

# Question design and rationale

## Developing others pathway

### The approach used in the discovery tool

At the start of the design process we had to make a significant decision. We could have written ‘testing’ questions, as in a typical assessment test, to find out what users really understand about digital applications and approaches. But we decided to write ‘developmental’ questions instead.

We have gone down this road partly because we are not convinced that testing abstract understanding is the best indicator of actual practice, and partly because this approach is more acceptable to end users. Our research has shown us that if staff feel they are being ‘tested’ in anyway, this may impact negatively on their engagement with the process. Staff want to be treated as professionals, and to take responsibility for assessing and moving forward their own practice.

This has important implications for the meaning of the scoring ‘bands’ that we use to assign feedback to users (more of this shortly).

### Where do the question items come from?

#### Digital capability for all (staff and student) questions

The starting point for the development of the questions was the six-elements of digital capability framework (which breaks down further into 15 sub-elements), which has had good recognition and buy-in from the sector and the specific role profiles that focus on the requirements relating to particular roles.

We first developed a wide range of real-world activities that digital professionals/learners do relating to those elements. We’ve tested those out with expert panels and in cognitive interviews with staff and students.

For the staff version of the ‘Explore your overall digital capability’ question set, you’ll see there are 15 sections with activities relating to each element, eg ‘data literacy’. Each element has two questions. The first question in each section offers eight options in an ‘activity question’ presented as a grid (‘Which of these can you do? Select any or all that apply to you’). We then offer a ‘confidence’ question which asks people to identify how confident they are in that element (or occasionally a specific key activity for that element).

The two ‘current student’ versions (further education (FE) and higher education (HE)) of these questions have slightly different element headings in some areas. ‘Digital learning’ and ‘Digital teaching’ have been changed to ‘Preparing for digital learning’ and ‘Digital learning activities’. We also added a new element called ‘Digital skills for work’.

## Specialist question sets

In the case of specialist question sets for staff, we used specialist requirements from the relevant professional profile(s) as the main elements, such as 'face-to-face teaching' or 'assessment and feedback' in the case of the teaching question sets (see also our [blog post on digital capability profiles for different roles](#)). Specialist question sets were developed with groups of experts in that area to ensure that element headings, questions, feedback and resources properly reflect an area of work or were appropriate for a particular group. At present there are three staff specialist question sets - for 'Teaching in FE and skills', 'Teaching in HE' and 'Working in a library and learning resources'

For each element eight activities from these profiles were used to provide two sets of 'activity questions', the first presented as a grid with three options and a second question with five options ('Which of these can you do? Select any or all that apply to you'). We then offer a 'confidence' question which asks people to identify how confident they are in that area (or occasionally a specific key activity for that area).

Our pilot phase identified a need for a question set for 'new students'. This question set was developed from the current students question set but was made shorter by focusing on the six (rather than 15 elements) and focused on aspects that new students need to consider such as identifying and articulating their 'Digital preferences or needs' and 'Managing your digital learning'. A group of students offered an input to the development of this question set.

To see a full description of all the elements used as the basis for the questions see here and [view the element descriptions](#).

## Scoring of questions

The primary purpose of the scoring is to ensure that users get the most appropriate feedback based on their responses to questions, rather than being an objective measure of competence, although their result can provide a useful indication of confidence/competence. Most users have rated the quality of feedback highly - it had the most positive comments of any feature.

The confidence questions receive only a small proportion of the overall score as we recognise that self reporting can be subjective. Scores relate to three different levels of 'capability'. 'Developing', 'capable' and 'proficient'

Users are presented with different feedback for each element depending on which level their scoring indicates. They receive a summary of what that level means and some suggested next steps to consider trying if they want to develop that element further.

# 'Activity' grid questions

Example of an 'activity' question for the Overall digital capabilities (for all) question set:

Information literacy (1 of 2)

**Which of these information tasks can you do already?**

Choose any or all that apply to you

Use filters in an online search (eg published in UK, only news articles, published in the last two years)	Correctly reference an online source
Manage bookmarks or references	Recognise and use an open licence (eg Creative Commons)
Use additional keywords or phrases to reduce the number of online search results	Review the history of a Wiki article
Check the credibility of information on a web page	Understand copyright (legal right to use/distribute) as it applies to digital information
None of these	

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Example of an 'activity' question from the teacher (FE) specialist question set:

Planning and preparation (2 of 3)

**When planning a learning session or course, which of these do you do?**

Choose any or all that apply to you

Look for relevant examples or materials online
Provide alternative formats for students with different media preferences or needs (eg audio, video)
Challenge yourself or your students with new approaches
Share your ideas online with other teaching professionals
Allow students to use a range of digital tools including their own devices (eg smartphones, tablets)
None of these

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Activity questions offer a range of digital activities that staff may do already, may want to do, or may not even have thought about. We try to clarify that we don't think digital practices are always the best, but we do want people to extend their repertoire so they have more experience of what does (and doesn't) work. We try to use wording that values skills users have, even if they can't use them currently due to their role or organisational context. We have tried to avoid very role-specific activities, but not to preclude the possibility that people might develop some professionally-relevant skills in their personal lives, or take on tasks from 'other' roles that they enjoy. We include fairly basic activities that many users will be able to select, and quite advanced activities that offer something to aspire to. The 'nudge' information is obvious: think about doing some of these things if you don't or can't already.

## 'Confidence' questions

An example of a 'confidence' question from the Overall digital capabilities question set:



Information literacy (2 of 2)

**How confident do you feel that you can find the digital information you need to do your job?**

Move the pointer to show how confident you feel

Not at all confident  Completely confident

PREVIOUS NEXT

Why have we included questions that ask users 'How confident do you feel about..?' when we know that self-assessed confidence is generally unreliable? We do this at the end of each element so that after reading the options in the activity questions they can reflect on where they think they are. By trusting users to rate themselves, we are both reassuring them that they are not being 'tested', and asking them to be honest and searching in their responses. We have weighted the scoring for this question at a low level to reflect users tendency to answer inaccurately – though in fact during the pilot when we came to compare confidence scores with scores on the activity question types in the same area of practice, there was a positive match.

## Impact of pilot phase evaluation on question design and content

During our extensive pilot phase which ran from January - May 2018 involving over 100 educational institutions across FE, HE and skills sectors we carried out several independent evaluation activities. In designing the questions it was critical to create a navigable user experience – making sense and generating helpful feedback. The feedback we received helped us to reconsider the format of questions and to refine some of the content.

## Length and complexity of questions

Originally there were 3 questions for each element (these are described in our blog post [Discovery tool: understanding the questions](#)). This meant that for the longer question sets (based on the 15 elements of the digital capability framework) there were 45 questions (screens) to answer and navigate.

Whilst the 'activity (grid) questions' and 'confidence questions' were relatively easy to understand and answer, pilot feedback revealed challenges with another type of question. These 'depth questions' offered a short situation or example. Users were asked to select one response that best matched what they would do or what expertise they have. The lay-out of the question reflected a progression logic: the first option reflecting the lowest level of judgement or expertise, and the fourth option reflecting the highest. Although these questions were effective in getting people to think more deeply, we did receive queries and challenges about the progression logic used and the relevance of the chosen example for all roles.

In response to these challenges we decided to drop the 'depth questions' and incorporated the activities covered by those questions into the 'activity (grid) questions'. This meant that we cut down the number of questions in the longer question sets from 45 to 30. We also decided to move the 'confidence questions' to the end of each element so that people would have developed an idea of what that element covered by answering the 'activity (grid) question'.

Further evaluation of this new format revealed an overwhelming preference for the shorter format and the movement of the confidence question.

## Issues around self-reported practice

We have tried our best to use prompts that reflect capability ('could do', 'would do', 'have ever done') rather than current practice ('do', 'do regularly'), which may be constrained by organisational issues or may reflect judgements not to use. However, we are also mindful that self-reported practice ('I actually do this') is usually more accurate than self-reported ability ('I could do this if I wanted to'). Where we feel it is justified, we have continued to ask about actual use. So long as users understand that they are not being judged, it seems appropriate for the questions and feedback to indicate areas where they are not as capable as they might be if their organisation were more supportive of different practices, or their job role offered more digital opportunities.

We have also used the phrase 'If given the opportunity' to acknowledge that some people could do certain activities that are not covered in their current role and we added a 'none of these' option to the 'Activity questions' to allow people to select this if none of the options resonated with them.

## Focus on digital practices at work rather than personal activities

We have tried to focus more on activities people do at work, in an educational organisation (college, training provider or university) or in their learning. During the pilot there were some negative comments about references to digital practices beyond this space. However, because of the need to cover a very wide range of digital activities – and because some roles don't allow people to express digital capabilities they actually have – we can't avoid offering some examples from beyond a narrowly-defined work role. For example, under 'data literacy' we have 'judge the credibility of statistics used in public debate'. This is to allow users who don't evaluate statistics as part of their job to reflect on whether they have these capabilities anyway – perhaps gained in their personal life or another role. And indeed to consider whether these activities might be useful to them.

## Assumptions about social media use

We changed several references to social media, as a number of users objected to what they felt was an underlying assumption that social media would or should be used, and that this was in fact a positive sign of capability. There are still several ways that users can show they are making wise judgements about the appropriateness of social media.

## Teaching questions

Teaching questions aim to focus on pedagogical judgement rather than digital practice. There are quite a number of caveats eg 'if appropriate to my learners', which were suggested by more expert users.

## Terminology

In addition to simplifying language we also added more examples to the 'activities (grid) questions' in response to feedback that people may not be familiar with some of the terminology used. We have also produced a glossary to help users of the discovery tool make sense of any terminology that they do not understand.

## Scoring

Thanks to the aggregate data we gathered from pilot users, we were able to compare the median scores for each of the questions asked, and look at some other stats across the different question sets. We were pleased to see from the first data returns that questions produced the medians we would expect, with one or two exceptions. We worked on these outlying questions to make it a bit easier (or in one case a bit harder) to score in the middle range. This should bring the medians more into line with each other, making it easier and more valid to look across aggregate scores and compare areas of high and low self-assessment.

We were particularly pleased to find on testing that there was a positive correlation between confidence and responses to other questions in the same area (ie expertise and range). We don't attach a great deal of weight to this question type, precisely because it is known that users tend to overstate their confidence, but is included to encourage reflection and a sense of personal responsibility.