

Learning and teaching in action

Learning about learning

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Introduction

This *Learning and Teaching in Action* feature has over the last few years looked at many different facets of teaching, such as how to evaluate the teacher through reflection¹ and how to make an induction session interactive² and it has considered many aspects of information literacy^{3–5}. In this issue, the feature goes back to basics and examines how people learn. Is that not the key to any successful training session? Teaching should start and finish with the learner at the centre of the process.

Learning does not only take place in an education setting and it is not always traditionally qualified teachers that provide the stimuli for learning. This feature uses the scenario of learning in a National Health Service (NHS) hospital setting. It will identify the learning process, specifically looking at the different ways in which people learn. It will examine and discuss the key learning theories and identify key aspects that should be taken into account when setting goals for learning.

A typical participant?

Of the participants who choose to attend training sessions which are delivered by the library, their occupations vary greatly and, as such, there is not a ready definable set of characteristics that they all share. Table 1 shows a list of typical participants that may attend library training sessions, with a summary of their characteristics, qualifications and possible motivations for attending. This diversity of participant means that a typical training session will have to cover a wide range of areas and take into account a range of learning abilities. When these motivations are mapped to orientations of learning, the participants attending library training sessions can, and inevitably do, fall into any of three categories: goal orientated, learning

orientated or activity orientated. This means participants will experience the same training sessions in different ways. For example, on the one hand, the goal-orientated human resources (HR) manager will only want to learn the tasks that are relevant to them whilst they are completing their MA and will possibly not use the skills that they have learnt once they have completed their study. On the other hand, the learning-orientated occupational therapist, who is attending for their own professional development, will be interested in all aspects of the session because they are keen to develop their skills generally. An activity-orientated secretary, who is not traditionally academic and needs to learn to enable them to complete their daily work, will want to learn the practical parts of the library training so that they can then complete their work tasks. These differences will affect how they interact with one another and the skills being taught and learnt.

Within the individual sessions themselves, each participant's interests and motivation to learn will be unique to their own circumstances and cannot be generalized within one kind of occupation or from one kind of occupation to another. These varieties in qualifications, intrinsic characteristics and motivation have an impact on the planning and development of the content and delivery of training sessions.

A database searching session, whilst not compulsory, is likely to be beneficial to the staff who attend. These participants are on the whole voluntary learners, a key motivational aspect which they all share and they come with an intention to learn.⁷ Coupled with this desire to learn are expectations; Reece and Walker⁸ note that adult learners expect:

- to be taught and learn;
- to have to work in the session to gain the skills they need;
- that the skills being taught is related their vocation;
- to be treated as adults.

The participants that come to library training sessions fit all four of these categories.

Table 1 Summary of learners and their characteristics taken from bookings on previous training sessions; mapped to orientations of learning⁶

Occupation	Qualifications	Characteristics	Motivation for attending	Orientation of learning
Secretary	No formal qualifications	Willing to learn but has not got much confidence	Interested in seeing how to best utilize the Internet	Activity orientated
Physiotherapist	First degree	Has not been in formal education for a long time	Manager recommend it as part of appraisal process	Goal orientated
Occupational therapist	First degree	Straight from university	Own identification as part of continuing professional development	Learning orientated
Dietician	First degree	Regularly uses the Internet	The interface has changed since they last used it	Learning orientated
HR manager	Currently completing second degree	Very busy—not much time to learn although recognizes that they need to	Undertaking MA and needs to be able to find literature on a given subject	Goal orientated
Nurse	Vocational learning	No confidence and is not very keen on computers	Currently undertaking degree and is not confident using computers	Goal orientated
Educational facilitator (also qualified nurse)	First degree	Not overly confident with the Internet	To be able to find information that is reliable to pass on to patients in seminars	Learning orientated
Library staff	Used to be a nurse	Needs to learn for work-related purposes; perhaps knows some of the required elements already	To be able to search for information effectively for library users	Learning orientated
Junior doctor	First degree and has passed some of their consultancy exams	Very confident with using computers	English not first language and is not completely confident with resources that are available within the NHS	Learning orientated

HR, human resources; MA, Master of Arts; NHS, National Health Service.

Which learning theory is correct?

The way in which participants learn is not clear-cut: there have been many theories developed to try to encapsulate learning. These have been split into three distinct groups: behaviourist, cognitive and humanist.⁷ By exploring these theories in turn, and illustrating them with examples from a typical library training session, key elements can be identified to gain a better insight into how to teach participants.

Behaviourist learning

Rogers⁷ summarizes behaviourist learning theories by explaining that the teacher is at the centre of the

lesson. It is the role of the teacher to show the correct stimuli and response required to achieve the desired behaviour pattern. Key psychologists in this school of thought are Thorndike and Skinner who used instrumental learning to make animals learn how to perform actions to achieve rewards.⁹ In this case, learning is carried out through repetition and using a step-by-step process to achieve the desired result.¹⁰ It has also been noted that, in behaviourist learning theories, recognition in the form of praise is required so that learners know when they are on the right track.

In the case of library training, there are many instances where this step-by-step process is valuable in teaching a set of skills to participants. This

could be how to perform a search in a database or how to access and use the library catalogue to search for a book. By telling and showing how this is performed and getting participants to then follow and repeat the actions until they are confident that they can search and get results on their own, one can be sure that the learning has taken place. These behaviourist learning theories do not allow for subject-specific development.

Cognitive learning theories

Cognitive learning theories allow learners to develop an understanding of the subject that they are studying and as such are useful in library training; for example, when participants are formulating a search question a more in-depth thought is required. Choosing the elements to appear in each search question will be unique, therefore they cannot follow a set or pattern to do this. Similarly, when participants are asked to formulate a decision-making matrix relating to evaluating levels of information, for example, it is not enough that they copy a given example because it will not be relevant to their own subject. Rogers⁷ describes cognitive theories as being subject centred and where the brain needs 'active engagement in the learning process'.^{7 p.98} Participants need active participation to understand what they are learning and then be able to apply it back to their own examples. It is not enough that the teacher explains the skill or subject to be learnt—they need to experience it for themselves.¹⁰

This is especially true in library training, where some training sessions are based around using computers to access the Internet and specific online literature databases, the latter of which can involve quite complex instructions. If the trainer stands at the front of the room and tells participants which buttons to press and do not let them practice, they would not understand and most likely forget what to do. Instead, a process whereby participants follow actively on computers at the same time as a demonstration and then practise to internalize on their own will mean that they can remember what they have learnt. A further example of active participation is group work, whereby participants can 'have a go' at the skills or subject being described. Piaget, a key psychologist in this area, believes

that activity is what shapes the mind and make it possible to remember what has been learnt.¹¹

Humanist approach

Whilst activity is a key element in the learning process, it is important that the participants get out of the session the best experience possible. This can be achieved by making sure that the learner is at the centre of the lesson, known as the humanist approach.⁷ By the learner controlling what and how they learn, they will get the most out of the session and ultimately develop and reach their full potential. Maslow is the most widely quoted psychologist in this school of thought. He believes that people have needs on a number of different levels and each level must be satisfied before true fulfilment can be reached.¹⁰ Figure 1 considers Maslow's hierarchy of needs and relates it to some aspects of library training. It is clear that, by employing a variety of methods throughout the training process, from the booking of the course to the completion and issuing of certificates, it will ultimately allow for personal development and self actualization.

It can be summarized that, to ensure learners can reach the top of the tier and achieve self actualization, this should be carried out through the learning activities chosen. Plenty of interaction between the participants and trainer in library training sessions will facilitate this.

From the discussion around learning theories, it is clear that one learning theory should not be used in isolation. Instead, by combining the relevant parts of each theory to form the basis of training sessions, it will allow for participant differences and will bring out the best in everyone.

Setting objectives for learning

Bloom believes that there are three kinds of learning, and that it exists in different domains, the cognitive (knowledge), the affective (attitude) and the psychomotor (skills).¹² Each domain then has categories of increasing levels of difficulty where different tasks can be accomplished. Good objectives should seek to be a combination of all of the three domains to account for learning differences as 'apparently simple tasks require a

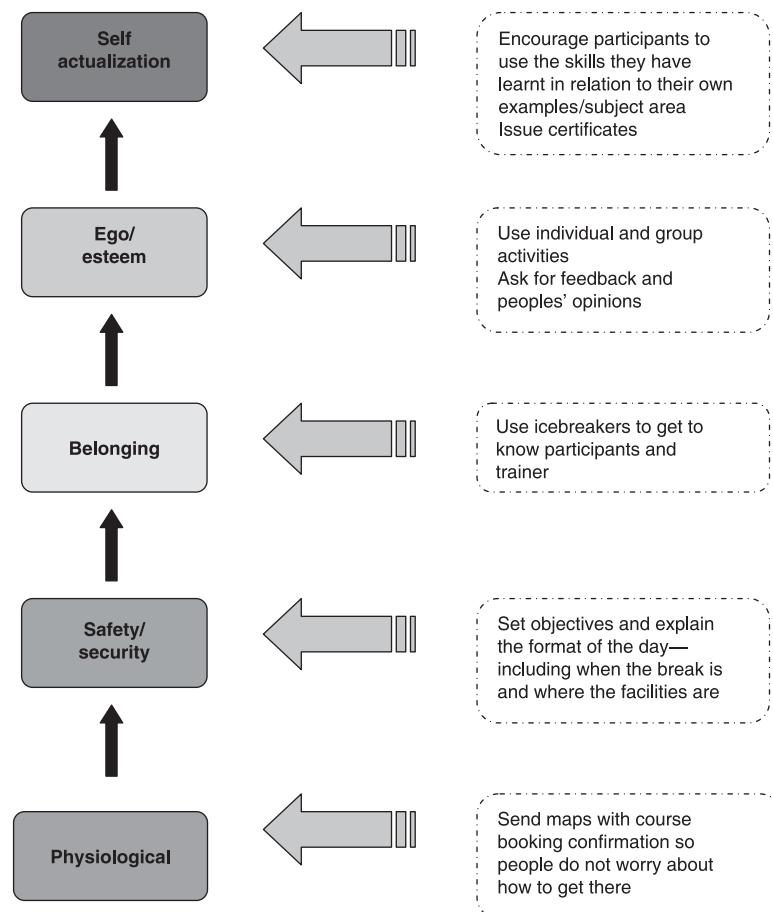


Figure 1 Hierarchy of needs in relation to library training sessions

complex mix of skills from the different domains'.⁹ Objectives that are set in training sessions should range from being simplistic, which appear at the bottom levels in the three different domains, and work their way up the spectrum in the domains of increasing difficulty which require more thought and internalization.⁸ If the librarian is able to see a learner for more than one session, Bloom's taxonomy could be consulted to ensure that there is progression from the initial easier sessions to relatively more difficult sessions.¹³

An example of this could be something quite simple in an introductory training session; for example, 'Know how to access the library and understand how to use the library effectively'. In the cognitive domain, from the bottom level, knowledge is required so that participants can recognize that they need to use the library catalogue to search for a book title. In the affective domain, participants would be expected to respond by

having the confidence to come to the library and ask for the information that they need and not just go without. This can also be translated into the psychomotor domain, whereby participants imitate the action of looking up a book on the catalogue; they have already observed how to perform a simple search and now they are repeating it.

A further example of the application of Bloom's taxonomy, covering the increasingly difficult aspects of the three domains, is from a more advanced training session, for example, 'To understand the purpose of critical appraisal and to critically appraise research using the appropriate tools'. From the cognitive domain, the highest level is needed because participants will have to evaluate for themselves the positive and negative aspects of an article. They will have to organize their thoughts so that they can apply rules that they have learnt about the different types of studies that are carried out when they are critically appraising

an article. It is expected that, over time, the way in which articles are appraised will become automatic, which is the top level of the psychomotor domain; participants will be required to utilize a number of skills, from reading and understanding an article, to understanding the principles of different kinds of studies, to being able to judge whether they are useful or not.

Summary

From the above discussion, it is clear that there is no right or wrong answer as to how a lesson should be planned and carried out. In the case of library training sessions, with a virtually unknown intake of participants, the preparation and delivery of the session is likely to be different every time. There is no typical participant, but a good lesson will draw from the combination of the learning theories and pick out the most suitable elements for each session so to be applicable for every type of learner.

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