

Objective course design

Barry Johnson and Mandy Geal



Key learning points

- The main design elements that make a course design objective.

Introduction

This article aims to give you an objective view of course design. The training we are considering here is training to meet specific job requirements. Whether we are designing a course for a double-decker bus driver, or a Boeing 747 airline pilot, the elements of design are the same. What has to be learned by each participant may vary enormously in content and complexity, but the systematic approach and elements of the design are common to both.

Is the training really necessary?

Having conducted a Training Needs Analysis, a manager may have specified who needs to be trained for what (see *Guiding managers in Training Needs Analysis*, Issue 24). For example, the manager may identify that there is insufficient first-aid cover in parts of the business. You

check this across the organisation and find that it is not an isolated case. You have established a training need but, as a trainer, you also need to know the exact purpose of having people with these skills for the business – that is, why the training is necessary.¹ Is it a lack of skill that will impair delivery and impact the bottom line, or is it to meet a requirement that, if not met, will put the organisation in legal jeopardy? Being clear about the **purpose and pay-off** of the training gives you the business reason and, therefore, the justification for the training, as well as a context within which to operate. You know how important and how urgent it is or whether it is just 'a good idea'.

Job performance requirement

We know why the training is necessary; what we need now is the job performance requirement (JPR).

The JPR is determined by conducting a **task analysis**. A task analysis is the specification of all the overt and covert

behaviour involved in the performance of the job, in this case, the job element of a first-aid. The two key approaches to this are as follows:

- 1 **Interview analysis**
Interviewing experts and specialists concerning the JPRs.
- 2 **Observational task analysis**
Observing a skilled worker doing the job.

The process of design

Course design² follows an iterative process. The generalised steps are:

- establish why the learning is necessary
- specify job performance requirement (JPR)
- identify the target population
- identify the entry-level performance (ELP)
- create course objectives
- develop criterion tests
- develop the learning strategy
- design the learning elements of the course
- conduct a pilot.

Learning time

Given the specified terminal behaviour expected of the person, and given the time for the course, we could work back and say, 'To meet those objectives in that timeframe the person must be able to do "this" and "this" and "this" at the start of the course' – or we can say 'This is the known set of course objectives, and this is the known ELP, so this is the learning time required for the course'.

We therefore have three factors:

- 1 ELP
- 2 Course objectives
- 3 Learning time.

We need a minimum of any two to determine the third.

The alternative is to run an open-ended course and have people stay on the course until they meet the terminal behaviours. We have met a form of this option when training airline cabin crew. They don't fly until they have met the requirements.

In many companies we have met great resistance to excluding people because they don't meet the ELP.

The usual situation is that some people don't meet some of the course objectives and, in the totality of courses run, only a minority uses criterion tests. So why is there this emphasis on objectives? We think it is because most of us believe it is what we should do. Unfortunately, few of us do it to the total professional standards that we could achieve.

Target population

The target population is the group of people for which the training has been designed. Suppose the target population is software development team

leaders. Why specify the target population? When the course is designed, all the content and methods must have **face validity** for the participants. Examples from Josephine's Biscuit Factory won't do for this population.

Other target population factors should influence design. For example, a group of senior managers may require exactly the same skills as a group of team leaders. The skills may be the same, but the context of application and the organisational perspective of the participants may be very different. The more the methods and content in achieving the objectives match the target population, the better.

Methods

The subject of methods stretches far beyond the space available in this short article. The factors noted above should be a prime determinant of the methods to be used. However, two other factors strongly influence the design. One is the preferred trainer style and the other is the culture and expectations of the learners. These are dealt with in *Trainer styles*, Issue 31.

Conclusion

Much in course design is subjective. We have briefly explored the objective factors used in a systematic approach to course design.

References

- 1 R. F. Mager, *Preparing Instructional Objectives*, Jaico Publishing House, 2005.
- 2 W. Dick, L. M. Carey and J. O. Carey, *The Systematic Design of Instruction*, Allyn and Bacon, 2004.

Authors

Barry E. Johnson BA MCMI MCIPD and Mandy Geal BA are directors of LEARNINGpartners Ltd. Both Mandy and Barry have considerable business experience. Barry was the senior manager responsible for training, resourcing and development in Europe for a global company before joining LEARNINGpartners. He operated training on a 'zero budget basis'. Mandy was the MD of her own software house before becoming a founding director of LEARNINGpartners Ltd.
Telephone: 01279 423294 • E-mail: info@learningpartners.co.uk • Website: www.learningpartners.co.uk

We suggest that both are necessary. The subject matter experts (SMEs) are essential in helping to determine the course objectives. In our specific example, one SME may be an occupational health nurse. We now know what the first-aider does on the job, so we have the foundation upon which we can design the course.

Do we have to be SMEs ourselves? This is a contentious question. We have designed courses in which we are not SMEs, but we are experts in course design. We have designed courses where we have been SMEs. We have seen courses designed by SMEs who are not skilled in course design and which have not delivered the required outcomes. Our conclusion is that, if you are a skilled designer, you do not have to be an SME, but it helps.

The next key question is, what elements of the JPRs can be delivered off the job, and what elements build from the course on the job or can only be effectively learned on the job? The task analysis should have given you a solid view of this. We are firmly of the opinion that an off-the-job course is only a part of the training for skilled performance.

Course objectives

In order to design an effective course, we need to specify the objectives (see *Meeting the business need*, Issue 26). That is probably self-evident – or is it? Having objectives presents advantages to both the trainer and the trainee. They help the trainer determine what content should be included and where they should put most emphasis. In the same way, the trainee knows what they will be able to do at the completion of the course. Note ‘will be able to do’ and ‘completion of the course’. We are trainers. For us, training is ensuring that people can meet their job requirements. So we will expect our double-decker bus

drivers to *be able* to state the height of their buses, as this will form part of their decision-making process when approaching a low bridge. What they will be able to do is use the information when making the decision to go under the bridge safely. The other point about ‘will be able to do’ is that unless they have done it, how can they show they have met the objective? In reality, there are some things we can’t do on a course. That means they can’t be course objectives.



“what elements of the JPRs can be delivered off the job, and what elements build from the course on the job or can only be effectively learned on the job?”

The course objectives have three elements:

- 1 **Terms** that identify the activity to be performed (**terminal behaviour**).
- 2 **Standards** that indicate how well the learner is to perform.
- 3 **Conditions** or circumstances under which the performance is to be completed.

Each of the objectives must therefore be specific, observable and measurable within the conditions specified. Some terms used may be too general or vague and need to be broken down or qualified. The implication for the designer is that the course objectives should be exhaustive. Those given to the trainee may be less comprehensive and only include the main terminal objectives.

We can distinguish between the terminal objectives and **interim or sub-objectives**. Interim objectives are activities or information that may be valuable or essential to the terminal objectives.

Example of interim objective: *Asked to state the height of the bus (condition), the bus driver will be able to state the height of the bus in imperial and metric measurements (verbal terminal behaviour) accurately every time they are asked (standard).*

This interim objective is essential to the terminal behavioural decision-making when the bus driver is approaching the low bridge.

It is useful to stress the type of performance called for by the course objective. Is it something that the person will say or write – that is, a **verbal objective** – or is it something the person will do physically – a **motor performance objective**? There are other types of objectives we shall not consider here, such as **affective objectives**, **discrimination objectives** and **cognitive objectives**.

Criterion and achievement tests

We have said that course objectives are what the learners will be able to do at the completion of the course. The **criterion test** is the validation of the learning, and that gives us further information on the effectiveness of the training. Of course, if participants are not



“Being clear about the purpose and pay-off of the training gives you the business reason and, therefore, the justification ... as well as a context within which to operate”

meeting the required standard, we have only the course design and the trainer to look at. (See *Objective testing*, Issue 16.)

The issue is whether the **criterion test** tests the objective. Suppose the terminal behaviour of an objective is: ‘The trainee will be able to repair the punctured inner tube of a tyre’. Is the following a valid criterion test of that terminal behaviour? ‘Describe, step by step, how to repair a flat tyre’.

Clearly not; that somebody can *describe* a set of actions does not mean they can actually *do* it. Not only that, repairing a flat tyre requires more actions than

repairing a punctured inner tube. Putting together the criterion test items may cause the course objectives to be modified to meet what is achievable on a course.

Participants should be tested to ensure that they meet the course objectives. After all, would you go to a dentist who was not qualified to conduct the actions required to fill one of your teeth? Specific objectives can be tested by one test item. Generic objectives will require a number of items.

We now know exactly what the participant will learn and how we, as trainers, will test that they have learned it. By analysing the

results across a number of trainees, we can validate the training and change it to ensure all the objectives are met.

Criterion tests can also be applied to ensure that the members of the target population nominated to attend the course can meet the required entry-level performance (ELP).

Entry-level performance

ELP refers to the level of skill and knowledge the trainees bring with them at the beginning of the course. Why is this important? Before an airline pilot starts training to fly a Boeing 747, they will already have been awarded a number of certificates in the art and science of flying an aeroplane, including a pilot’s licence that requires them to fly an aeroplane using navigational aids, meteorology, theory of flight and other such subjects. In short, without a proven base level of skill and knowledge, the training on the big jet cannot begin. Imagine a situation in which trainees range from some with no knowledge and skill through to those that have hundreds of hours’ experience on a similar big jet. Those with the experience will be wasting their time and will cost the airline huge amounts of time and money. Those that do not meet the base level will not benefit from the training either, and will also waste the airline’s time and money.

Off-the-job training is expensive. Not only is there the cost of the trainer, training facility and so on; there is the loss of productive contribution of the people while they are away from the job. (See *Calculating the return on training investment*, Issue 5). Only if the improvement in performance on the job offsets the training investment is training valid.