

Diagnostic assessments



a powerful tool in the L&D professional's training kit

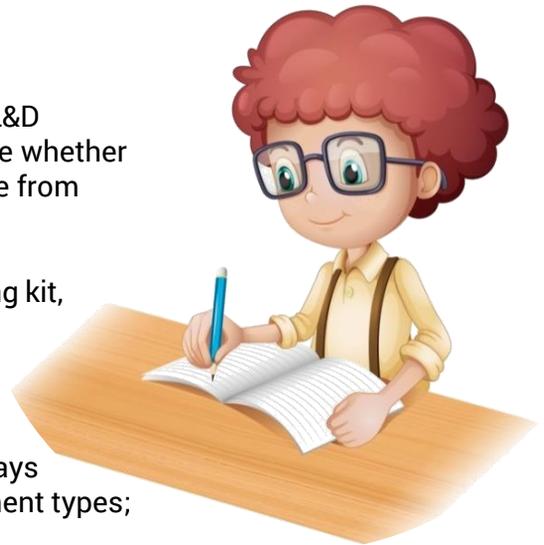
Introduction

Assessments are an integral part of training. Most L&D professionals use end-of-course assessments to see whether learners have gained the required level of knowledge from their training.

However, despite being a powerful tool in the training kit, far fewer use diagnostic assessments as a rule.

In this paper, we'll look at:

- what diagnostic assessments are, and the key ways in which they differ from other common assessment types;
- the ways in which they benefit learners, instructors and organisations;
- what you need to consider when designing an effective diagnostic assessment;
- how diagnostic assessments can help you create a personalised course.



What are diagnostic assessments?

There are several different assessment types, the most common of which are diagnostic assessments, formative assessments and summative assessments.



Diagnostic assessments do what the name suggests: they are used to diagnose each learner's strengths and weaknesses to enable trainers to provide targeted instruction.

They are taken **before** a course is begun and are independent of any other training courses that learners have previously completed.

Formative assessments are taken **during** a course. They allow knowledge gain to be measured as the course progresses, and give trainers the opportunity to change the emphasis of the course as it goes on.

Formative assessments are most commonly used in educational or more comprehensive training situations, as they require significant time investment from trainers and administrators.



Summative assessments are taken after a course has been completed, and look only at what has been learnt in that course.

This is the most commonly used assessment type, and is familiar to learners, trainers and organisations.

Unlike diagnostic and formative assessments, summative assessments don't provide an opportunity for the course to be personalised or tailored for students: they only look at end-of-course results.

These assessment types aren't mutually exclusive. Used together, they can provide an extensive and comprehensive system of course tailoring and continuous feedback that benefits the whole organisation.



What are the benefits of diagnostic assessments?

Using diagnostic assessments effectively can provide benefits for learners, trainers and the organisation as a whole. Diagnostic assessments benefit different groups in different ways.

Learners

Diagnostic assessments offer a host of benefits to learners. Here are some of the most common ones:

- Learners have the opportunity to review and analyse their existing knowledge before embarking on a training programme. It's all too easy for learners to over or underestimate their knowledge level. Diagnostic assessments ensure that they have a realistic picture of their current level of knowledge, which helps them get more out of the training.
- Learners find out what they should focus on during the training programme. Online courses are often designed as 'one size fits all'. Diagnostic assessments let learners find out or confirm which areas they already have a sound understanding of, enabling them to hone in on the areas where they have knowledge gaps. This has the benefit of potentially reducing seat time. If learners are shown to have a good knowledge in one area, they don't need to spend much time reviewing it (or perhaps no time at all!).



- Learners have the opportunity to follow a personalised learning path. Diagnostic assessments can be used to provide learners with a structured plan for following the course. The more sophisticated the assessment and e-learning course, the more flexibility there is to build a personalised learning pathway that reduces seat time and increases engagement.
- Learners could receive credit for existing knowledge. Diagnostic assessments are popular with learners in the education sector as they can progress to higher course levels by demonstrating existing knowledge. The same principles can be applied within organisations to allow learners faster progression.

Instructors

Common benefits to instructors include:

- They are able to gauge the knowledge level of learners prior to course commencement. This ensures that instead of re-treading old and well-known ground, trainers can make sure that learners focus their study efforts on those areas where they need to improve their knowledge or skill.
- They can use the information gathered through diagnostic assessments to shape course changes in the future. Instructors often use summative assessment results to find out whether their courses are providing learners with the right level of knowledge. If they aren't, the instructor will redesign their course. Diagnostic assessments can be used in a similar way, by identifying any consistent gaps or strong topics of knowledge among learners before they begin the course. Instructors then have the opportunity to modify the course accordingly, to improve the efficiency of the course.
- They can increase learner engagement and success by providing a more tailored experience for learners. An instructor's ultimate goal is to create well-trained colleagues within an organisation. In our recent paper, 'Engagement and Motivation: what makes learners learn?' we talk about the importance of engaging and motivating learners for success. Diagnostic assessments can help L&D professionals to do that.



Organisations

Diagnostic assessments have clear benefits to organisations, too:

- They enable organisations to measure the return on investment (ROI) of their training programmes. Earlier, we mentioned that different assessment types could be combined for improved outcomes. One example is the combination of diagnostic assessments with summative assessments.

The following scenario shows how:

- A large organisation commissioned a new training programme on performance management. The programme included a summative assessment, but no diagnostic assessment. Results were very positive, with many colleagues scoring 80-100% at the end of the course.
- One of the internal L&D team thought it would be interesting to find out how much learners already knew before embarking on the course. They added a diagnostic assessment that reflected the topics covered in the summative assessment.
- The results were eye opening. Colleagues also scored very highly in the diagnostic assessment, with a general range of 70-90%. This showed that even though learners scored very well at the end of the course, they'd started with a high level of knowledge. What looked like a great ROI turned out to be relatively small.
- The organisation used this information to improve their process for course commissioning. In the future, they spent more time on training needs analysis and small focus groups to make sure that every course had a clear benefit.
- Organisations can use diagnostic assessments to review the existing knowledge of both new-to-role and established colleagues, and use this to shape work support and personal development plans. This provides clear financial benefits to the organisation: colleagues don't have to take time-consuming courses that don't improve their knowledge or skills, and their development can be targeted specifically to their weaker areas, lowering the overall spend on L&D whilst improving its effectiveness.



Designing effective diagnostic assessments

We've established that there are many benefits for learners, instructors and organisations in general. So how do you go about creating an effective diagnostic assessment?

The first and most important thing to remember is that all the general guidelines for writing good questions and creating effective summative assessments apply.



For example, that means that multiple-choice questions should include appropriate distractors, and that the assessment should only include questions on the learning points that will be covered in the course. A good range of high quality questions that are then reflected in the summative assessment will set you on the path to success.

But before you start writing your assessment, there are several additional points you need to consider.

How do you plan to use the assessment?

As you've seen, organisations can use diagnostic assessments in different ways. If you're looking to design a course that focuses on the benefits to the learner, for example through course personalisation, you'll go about it differently to an assessment in which you are only looking to measure ROI. Ask yourself if you are learner or business oriented before you start – this will help you in your planning stages.

How much time and money do you want to invest?

Before you start, think of your monetary and human resource budget. Remember that you don't only have to think of the cost of writing the assessment, but how much time it will take to use the assessment effectively.

For example, if you gather a lot of detailed information, do you have someone who can analyse it? If not, think about how that information is going to be used. Will it be available to learners to look at in detail and draw their own conclusions? Are you using the assessment to measure the effectiveness of the training? Will you use the results to guide later training initiatives? These can be good reasons for investing in a detailed assessment.

Some successful diagnostic assessments are short; others are comprehensive and detailed. Thinking carefully about your budget will maximise your investment.

How is your course being delivered?

This is a key consideration: online courses and blended courses have different scopes for assessment use. If you have some face-to-face sessions, you might have the opportunity to address individual results, or tailor later parts of the programme to your general findings from the diagnostic assessment.

However, if the course is online only, it must be designed to provide learners with the required information and any flexibility without instructor interaction. This can be challenging. We'll look at considerations for this later in the paper.

How much content do you have?

We've said that a short diagnostic assessment can be successful. However, when designing your assessment think about the length of the course. If it's a 15-minute refresher module, you might decide that a diagnostic assessment doesn't have as much value – the extra time it takes to design, administer and take the assessment may outweigh potential benefits. Decide whether you can group multiple modules together – this could provide a straightforward solution.

Long courses, on the other hand, may require substantial diagnostic assessments for their value to be maximised. A good assessment will usually test each learning point more than once, so if you have a very long course, you might find that this could overwhelm learners. A solution here might be to section the course according to shorter topics, each of which could have its own diagnostic assessment.

Does the learning have to tick a regulatory box?

Regulatory training poses challenges for organisation, instructors and learners. Frequently, there is a legal requirement for organisations to demonstrate that learners have completed a course.

This can mean that you have less flexibility in how you use diagnostic assessments. You might need to demonstrate that learners have looked at every section, even if the diagnostic assessment shows that the learner has a firm grasp of the topic. If you have to demonstrate that a course has been completed for regulatory purposes, course personalisation may not be possible.

This doesn't mean that diagnostic assessments shouldn't be used in regulatory training – it just means that additional care needs to be taken when designing them.

How flexible can you be?

A key benefit of diagnostic assessments is enabling learners to be flexible in how they approach the course. Knowing how far you can take this flexibility is important, as we've just discussed in the context of regulatory training. If the course is internally mandated, are you confident in allowing learners to miss sections of the training if they demonstrate competence in a diagnostic assessment? Deciding this will help guide you in planning the outcomes of the diagnostic assessment.

How rigorous should the assessment be?

This ties in to the previous question. Will learners be able to skip parts of the course based on their assessment results – or even skip the course altogether? If so, a more extensive and rigorous assessment may well be in order, to demonstrate to the organisation that the learner already has the knowledge and skills required. If not, a more relaxed diagnostic assessment might be just as appropriate.

Similarly, will you rate previous training initiatives and coaching on the results of the diagnostic assessment? If you are using diagnostic assessments to review your wider L&D or managerial support, it's important that you gather the required amount of detail.

Taking the time to think about each of these considerations will help you design the most appropriate diagnostic assessment for your situation.

Using diagnostic assessments to help create a personalised course

Much research has been done on how to engage and motivate learners with the aim of improving outcomes. One of the techniques identified is course personalisation.



Diagnostic assessments provide an excellent opportunity for courses to be personalised based on each learner's unique knowledge level. Not only does the learner benefit from a tailored learning path, their learning time is maximised for effectiveness.

This immediately improves learner perception of a course: rather than spending equal time on all sections, irrespective of prior knowledge, learners can focus only on the areas that require their attention. At the same time, learners feel more connected to the course.

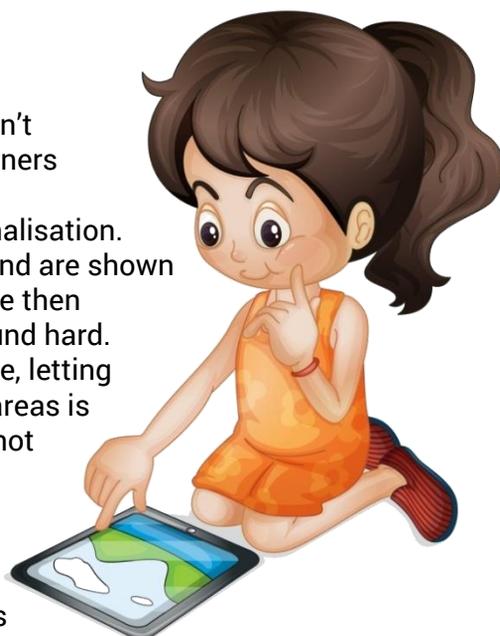
They recognise that it's tailored to their particular situation and is no longer a 'one size fits all' solution. This personal connection improves engagement and improves learner outcomes.

So how can diagnostic assessments be used to personalise courses? Regardless of your budget, technical capability or course delivery mechanism, there are ways in which you can achieve personalisation.

Online-only courses

Sometimes, an organisation's learning software doesn't support complex course tailoring. In other cases, learners must review all topics for regulatory purposes. These challenges don't prevent some level of course personalisation. In the simplest cases, learners find out their results and are shown which answer corresponds to each topic. Learners are then advised to give most focus to the topics that they found hard. Whilst all learners are presented with the same course, letting learners know their stronger and weaker knowledge areas is empowering, and provides a level of personalisation not present in courses without a diagnostic assessment.

A more sophisticated option presents learners with a more detailed and personal results page, followed by a recommended learning path. This solution works well when learners are presented with a more comprehensive diagnostic assessment: rather than simply indicating when a learner has got a question right or wrong, the results page could show percentages for each learning topic, giving learners a much clearer idea of their existing knowledge levels. Instead of leaving interpretation up to the learner, a more detailed recommended learning path can be offered, adding a deeper level of personalisation.



In some cases, organisations have the flexibility and technical capability to offer a truly personalised course. A sophisticated diagnostic assessment enables learners to be shown a highly tailored course, where topics are included or excluded based on their results. This level of personalisation is not always possible or appropriate; but when it is, the result is a course that moves away from the 'one size fits all' approach and offers learners a bespoke training experience.

Blended courses

By adding an instructor to the mix, blended solutions can offer additional levels of flexibility. Diagnostic assessments can be offered either online or offline, depending on the question-types most appropriate to the topic. Instructors can then review all the results of the diagnostic assessments prior to course commencement, to identify patterns that will affect the offline syllabus. Rather than amending the course after its completion, instructors have the opportunity to make changes immediately to address any immediate problem areas. Learners can be made aware of these changes, which once again demonstrates a level of personalisation.

Depending on the available resources, individual attention can be given to learners who demonstrate knowledge gaps. Where immediate support isn't possible, learners can be offered supplementary coaching by experienced colleagues. Once again, this offers learners a personal touch that can improve their learning outcomes.

Conclusion

As you've seen, diagnostic assessments can require significant planning to ensure their success – more planning than summative assessments. L&D professionals should think carefully about what they want to achieve by using diagnostic assessments, as this will help shape their design and use.

However, using them effectively offers significant benefits throughout your organisation. They are a powerful tool in the L&D professional's training kit. Used well, they can benefit the learner, instructor and organisation. They can be a great way to personalise your courses, improving learner motivation and learning outcomes.

Whether you want to empower learners to follow a training path that takes into account their own strengths and weaknesses, or you're interested in finding out how much of a difference a new training initiative has made, diagnostic assessments can provide an excellent solution.



If you have any questions or would like to get in touch please call us on 01773 864640 or email info@walkgrove.co.uk.