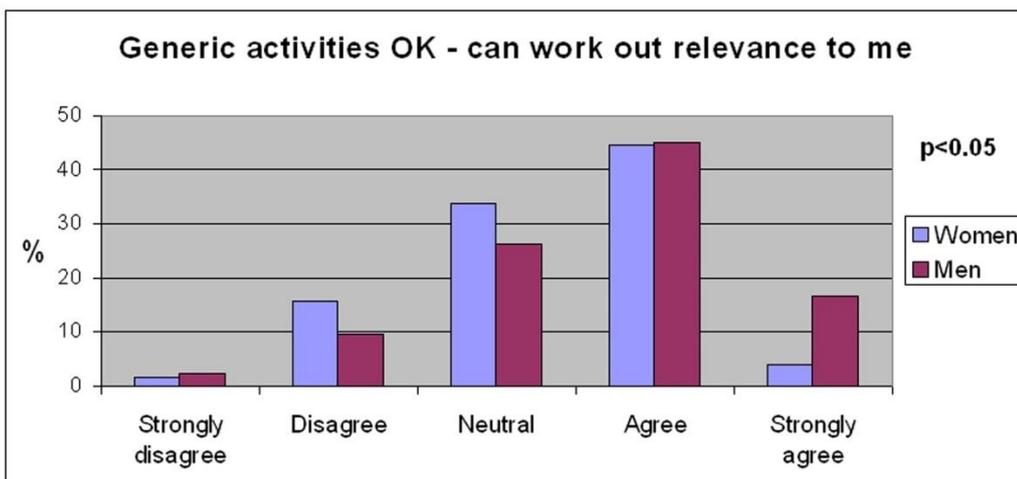


Figure 4 Demographic analysis of data obtained from question shown in Figure 3 comparing the responses of women and men to a particular statement.

Figures 5 and 6 show the sort of data that can be extracted from the drag-and-drop question shown in Figure 2, which in this case shows the various reasons given for activities being useful or not.

As well as revealing which activities were perceived as most useful (bar chart in Figure 5), these data also revealed the most common reasons (Figure 6).

For example, the most common reason given for usefulness was 'useful at work' (darkest colour bars to the left), whereas for not being useful it was 'had skill already' (light colour bars to the right).

How useful, or not, did you find each of the following ICT (computing) skills activities (in terms of being relevant **within and beyond this module**, in your study of this and other modules, at work, or in your personal life)? Indicate your rating alongside each activity (e.g. quite useful), and the **main** reason you chose that rating (e.g. useful in my work). Drag the phrases into the relevant boxes.

| Activity (Links provided in case you want a quick reminder)                  | Rating          | Reason              |
|--|-----------------|---------------------|
| A. Organising your work (ICT_Session.1)                                      | quite useful    | had skill already   |
| B. Online communication - forums and email (ICT_Sessions 2-3)                | not very useful | wasn't assessed     |
| C. Getting started with Word processing (ICT_Sessions 4, 8)                  | didn't do       | had skill already   |
| D. Word processing a report (ICT_Session.10)                                 | very useful     | useful at work      |
| E. Working with tables and electronic files - PDFs (ICT_Sessions.11, 12, 13) | didn't do       | not enough time     |
| F. Working with database - managing references (ICT_Sessions 14, 15, 16)     | so-so           | skill I didn't have |
| G. Web skills (ICT_Session 17)   | not very useful | had skill already   |
| H. Creating network diagrams (ICT_Sessions.18)                               |                 |                     |
| I. Making sense of numbers - Intro to Spreadsheets (ICT_Sessions 19-20)      |                 |                     |
| J. Reviewing and analysing your progress (ICT_Sessions.21-22)                |                 |                     |

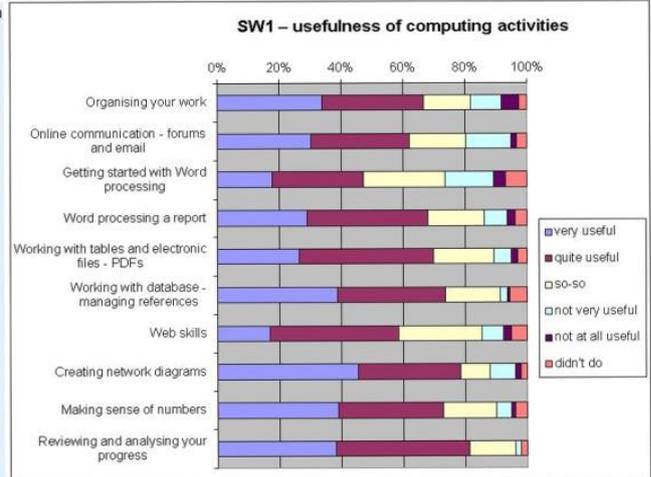


Figure 5: Data extracted from a drag-and-drop question type which asked students to rate the usefulness of individual activities and indicate a reason. The right-hand chart shows degree of usefulness for all activities.

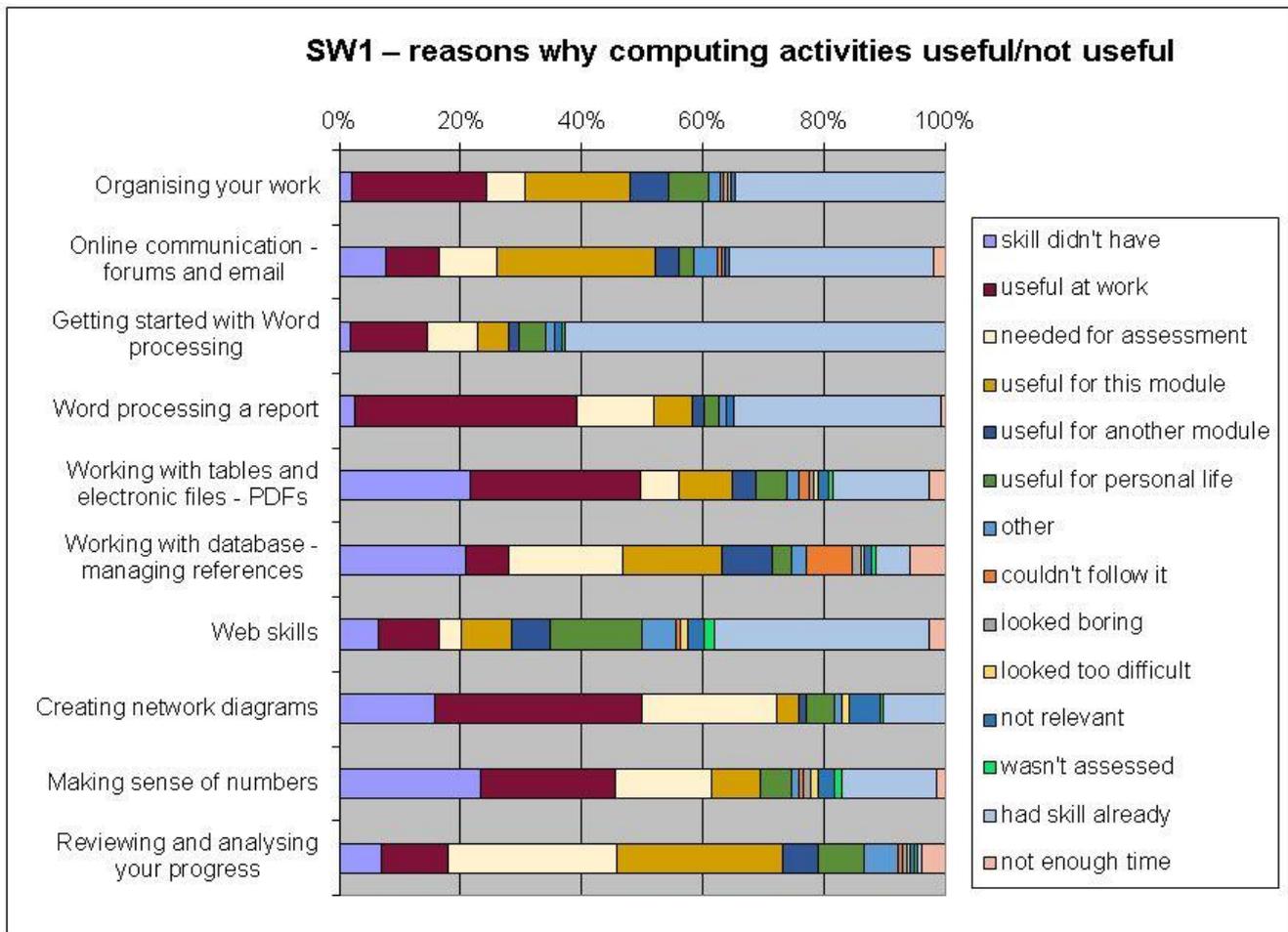


Figure 6: Data extracted from a drag-and-drop question type which asked students to provide a reason as well as a rating.

## Linking qualitative data to quantitative analyses

Because many of the interview questions followed up questions asked in the quizzes, we were often able to link quotations from interviewees directly to quantitative results, giving a richer interpretation of our data (see Figure 7).

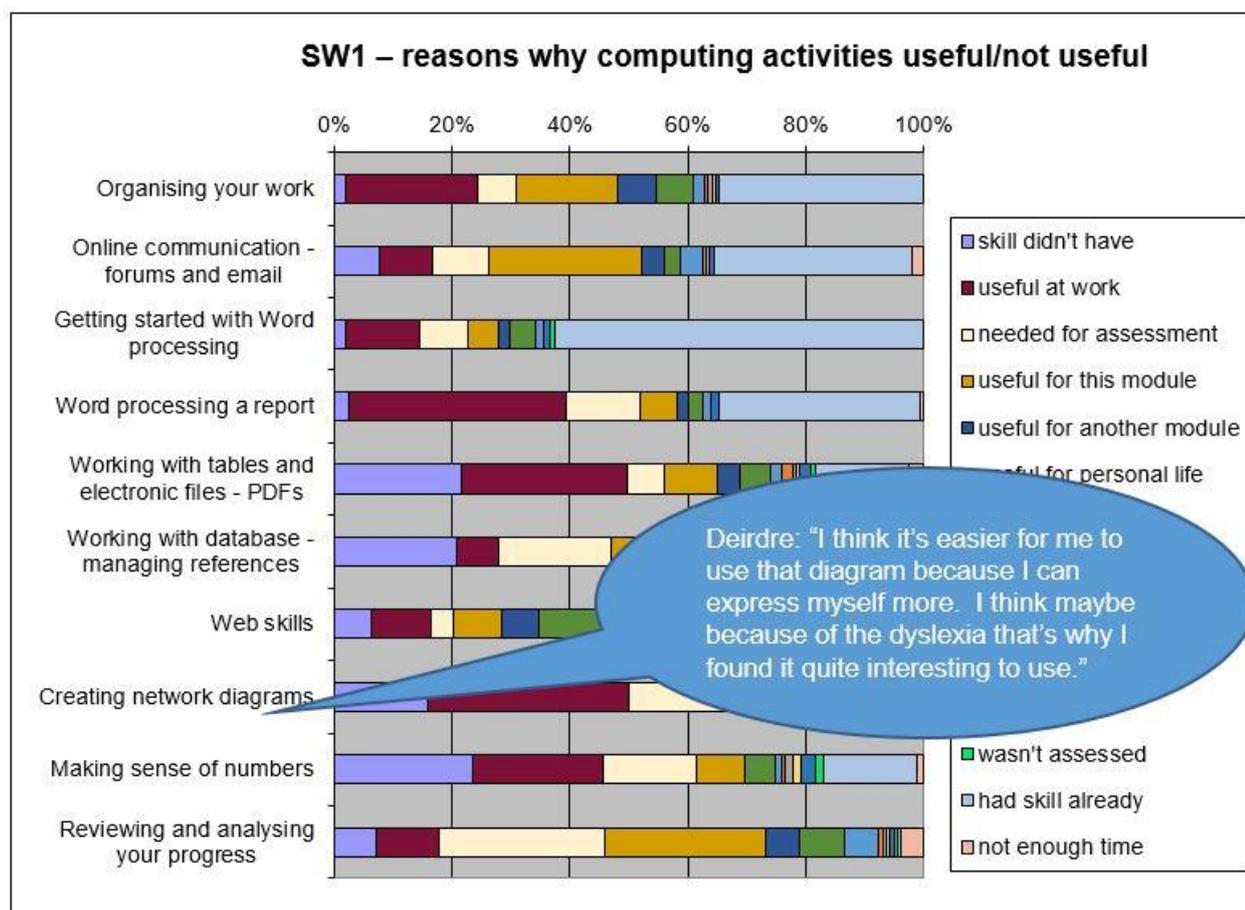


Figure 7: Example of linking qualitative comments from interviewees to quantitative data from quiz.

For example, Deirdre, when interviewed, as well as saying she found the skill of creating network diagrams useful at work (one of our fixed-choice responses) was able to give additional reasons not provided in our fixed-choice responses – that she needed more practice and welcomed the module activity for this reason. Furthermore, that because she is dyslexic she finds this skill particularly helpful in enabling her to communicate more effectively.

## The data extraction process

The main disadvantage with using question types that provide variety and interactivity is the data can be more difficult to extract. When the Moodle quiz data are downloaded as a spreadsheet, each student's responses appear as a single row and the answer(s) for each question appear in a single column. For a multiple choice question with a single answer, the column contains that single answer and extracting, for example, the total number of students giving each response is straightforward. But

if a question contains several answers, then all those answers appear in a single column. For example, the question shown in Figure 1 asks for the degree of agreement with four different statements. Responses from one student would be shown in a single cell in the relevant column of the spreadsheet (Table 2):

|   |
|---|
| Question 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. -> Agree; 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. -> Strongly agree; I am more likely to do a skills activity if it is set in a context that is relevant to the module. -> Agree; I am more likely to do a skills activity if it is set in a context that is relevant at work. -> Disagree |

*Table 2 Example of one respondent's data for a question with four statements displayed in a single spreadsheet cell*

To extract this data for analysis it was necessary to save the spreadsheet as a tab-delimited text file. Each column could then be separated out into its constituent answers by opening the text file as a Microsoft Word document and using Word's Find and Replace facility to replace parts of the text with tabs at appropriate points, so that it looked like this:

|             |                |             |             |
|-------------|----------------|-------------|-------------|
| Question 1a | Question 1b    | Question 1c | Question 1d |
| Agree       | Strongly agree | Agree       | Disagree    |

This text could then be converted to a Word table containing four separate columns (Table 3).

|             |                |             |             |
|-------------|----------------|-------------|-------------|
| Question 1a | Question 1b    | Question 1c | Question 1d |
| Agree       | Strongly agree | Agree       | Disagree    |

*Table 3 Extracted data from example question converted to a Word table*

This in turn could be copied into a new spreadsheet for further analysis.

This seems convoluted but, once a 'protocol' has been set up for changing the original downloaded spreadsheet into a form suitable for analysis, conversion of the data is relatively straightforward.

### **Importance of consistency in question wording**

To minimise the difficulties of data extraction and interpretation, it was important to use exactly the same wording for a particular question in each of the three module quizzes. Any small difference in wording between modules would mean firstly, that the data extraction protocol would not work for all

modules, because Word's Find and Replace facility would find only one variant of the wording and not other(s). Secondly, it could affect the comparability of data. For example, 'useful at work' or 'useful in work' might be interpreted slightly differently by respondents.

### **Interviewee perceptions of the methodology**

#### **Effectiveness as a reflective tool**

Students valued the reflective aspect of the activity because:

- it reminded them of things they had forgotten they had done
- it enabled them to recognise how much they had covered
- it enabled them to see the progress they had made, comparing their level at the beginning and at the end - *'made me realise how far I'd come really'* (Fanny)
- it prompted them to reappraise the skills activities from a different perspective. For example, Kelly had initially done them simply to meet assessment requirements but on reviewing the skills activities it caused her to *'reflect on what I had learnt during the year'*.
- it gave them an opportunity to collect their thoughts about a feature of the module (learning ICT skills) that had stirred up a lot of discussion (not always positive)

#### **Features inducing reflection**

Students liked the variety of questions, especially the inclusion of free text. They felt the quiz was not simply a 'tick box activity' instead encouraging them to approach it more thoughtfully.

*'sometimes with feedback questionnaires it is just a case of scaling things, and I sometimes [...] feel that you don't say everything you want to say when you're scaling something like that, so there was opportunity to go a bit more in-depth'* (Liz)

Vicky said she did not approach the activity by randomly clicking items but instead considered her responses carefully. Jane liked the drag and drop questions because she could 'experiment and play about with it'. Having all possible responses visible at once seems to convey a sense of being able to try out and assess the accuracy of answers. It suggests responses may represent student feelings more closely than questions that could lead to a less considered answer.

Phil noted he very consciously wanted to be as honest as possible, so when he selected drag and drop options he gave a candid evaluation of the activities.

Colin appreciated the flexibility and the ability to provide more detail:

*'There were sort of free text boxes so I was able to actually write sort of more detailed if I felt like it [...] I don't think anything was mandatory so if I didn't feel like answering a particular question it didn't make me.'*

### **Value of feeling listened to**

Kirstin and Colin perceived the quiz as more of a feedback tool than a reflection tool. But overall, interviewees valued the feedback element because they:

- felt 'listened to'
- believed action would be taken.

For example, Caroline had not expected and was unhappy about having to do ICT. She felt very strongly about it and the quiz gave her the opportunity to let us know her views. Don also wanted to give feedback:

*'When you're working through the course work you might be sitting there with one particular thing and thinking 'this is just a waste of time [...]why am I doing this', but it's no good sitting ranting and raving and being red-faced and not actually telling anybody anything about it when really it should be fed back.'* (Don)

Liz points out the additional value of using the quiz to invite respondents for interview, because it allows them to follow up in more depth and get something they feel strongly about 'off their chest':

*'It's also kind of nice that it's led to something [the interview] and that I feel that I was perhaps listened to'.*

Jane and Colin saw their feedback as a means to improve future module presentations. Deirdre was pleased to be asked to reflect on her way of learning:

*'I've got dyslexia. It was really good for somebody to ask you about your way of learning, what you think and what improvement can be done so it was good for me.'*

Although students could use free text questions to give detailed feedback, it seems the opportunity to speak directly with module authors was valued, especially by those who had had negative experiences.

### **Timing and length**

Most students agreed the quiz was best placed at the end of the module to allow reflection after completing all the skills activities and liked the flexibility to complete the quiz before or after the EMA. Vicky for instance thought it was suitably placed, as it could be done before the EMA, when not much else was happening in the module. Diane pointed out its positive impact in terms of boosting

confidence before preparing for the EMA. Don felt the quiz worked better as a reflective tool because it was only available for a limited period and not throughout the module to dip in and out of.

The majority felt the time it took to complete (approximately 30 minutes) was about right. Even the three who thought it a bit lengthy noted that nonetheless they didn't mind this.

## **Discussion and conclusion**

### **Data quality**

There was no evidence that our method of surveying students resulted in higher (or lower) response rates. However, compared with straightforward online questionnaires, of the kind produced using most survey tools, one of the main benefits of the dual purpose function of our quiz, in inviting feedback and reflection, appears to be that it may encourage more thoughtful responses from students and therefore more meaningful data. This may be because students respond not only for their own benefit but also with a potential module author in mind. Respondents to online surveys are often self-selecting and may not necessarily be representative of the desired target audience. The fact that some students deliberately used the quiz to give feedback provides evidence that this may have been an important driver to submit it, possibly overriding common concerns about completing an online survey, such as workload, accessibility, or inhibition.

Our interviewees confirmed that different question types made the activity more engaging, stimulating recall of experiences and providing variety in rhythm and task. Students valued the reflective element and features that assisted such reflection because this enabled them to recognise the work they had done and the progress they had made.

The quiz was also highly successful as a means to recruit interviewees, generating a high response rate. Researchers often have difficulties finding distance learners willing to be interviewed. Respondents may possibly be more receptive to this means of inviting them because, having seen what type of information we wanted in the quiz, they felt more confident about what we were expecting in the interviews.

The combination of quiz and interview also allowed us to improve the accuracy of our data. Because all interviewees submitted the quiz, the interviews allowed us to 'double-check' the interpretation of questions and the validity of answers so as to:

- improve the quiz
- address any contradictions (within the quiz, or between the quiz and interview) and correct unintended responses in the quiz.

## **Other advantages**

Using module-based reflective quizzes has other advantages.

- Annual collection of the same dataset allows trends over time to be identified.
- Repeating the quiz at each level of a course allows a cohort of students to be tracked through their studies, to see how their responses change.
- Using identical questions in different modules enables comparisons to be made between modules.
- If quiz submissions are linked to student personal information, demographic comparisons can be made without having to collect personal information within the quiz.

## **Challenges in question design**

Balancing the number of questions presented to students against the amount of data, though desirable, can be challenging. For respondents, it may be less daunting if related issues are addressed in a single question, rather than in several separate questions. However, for us, the variety of questions and the requirement for multiple answers within one question did make it more time consuming to extract data for analysis. We have established a protocol for extracting data from 'combination' questions but anyone planning to use our survey method should be aware that there is a balance to be struck between making the quiz more enjoyable for the student to complete and making it more difficult for the researcher to analyse.

## **Issues for future surveys**

We did not contact students who did not submit the quiz to find out why. It would be useful to investigate what those who opened the quiz but then did not proceed further found off-putting, e.g. question design, quiz subject or length, or other factors, especially if we can identify things we can do something about.

As a result of our EADDLS findings, others are starting to use our approach. Other authors from the evaluated modules see the benefit of updating existing quizzes to evaluate new topics, so new questions have been added, replacing existing ones so as not to overload students.

However, when existing questions are changed the ability to consider longitudinal trends is adversely affected and any differences created between modules make comparisons more difficult.

Module authors in other faculties are also starting to use and extend our approach. For instance, Janet Haresnape adopted our idea of integrating a questionnaire into a module in order to capture student views about a collaborative activity and invite interviewees.

Finally, in the process of disseminating our work, some OU colleagues have qualms about our approach. Concerns include the legitimacy of using a module activity to ‘survey’ students, and what frequency is appropriate. Connected to this is the view that students should always be asked to ‘opt in’ rather than ‘opt out’ when it comes to their demographic data being used in the research. Anyone planning to use our approach needs to consider such ethical issues within the context of their institutional guidance.

### **Discussion questions**

- Before reading the case study, consider what different techniques you think might be suitable for evaluating students’ experiences of learning. How different would these be for distance learners?
- What design features in an online evaluation might make taking part more appealing?
- How important to you is it that your design will allow easy data extraction?

### **Further reading**

Groves, R. M., Fowler, F. J., Jr, Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2nd ed.). Hoboken, New Jersey: John Wiley & Sons.

### **Links to web resources**

EADDLS project website: <https://sites.google.com/site/eaddlsproject/home>

Moodle website: <https://moodle.org/>

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