

Understanding your data: question by question

This Guide helps you to:

- · identify the stakeholders with an interest in each question
- explore and analyse the data from each question
- consider how you might report on your findings

Before using the Guide we imagine you will have:

- finished collecting data and closed your survey
- looked at your summary data tables in the BOS 'analyse' area
- looked at benchmarking data (for the questions where this is available) in the BOS 'benchmarking' area
- downloaded your data as required e.g. numerical data into a .csv file, free text data into a text file
- read the general information in our Guide: Analysing your data, if you are not already familiar with data analysis.¹

How to use this Guide:

1. *Match the questions in this Guide to your data*. There are five versions of the Tracker (HE, FE, ACL, Skills and Online, with Welsh and English translations. You should use our <u>Data mapping guide</u> to look across different versions of the Tracker so you can merge or compare your data from equivalent questions. You can also use this guide to match this year's questions with the equivalent questions from previous Trackers.

¹ If you are not sure about the terms in *italics* in the main table, this Guide can help explain them



- 2. Use the first column of the table to *identify key stakeholders with an interest in each question*. These people may have their own data and evidence to put alongside the Tracker findings. Our suggestions are only for guidance: responsibility may be allocated differently in your organisation. Always aim to include learners themselves in the process of understanding and responding to your findings.
- 3. Use the second column to help you *understand what the findings mean* and apply any further analyses that are relevant. You should always be guided by your organisational priorities, your stakeholders' views, and by the resources, expertise and interest you have available to take your analysis forward. We will carry out a range of statistical analyses on the full data set and will share the results with you, so focus on what you need to know at an organisational level.
- 4. You can use suggestions in this column to help you explain and report on your findings for the benefit of other people in your organisation. For simple, high level messages we will provide *templates* in word, excel and powerpoint that allow you quickly to convert your findings in BOS into attractive reports.
- 5. Where we discuss **benchmarking** we mean comparing your percentage response rate for a particular question with the percentage for the rest of your sector (Tracker version). You do this in BOS using the benchmarking area.
- 6. Free text questions have been highlighted in the table as you will need to export this data for analysis in a different system to the other data even if that is just a text document. It can be daunting to analyse free text, but much of the value of the tracker data lies in these responses. We have asked clear questions ('What one thing...?') designed to elicit single, short answers. This creates text data that is relatively easy for you to code, count or categorise, and there is plenty of advice about doing this in the general Guide: Analysing your data. The trade-off is that learners who might have provided more complex responses do not get a chance to do so. Consider following up with focus groups, interviews, learner diaries or other qualitative techniques to elicit richer information and user-centred theories.



Question and key stakeholders	What does the data mean?
You and your digital	
Qs1-3 And any demographic (grouping) questions asked on the customisable section of your Tracker survey.	These are demographic (grouping) questions about age, gender, and stage of study. We recommend that you ask other demographic or grouping questions on the customisable page at the end of the Tracker survey. For example you may have asked students to define their curriculum area. You should use this data in exactly the same way as the data from Qs1-3. Where you have used different versions of the tracker (e.g. for HE students, FE students, online students) you can treat these as separate groups too. You can also use Q6 about health and disability issues as a grouping question. You can use grouping data to:
	• Check that your sample of responses is representative of your overall population in relation to these key demographics
	 Partition your data into groups according to age, gender, stage or mode of study (or curriculum area etc from your own grouping questions) to examine the experiences of these groups separately.
	 Test for any significant differences between different groups in their responses to other questions. Look out for the questions where we suggest this.
	• Compare your sample with the overall demographics for your sector: this can help to explain some of the differences you may find in other benchmarked responses
Q4 Personal access to digital devices	This is a <i>multiple response</i> question. Respondents tick all the boxes that apply to them.
Likely to be of interest to: >>> IT services >>> IT support teams >>> Learner representatives	The percentage of learners that have access to each kind of device can be visualised in BOS as a bar chart. You might want to <i>compare</i> access rates for different learner groups (see Qs 1-3). You can also <i>compare</i> these results with those for question 8. How does personal ownership and use relate to organisational provision? How do the findings support or challenge assumptions you are making as an institution e.g. in the context of a 'bring your own' strategy?
	Comparisons with other institutions are not always useful. What matters is whether your IT infrastructure and support services are aligned with what your learners are using. However, it is worth looking at data from the whole sector to understand trends in device ownership and use over time.



Question and key stakeholders	What does the data mean?
Q5 Personal ('in your own learning time') digital learning activities Likely to be of interest to: >> Teaching staff >> Senior teaching staff and curriculum managers >> Learning/academic support team >> e-learning team	This is a multiple choice, single response question where the answers can be treated as an ordinal scale, with 'weekly or more' as the highest level of activity, and 'never' as the lowest. We have used the phrase 'In your own learning time' to direct learners to think about those activities they do without explicit direction from course tutors.
	Each prompt (activity) can be treated as a separate question for the purposes of data analysis. You may find it useful to <i>compare</i> the 'weekly or more' scores across the different activities to get a picture of which digital activities are most and least prevalent as study habits.
	You might also want to compare different learner groups (see Qs1-3) to gain a picture of whether factors such as mode of study or subject area have an impact on the digital learning activities learners do regularly.
	You could create two new groups of respondents using <i>filters</i> or another partitioning method: one group that responded 'weekly or more' to all of the relevant activities, and one that responded 'never' to a significant number. You could <i>compare</i> their responses with the <i>norm</i> across a number of different questions, <i>hypothesising</i> that they constitute groups with contrasting habits (high/low levels of digital study activity). Finally, you might want to <i>benchmark</i> your 'weekly or more' scores to find out whether your learners are <i>significantly</i> more or less likely to undertake any digital learning activities than the sector norm. How would you account for any differences you find?
Q5a Preferred apps for learning	This is a <i>free text question</i> , designed to help you identify the digital tools and apps that your learners find most useful.
	One way you might <i>code</i> or <i>categorise</i> this data is to bring out the difference between tools that are in general use by your organisation, tools that are recommended for a specific course of study, and tools that learners have elected to use for themselves. Your response to supporting the use of these tools will be different in each case.
	You might also <i>group</i> this data by curriculum area to look for subject differences and to advise teaching staff and students accordingly.
Q6 Disability or health issue Likely to be of interest to:	This question allows you to separate learners into three groups so you can specifically explore the digital experiences of learners who identify as having a disability or health issue.
 Disability support/enablement team IT services Student services Anyone concerned with the student digital experience 	You might want to use the percentage of learners who fall into this group as a useful reminder of the variety of student experiences and of the need to consider accessibility and inclusion in all digital interventions. You could use it to check that your overall sample is representative, and includes an appropriate number of learners in this category. You might also want to partition (filter) this group of respondents and explore whether there are any significant differences from the norm in their responses to other questions (see Qs 1-3). Q20 can be used in a similar way.
	Only those students who answered 'yes' they do have a disability or health issue are directed to answer the two sub-questions that follow.



Question and key stakeholders	What does the data mean?
Q6a Support for assistive technologies	This is a <i>yes/no</i> question about access to support with assistive and adaptive technologies. It does not differentiate whether learners have asked for and not received support, or whether they have determined for themselves that support is not required. The data should not be used as a stand-alone metric but in the context of other data you collect from learners identifying as having a disability or health issue.
Q6b Preferred apps for assisted learning	This is a <i>free text question</i> , designed to help you identify the digital tools and apps that learners who identify as having a disability or health issue find useful.
	One way you might <i>code</i> or <i>categorise</i> this data is to bring out the difference between tools and apps recommended by your disabilities team, and those learners seem to have identified and adopted for themselves.
Digital at your Uni/College/Provider	
Q7 Access to networks/services and (FE/HE) fixed computing Likely to be of interest to:	This is a <i>multiple response</i> question. Respondents tick all the boxes that apply to them. Note that the options differ slightly in different versions of the tracker. Note also that this was a <i>yes/no/don't know</i> question in previous versions of the tracker, and you will have to remove all the 'don't' know' responses from previous data in order to make a <i>valid comparison</i> .
 IT services E-learning teams Library/learning resources Learner representatives 	This is a question you will almost certainly want to <i>benchmark</i> with other institutions in your sector. Where are you doing better than average, or worse? How do you account for lower scores? This is also a question on which you will want to feed back any planned changes to learners, showing that you are responding to their concerns.
	You may well have other data about student satisfaction with specific services that you can use to contextualise these responses. You can also look for relevant feedback in Qs11 and 12.
Q8 Provision of digital devices Likely to be of interest to:	This is a <i>multiple response</i> question. Respondents tick all the boxes that apply to them. It is a direct comparator to Q4 about personal access to devices. Note that response options differ slightly in different tracker versions.
 IT services IT support teams Learner representatives 	The percentage of learners that have access to each kind of device is visualised in BOS as a bar chart. You might want to <i>compare</i> access across different learner groups (see Qs 1-3). You can also <i>compare</i> the results here with those for question 4. How should organisational provision support any trends in student ownership of their own devices? How are you mitigating the effects of any digital disadvantage among some groups of learners?
	You may also want to benchmark your responses with other organisations in your sector (tracker version). But remember that your provision should relate to your learners' requirements rather than what others are doing. Look for relevant feedback in Qs11 and 12.



Question and key stakeholders	What does the data mean?
Q9 Organisational support Likely to be of interest to: > Senior managers > Student Union / Guild > IT and e-Learning teams > Student champions/ representatives > All w responsibility for student/learner experience	This is a <i>multiple choice, single response</i> question that produces data on a three-point <i>ordinal scale.</i> You can use ordinal scale statistical tests if you are experienced in these techniques. Otherwise you should treat each answer set discretely, using (for example) the number of students responding 'agree' to each prompt as your data point for comparison. You should not create a mean average response based on scoring the three points on the scale. Each prompt can be treated as a separate question for the purposes of data analysis. The question stem asks for agreement and the prompt statements are all positive ones. A higher level of agreement generally indicates a more positive experience. This approach is for your ease of analysis. It can lead to a slight positive bias, but the bias will be consistent across all respondents. You are quite likely to want to <i>benchmark</i> this data with the rest of your sector (tracker version). This question is also designed to be useful for year-on-year assessment. If you previously ran a version of the tracker with the optional questions on digital wellbeing, you will be able to <i>compare</i> responses to the equivalent prompts. Because of their popularity - and because of the strategic important of cybersafety and wellbeing - we have now included these in the mandatory question set. There is also a new prompt: 'My College/University/Provider supports me to use my own digital devices.'
 Q1o Sources of digital support Likely to be of interest to: Teaching staff Anyone concerned with student digital skills – library, curriculum teams, e-learning etc Student mentors and reps, and staff supporting them 	This is a <i>multiple choice, single response</i> question. This allows you to directly <i>compare</i> the percentage of respondents that nominate different people or resources as their main support for digital skills. It doesn't allow you to get a nuanced picture of individual support networks and practices (use <i>qualitative techniques</i> for this). It does allow you to gauge the relative importance of different aspects of provision. If students rely on tutors, are all tutors able to support them effectively? If they rely on online resources, are your own resources easy to find, reliable and up to date? If they rely on friends and family, could you put more support in place e.g. through student champions? You will probably want to <i>compare</i> respondent scores/percentages within this question before you carry out any other comparisons e.g. benchmarking. If you are carrying out further <i>statistical tests</i> you may want to <i>group</i> your respondents according to whether they look to other people or to online resources for support, and assess whether there are any other correlates with this factor.



Question and key stakeholders

Os 11 and 12 Student suggestions for improvement

Likely to be of interest to:

- Senior managers
- >> Teaching and curriculum staff
- Student representatives
- >> IT and e-Learning teams
- » All w responsibility for student/learner experience e.g. careers, library

What does the data mean?

These are free text questions, designed to elicit short, single answers. Our pilot institutions have found these questions to be highly actionable and useful. Some students write longer and more detailed answers in response to these prompts.

You are likely to want to analyse the content of these responses in some detail. You could consider using analysis software such as Nvivo for thematic qualitative analysis. Or you could use a simple coding and counting approach.

Keep responses to the two questions separate for analysis and reporting (though of course you can note common themes).

Note that some responses to Q12 will be posed in the negative ('Don't make all my classes online') while some will be posed in the positive ('Make all my classes online') but will mean the same thing, taking into account the negative framing of the question itself ('should NOT do'). You will need to code these answers carefully and you may have to discard some where the meaning is not clear: count these discards.

With both sets of data you will need to remove blanks, and you may also decide to remove responses such as 'nothing' or 'can't think of anything' or 'N/A' before further analysis. However, you should count the number of blank responses and the number of 'N/A' responses separately. In this situation, 'nothing' or equivalent could be taken to mean 'I am satisfied' or 'I don't have any concerns'. So these responses should be noted and included in reporting, but you should be cautious in how you interpret them.

Most other responses are likely to fall into one of two categories: related to learning and teaching or course issues, or related to the digital environment, infrastructure and provision (our two key metrics at Q13 and Q18). So you could separate the data into these categories before you do any further analysis. Different stakeholders might take separate responsibility for these two analyses.

Once coded it is helpful to assess the frequency with which different issues arise, and to summarise the key points. You should work with stakeholders to identify how they want to use the responses that are relevant to their responsibilities and interests. You could also consider using selected guotes, taking care that they reveal nothing about the respondent or their course of study.

Word clouds and similar are nice ways of presenting this data to stakeholders but they are not a substitute for engaging with the substance of learners' comments and for addressing the changes that learners want to see. This data set is a powerful resource for developing an action plan and for informing change. It can be used for reporting back to learners and other stakeholders on planned improvements.



Question and key stakeholders	What does the data mean?
Qu 13 Overall satisfaction with digital provision	This question uses a proven <i>likert scale</i> for eliciting user responses to a service. It is the first of two key metrics introduced to the tracker, the other being Q18. This metric concerns overall satisfaction with the digital environment and the provision of digital services and support.
Likely to be of interest to: >>> Senior managers >>> Student representatives >>> IT and e-learning teams	You can use these key metrics to test for <i>differences</i> across e.g. course type, faculty gender, and/or year group (see Qs 1-3) using a <i>non-parametric Kruskal-Wallis</i> statistical test. You can use either metric as a <i>factor</i> to test against each other and against other responses in a <i>single or multi-factoral analysis</i> . You can look for relevant feedback to contextualise these findings in Qs11 and 12.

Digital on your course

We use the phase 'on your course' because we find this is the clearest way to let students know we are asking about their experiences of learning, teaching and assessment, and that the focus is on required activities and not on their own private digital practices. These questions lend themselves well to examination and comparison after grouping your respondents into different curriculum areas (assuming you have asked this question). However, you will need to check again that your sample sizes are representative within each group if you want to draw strong and valid conclusions.

Q14 Digital course activities

Likely to be of interest to:

- >> Teaching staff
- Senior teaching staff and curriculum managers
- » Educational developers
- » e-learning team

This is a *multiple choice*, *single response* question where the answers can be treated as an *ordinal scale*, with 'weekly or more' as the highest level of activity, and 'never' as the lowest.

Each prompt (activity) can be treated as a separate question for the purpose of data analysis.

You may find it useful to compare the 'weekly or more' scores across the different activities to get a picture of which digital activities are most and least prevalent in teaching and learning practice.

You might also want to *group* your learners to get a picture of whether factors such as curriculum area or mode of study (online/face to face) have an impact on the number of digital learning activities they do regularly on their course. Note that your data does not tell you how well or confidently learners do these activities, only whether the activities are a routine aspect of their course experience.

You could use *filters* or other partitioning methods to create a group of respondents who responded 'weekly or more' to *all* of the relevant activities, and/or another group that responded 'never' to a significant number. You could compare the responses of these groups with the norm across a number of different questions (e.g. Q13), hypothesising that they constitute groups with contrasting levels (high/low) of digital course activity.

Finally, you might want to benchmark your 'weekly or more' scores to find out whether your learners have significantly higher or lower experiences of any course activities than the sector norm. How would you account for any differences you find?



Question and key stakeholders	What does the data mean?
O14a Preferred digital course activities Likely to be of interest to: >> Teaching staff >> Senior teaching staff and curriculum managers >> Educational developers >> e-learning team >> student representatives	This is a <i>free text question</i> , designed to help you identify those course activities that students find most useful. These findings can be very powerful for focusing change in digital teaching and assessment practice. Because it comes directly after Q14 – which gives examples of 'digital course activities' – student responses may in theory be biased towards these activities. In practice, however, we find that students give a very wide range of answers to this question. Care must be taken with coding subject-specialist responses as they may refer to specialised software or resources that are unfamiliar to a single coder. For example, many students report that they enjoy using simulations, but they are likely to refer to subject-specific examples. A coder that is unfamiliar with the examples will not pick up that there is a general trend to enjoy learning from simulations. This is a good reason for engaging an e-learning team with evaluating, reviewing, coding and/or counting items. They are likely to know the
, i	full range of software and resources in use, and have a natural interest in the findings of this question. You could compare responses to this question with those to Q5a. This will help you further to identify personal habits of digital learning as distinct from practices undertaken in courses of study.



Question and key stakeholders	What does the data mean?
Q15 The VLE Q16 Digital facilities Q17 Digital skills Likely to be of interest to: > Senior managers > Teaching and learning leads and curriculum managers > Educational developers > e-learning team > student representatives	These are all <i>multiple choice</i> , <i>single response</i> questions that produce data on a three-point <i>ordinal scale</i> . You can use ordinal scale statistical tests if you are experienced in these techniques. Otherwise you should treat each answer set discretely, using (for example) the number of students responding 'agree' to each prompt as your data point for comparison. You should not create a mean average response based on scoring the three points on the scale. Each prompt can be treated as a separate question for the purposes of data analysis. As with Q9, the question stems ask for agreement and the prompt statements are all positive ones. A higher level of agreement generally indicates a more positive experience. This approach is for your ease of analysis. It can lead to a slight positive bias, but the bias will be consistent across all respondents. You can easily <i>compare</i> scores within each question to pick out the issues where students tend <i>not</i> to agree. These may be critical areas for your attention when it comes to improving students' digital experience. Previous users have found it interesting to compare the results of 17.3 and 17.4.
	You are quite likely to want to <i>benchmark</i> this data with the rest of your sector (tracker version). These questions are also designed to be useful for year-on-year assessment. You might also want to use your <i>grouped data</i> (Qs 1-3 and 'curriculum area') to get a picture of whether these factors have an impact on learners' responses. In previous versions of the tracker, some of these questions appeared in different groupings and others were optional. Our mapping table allows you to find and compare your findings with any earlier data you collected. You will have to remove all 'don't know' responses from your earlier data before running any comparative tests. These questions are designed to provide clear, actionable data about priorities for improvement. You should look for confirmation in the qualitative feedback you collect from Qs 11 and 12.



Question and key stakeholders	What does the data mean?
Qu 18 Overall satisfaction with digital learning, teaching and assessment	This question uses a proven <i>likert scale</i> for eliciting user responses to a service. It is the second of two key metrics introduced to the tracker, the other being Q13. This metric concerns overall satisfaction with digital learning, teaching and assessment.
Likely to be of interest to: >> Senior managers >> Teaching and learning leads and curriculum managers >> Educational developers >> e-learning team >> student representatives	You can use these key metrics to test for <i>differences</i> across e.g. course type, faculty gender, and/or year group (see Qs 1-3) using a <i>non-parametric Kruskal-Wallis</i> statistical test. You can use either metric as a <i>factor</i> to test against each other and against other responses in a <i>single or multi-factoral analysis</i> . You can look for relevant feedback to contextualise these findings in Qs11 and 12.
Attitude to digital learning	



Question and key stakeholders	What does the data mean?
Qs 19 and 21 Positive / negative digital learning responses Likely to be of interest to: >> Teaching staff	These are both <i>multiple choice, single response</i> questions that produce data on a three-point <i>ordinal scale.</i> You can use ordinal scale statistical tests if you are experienced in these techniques. Otherwise you should treat each answer set discretely, using (for example) the number of students responding 'agree' to each prompt as your data point for comparison. You should not create a mean average response based on scoring the three points on the scale.
» Senior teaching staff and curriculum	Each prompt can be treated as a separate question for the purposes of data analysis.
managers >> Educational developers and researchers >>> e-learning team	These questions explore the different ways that learners say digital technology is of value to them (Q19) and different ways that learners say they struggle with digital technology in learning (Q21). They are useful for differentiating aspects of the digital learning experience, and not for assessing its value overall (as in Q18).
	Due to 'acquisition bias', learners are more inclined to agree with statements than to disagree. To mitigate this effect we have used statements about positive experiences in Q19 and statements about negative experiences in Q21. Both sets of statements use the same agreement scale. Because of the bias to agree, it can be more interesting to highlight where you have a high percentage of 'disagree' responses. Students who are motivated enough to disagree with a reasonable statement have a strong response against it. You could also explore these findings in more detail through focus groups.
	You could use <i>filters</i> or other partitioning methods to create two groups of respondents with very different attitudes, as shown by their tendency to agree/disagree with all the positive statements, or with all the negative statements. You could compare the responses of these groups with the norm across a number of different questions (e.g. Q18).
	If you want to compare your data with the same questions asked in earlier years, you will have to remove all 'don't know' responses from your earlier data first.
Q20 Independent / collaborative learning preference	This question allows you to separate learners into three groups according to a well-researched and relatively stable learning preference. You should not treat these groups as a scale.
Likely to be of interest to: ""> Teaching staff ""> Senior teaching staff and curriculum managers ""> Educational developers	You might use this data as proof of the variety of learning preferences, and the need for learning activities and assessments that support different approaches. You might also want to group your respondents and explore whether this difference corresponds with any other factors, for example with responses to prompts in Qs 15, 16, 17, 19 and 21.
	In previous versions of the tracker this question was only asked of online learners. Recent research suggest that it is also a factor in how learners respond to digital activities in face-to-face settings.



Question and key stakeholders	What does the data mean?
Q22 More / less digital learning preference	This new question is included because of a clear trend in responses to Q11 and Q12 (equivalents) in previous years. While learners are on the whole positive about the digital learning experiences they know, many appear to be anxious about digital learning in the future. In particular, they are concerned that digital learning may replace other learning experiences they value highly such as face-to-face contact with their lecturers.
	Responses to this question could be treated as an ordinal scale. You should not create a mean average response based on scoring the three points on the scale.
	Learners' responses to the digital agenda are influenced by many factors outside of their immediate experience. For these reasons, we strongly recommend that you explore the findings of this question in focus groups or consultations before drawing any clear conclusions about what learners want. You can also cross-reference your findings with free text responses to Qs 11 and 12.
	As with Qs 6 and 20, you might use this data as proof of the variety of learning preferences, and the need for learning activities and assessments that support different approaches. You might also want to group your respondents and explore whether this difference corresponds with any other factors, for example with responses to prompts in Qs 15, 16, 17, 19 and 21.
Q23 Curriculum area	This you will have pre-defined with response options that make sense in your context. To use this data, see the notes for Qs1-3
Other customisable questions	If you have designed questions that follow the pattern we have established, you should be able to use similar questions to provide a model for data analysis. For example, you might have introduced a number of related prompts under a single question stem ('How much do you agree?') with agree/neutral/disagree as response options (see Q9). And/or you might have asked students how regularly they use a number of institution-specific systems (see Q4).
	You will not be able to benchmark any of these questions. However, you will be able to download your data and analyse your findings in exactly the same way as with other questions, for example to compare the experiences of different groups of students, or as factors in factor analysis.