

(unpublished document)

**Plan and deliver
effective learning opportunities**

Gabriele Mallapaty

March 1999

Introduction

This report is based on the analysis of two training events carried out at primary health care (PHC) laboratory units ([See attachment 1](#) and [attachment 2](#)). The first is a structured, work-based training session, supported by a handout. The second, is an on-the-job technical skill training, supported by standard operation procedures and an external trainer.

When planning and delivering learning opportunities for PHC laboratory personnel, it is important to note that very often only one person is in charge of a PHC laboratory, or the person shares his or her duty with other staff at alternate hours. Usually the direct supervisor is a medical doctor, who has very little technical knowledge on the subject of laboratory technology. Supervision is very difficult when the supervisor has only theoretical knowledge but not the technical skill to carry out the task. Furthermore, the staff of a peripheral health laboratory is responsible for the management functions while simultaneously being in charge of the routine laboratory work.

Identifying learning needs and learning outcomes

In the past, knowledge, skill and attitude necessary to work at a PHC laboratory were acquired at college courses or at universities with little or no additional training provided during the entire working life. Today, with a rapid change in technology and ever-higher demand for cost containment and total quality service, further training and learning in the workplace have become a necessity. Furthermore, more often than not, initial professional training is inadequate and does not sufficiently prepare graduates for managerial functions and independent work at PHC laboratory units.

Training needs are abundant, the challenge for the trainer is to identify and promote relevant learning that is of use to the learners and provides value for money to the organisation. As Spinks and Clements (1993) point out, the experienced facilitator, as enabler of learning, requires learning to be relevant, significant and meaningful to the learner at every stage of the facilitative process. It should make sense and be of use to the learner in everyday situations, such as in the workplace.

Both the training events were based on clearly identified training needs. For the first learning opportunity on the use and maintenance of the microscope, pre-course communication with the learner was established. The informal meeting between the learner and the facilitator helped to clarify aims and objectives for the training and provided the first step in establishing a fruitful learning relationship. For the second learning opportunity, pre-training learning relationship between the learner and the trainer was missing.

Truelove (1992) sees motivation as an important part in the learning process and points out, that adults very much want to be involved in the learning process. For future

similar training provisions, informal pre-course discussions with the learner to outline the learning objectives and the facilitation approach could lead to higher levels of motivation and better learning outcomes. Especially for the second learning event, which focuses on skill training and learning by doing, we should consider Truelove's (1992, p174) point as he describes adult learners:

“They relate new learning to what they already know. If they are allowed to have a say in the design and content of their learning, then their commitment will be higher than if it is imposed on them.”

Empowered and motivated learners will be more likely to apply the newly acquired skills to other areas in the workplace and in this way are able to expand their abilities more independently in the future.

Target setting and planning the training process

In an ideal situation, target setting and planning the training process should be done prior to the training event with involvement of the facilitator, the learner and a supervisor or sponsor of the training. In the real world, this is seldom done, especially when training is provided in less developed countries, where training needs are enormous and resources are very limited. As pointed out by Rogers(1992), in developing countries adult education is more based on nationally identified needs, rather than on individual wants.

Facilitators of learning in the PHC field in developing countries will always face the challenge of striking a balance between the organization's view of each person's learning needs, the learner's personal assessment of those needs and available training resources. Spinks and Clements(1993) provide some guidance as they recommend discussing the broader areas of training needs with the training sponsor linked with an agreement that the specific learning needs within the subject area will be solicited from the learners.

Setting learning objectives that are SMART (Stewart, 1993,p.33): Specific, Measurable, Achievable, Realistic and Time-bound, is part of the target setting process. The two events had well defined learning objectives that were communicated to the learner. What was missing was a linkage of the objectives to other areas in the workplace. The facilitator and the learner could establish a dialogue of 'knowledge transfer' to other areas to provide motivation and direction for future learning. According to Hale (1993, p.18), target setting in the workplace has to go a step further, it should:

“..provide an opportunity to link development of skills and knowledge directly to the specific job of employees. By discussing and agreeing areas of priority for further attention it is possible to provide a framework for continuous improvement.”

For example, for the second learning opportunity, the facilitator taught how to perform the skill of reagent and stain preparation or microscopic examination of a specimen. In order to provide a framework for continuous improvement and knowledge transfer, the experienced facilitator could encourage the learner to link those newly acquired skills to other areas in the workplace, where similar skills are required.

Training method

As pointed out earlier, training needs for PHC laboratory personnel are ever increasing, resources are limited and graduates often bring knowledge but lack practical skills and attitude to take up independent work at the peripheral laboratory units. This problem is well highlighted by Wills(1993, p.230):

“Another reason for poor learning transfer is the difference, and sudden transition, between the classroom and work environment. The classroom can be compared to a gymnasium; its purpose is to develop skills. Work is like the sporting event; the skills have to be used, in a complex environment, to produce results. An athlete works out in the gym, practises on the field, and then enters a competition. No athlete would go straight from the gym to the Olympics. Yet this is what we do with our students. We give them the skills, send them back to work, and expect them to perform like champions.”

The main task of a trainer for PHC laboratory staff is to find effective ways to teach skills and change attitudes. Abbatt(1980) suggests, that for teaching skills to PHC workers, ideally theory and practice should be taught together, supported by written instructions that are based on a task analysis. The workplace is the ideal environment for such a training method. Furthermore, Bennett (1994, p39) points out that trainees usually perceive on-the-job instruction as immediately and directly relevant to their work. However, he also highlights the problems with work-based training such as quality of training, incompetent instructor, workflow interruption and unsuitable learning environment.

Coaching was the method of training for both learning opportunities. The training was work-based on a person to person basis. Rae(1993) admits that coaching as a method of training is commended more than it is practised, while stating:

“It may be that coaching is more expensive in resource time than a course, but there can be little doubt that, because of its direct work relationship, its impact can be greater.”

According to the learners' feedback, the method of coaching was useful as they were able to follow the demonstration in the workplace and practise the newly acquired skills in their familiar work environment. Questions were answered on the spot and

problems were solved while the facilitator was present. Trainees also indicated that they found the written instructions very helpful.

For future similar training events, more attention could be given to improving presentation skills and by incorporating more open ended questions to check understanding and further learning. For example, as a facilitator, I have the tendency to talk, while demonstrating the task. Whereas, Stewart(1993, pp.125-128) points out that effective demonstration depends on a number of stages, which are designed to enable the learner to 'do it right' the first time he or she attempts the task. He suggests the following stages:

Stage 1: Introduction. *Introduce the session by stating the objective and describe the process.*

Stage 2: Positioning. *Position the learner at your side or behind you, so that they see the demonstration from your perspective.*

Stage 3: First Demonstration. *Carry out the demonstration at normal speed and without speaking.*

Stage 4: Second Demonstration. *Carry out the demonstration with pauses to explain and emphasize key points.*

Stage 5: Third Demonstration. *Carry out the demonstration in stages with full explanation of each and re-emphasizing key points.*

Stage 6: Learner Description. *Request the learner to describe what you should do and how you should do it as you carry out the task for a fourth time. This stage enables you to check learner understanding.*

Stage 7: Learner Attempt. *This final stage is for the learner to carry out the task. Observe them doing it so you can provide feedback and correct errors if necessary.*

Validation of the training

At the end of any training we need a method of ensuring that the effort has met the desired result. Did the training meet its aims and objectives? Did the learners see the training as an enjoyable and motivating experience? The written quiz at the end of first learning provision provided an immediate check of learning outcomes. The quiz was useful to assess what the learner knew at the end of the training session. However, it could not show whether the learner was able to transfer the skills and knowledge to improve daily work routine. Inspection visits by an experienced staff or the facilitator few weeks after the training event could provide evidence of knowledge and skill transfer in the future.

For the second learning provision, learning outcome was measured by the facilitators' subjective observation of learners' performance of newly acquired skills. This practice is concerned solely with validation of learning outcomes immediately after the training. What was missing is to validate the achievement of learning outcomes against

learning objectives days or weeks after the training. An effective method to evaluate improved and sustained performance could be external quality control procedures, under which the trainee has to examine a selection of random positive and negative sample specimens at monthly intervals and report back the results to higher authorities. This could also support teaching best practices and right attitudes. As Abbatt(1980) points out, teaching attitudes is especially important where trainees work in isolated places and where close supervision is lacking.

Future improvements

For future training needs assessments, health planners must find ways to establish a framework for continuous improvement in the workplace. Before developing the workplace as a learning environment it is important to adequately teach students at colleges and universities with knowledge and skills that are easily transferable to the workplace. Therefore, continuous improvement in the workplace would have to start with curriculum development.

It could be useful to develop the curriculum in line with the “competence based” vocational training in the UK, where the NCVQ’s role is to implement a national system for vocational qualifications and to determine national standards of occupational competence (Bennett, 1994, p52). Furthermore, Will (1993, p233) points out:

NVQs can be used to help both learning transfer and evaluation of the course. NVQs measure a person’s effectiveness in the workplace rather than in the artificial environment of the classroom. A course provides the background skills and knowledge that allow a person to demonstrate competence in the workplace.

If you design a course so it is consistent with NVQs you have an automatic link with the workplace. The skills are practised, managers function as mentors, and competence is assessed.

In such a system, the job specification would include a description of the competencies needed to perform the job and a detailed list of tasks based on a task analysis. The laboratory staff require broad practical skills in the daily work routine. He or she must carry out several tasks following well-defined procedures. Written standard operation procedures can guide and support trainees during and after a training event.

Conclusion

Training and knowledge expansion has become a necessity. Adult learners expect learning to be meaningful and relevant to their work and are better motivated if they are involved in the learning process. The facilitator of learning in the PHC laboratory field must find appropriate methods to teach practical skills and change attitudes. At the

same time, training has to be based on nationally identified needs and provide value for money to the organisation.

On-the-job coaching as a training method, though more expensive in resource time than a course, seems an appropriate method in the PHC laboratory setting, especially because of its direct work relationship. Supported by written standard operation procedures, its impact can be even more significant.

Bibliography & References

- ABBATT, F.R. (1980) *Teaching for Better Learning: a Guide for Teachers of Primary Health Care Staff*. Geneva. World Health Organisation.
- BENNETT, ROGER (1994) *Managing People, 2nd ed*. London. Kogan Page.
- BROOKFIELD, STEPHEN (1986) *Understanding and Facilitating Adult Learning.* Milton Keynes. Open University Press.
- DAWNS, SYLVIA (1992) in TRUELOVE, STEVE et.al. *Handbook of Training and Development./edited by Steve Truelove*. Oxford. Blackwell.
- HALE, RICHARD (1993) *How to Introduce Target Setting A Guide for Trainers and Managers*. London. Kogan Page.
- MERRIAM, SHARON B. and CUNNINGHAM, PHYLLIS M. (1990) *Handbook of Adult and Continuing Education*. San Francisco. Jossey-Bass.
- RAE, LESLIE (1993) *Techniques of Training. A guide for managers and practitioners. 2nd Rev.ed*. Hampshire. Gower.
- ROGERS, ALAN. (1992) *Adult learning for development*. London. Cassell.
- SPINKS, TONY & CLEMENTS PHIL (1993) *A Practical Guide to Facilitation Skills A Real-World Approach*. London. Kogan Page.
- STEWART, JIM (1993) *Speed Training, Systems for Learning in Times of Rapid Change*. London. Kogan Page.
- TRUELOVE, STEVE. et al. (1992) *Handbook of Training and Development./edited by Steve Truelove*. Oxford. Blackwell.
- WILLS, MIKE (1993) *Managing the Training Process, Putting the basics into practice*. London. McGraw-Hill.

Attachment 1

Three hours work-based, structured training session:

Introduction

One week before the training the head of the primary health care centre pointed out that he believes microscopic test procedures performed at the laboratory were not accurate and reliable. He further mentioned that he had gone recently to the laboratory and wanted to examine a stool sample in question by himself and found the microscope not clean giving a very blurt image. After our introductory discussion, he accompanied me to the laboratory and introduced me to the laboratory assistant.

I sensed that the laboratory assistant was somewhat uneasy and worried. I tried to break the ice by requesting him to show me around his laboratory and to explain what test procedure he was doing. While he was showing me the microscope, I asked if he thought the microscope was of good quality and if he was confident using the microscope. Following a short discussion, we agreed that I would come back Wednesday afternoon, which is the least busy part of the week and that I would show him how he could make better use of the microscope.

For a primary health care laboratory unit the microscope is a very important and expensive equipment. Many test procedures carried out at the laboratory require microscopic examination of specimens. It is imperative that the laboratory assistant feels confident using the microscope and always have the microscope in good working order.

The training plan

<i>Aim:</i>
Enable PHC unit staff to use the microscope and understand the need for cleaning and preventive maintenance.
<i>Objectives:</i>
By the end of the session the learners will be able to:
➤ Describe the various parts of the microscope
➤ Centre the stage of the microscope
➤ Use the microscope for the examination of specimens
➤ Clean the different parts of the microscope
➤ Change the bulb of the microscope

<i>Method of training:</i>
Work-based, individual training session, supported by printed handouts and end of session quiz.

<i>Required learning resources:</i>
The microscope with spare bulbs, handouts, a quiz at the end of the session.

<i>Sessions</i>	<i>Content of Sessions</i>	<i>Resources</i>	<i>Time</i>
<i>Introduction to the parts of the microscope</i>	The trainer identifies parts and explains use of each part. Followed by practical	Handout	45 mins
		Break	5 mins
<i>Centring of the microscope stage</i>	Demonstration followed by practical	Handout	45 mins
		Break	5 mins
<i>Examination of three specimens</i>	Guided practical session	Specimens	30 mins
<i>Changing microscope bulb</i>	Demonstration followed by practical	Spare bulb	15 mins
		Break	5 mins
<i>Cleaning of the microscope</i>	Demonstration followed by practical	Handouts Cleaning material	30 mins
<i>End of session quiz</i>	Feedback on learning outcome.	Quiz sheet	15 mins

Attachment 2

On-the-job technical skill training, conducted by an external trainer:

Introduction

The training was carried out as part of a technical skill expansion programme for PHC laboratory staff. In many PHC laboratories sputum examination for tuberculosis screening is not done as a routine.

I conducted the training as an external trainer, who visited the PHC laboratory unit for one day to conduct the on-the-job technical training sessions. The trainees knew about the timing of the training and were given a copy of the standard operation procedure before the training. However, I did not meet with the trainees before the training session. The training was carried out in five PHC units over a period of three weeks.

The training plan

<i>Aim:</i>
Enable PHC unit staff to examine sputum samples for Tuberculosis screening.
<i>Objectives:</i>
By the end of the session the learner will be able to: <ul style="list-style-type: none">➤ Understand the importance of proper sample collection and storage.➤ Observe the appearance of the sputum.➤ Prepare sputum smear.➤ Stain the sputum smear by Ziehl Neelsen technique.➤ Examine the smear microscopically for AFB.➤ Understand biosafety procedures.➤ Prepare stains and reagents.
<i>Method of training:</i>
On the job, coaching sessions to teach technical skill, supported by standard operation procedures.
<i>Required learning resources:</i>
Work-based training, which requires all necessary items to carry out the test procedure, such as a microscope, sputum specimens, stains, reagents, etc.
<i>Timing:</i>
One day in-service training session.

