waterlines

Technical Brief No.53: Training

Water and sanitation facilities will only be sustainable if there are enough competent people to plan, construct, operate, maintain and manage them. Training is a critical factor; this technical brief looks at key elements in its effective provision.

What is training?

Training is the systematic development of knowledge, skills and attitudes (KSA) required to work effectively. Training aims to change behaviour. It is an agent of change.

For example, water-supply operators with limited skills and knowledge in water treatment can, through training, be made aware of the importance of variations in raw-water quality, and become motivated and skilled to act to ensure the supply of safe drinking-water.

The training process

Knowledge and skill on their own will not lead to changed behaviour unless accompanied by motivation and a supportive environment.

Responsibility for the effectiveness of training is shared by the individual, the organization, and the trainers. The term 'organization' can be interpreted broadly, e.g. a government department, an aid agency, or a community management structure.

The individual

- needs motivation and the ability to take advantage of training

The organization

- ensures training matches needs
- provides suitable climate to motivate trainee
- ensures conditions exist to utilize newly acquired knowledge and skills

The trainers

- provide the opportunities for learning to take place

Trainers may be from within the organization or from an external agency. They may not be designated 'trainers' within an organization, but could be managers with motivation and enthusiasm to promote learning.

Training is not an isolated activity

Training is not an isolated activity of instruction. It should be a cyclical process with distinct stages, as shown overleaf.

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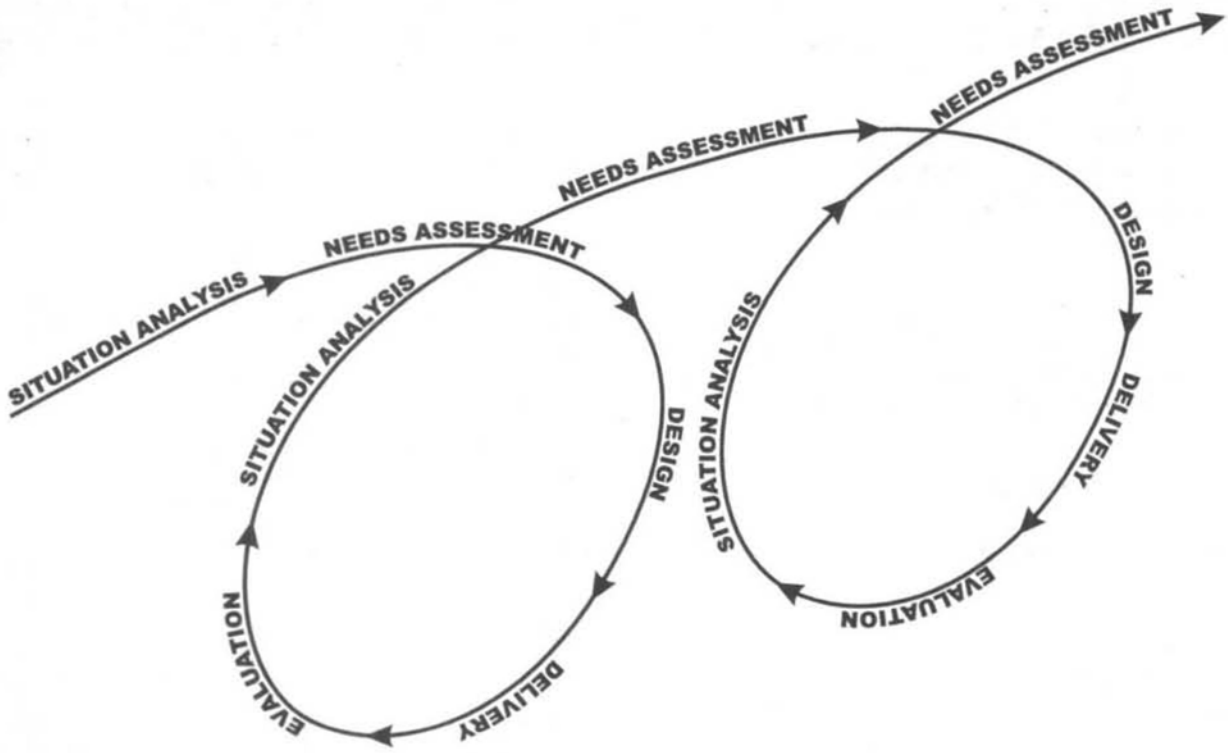
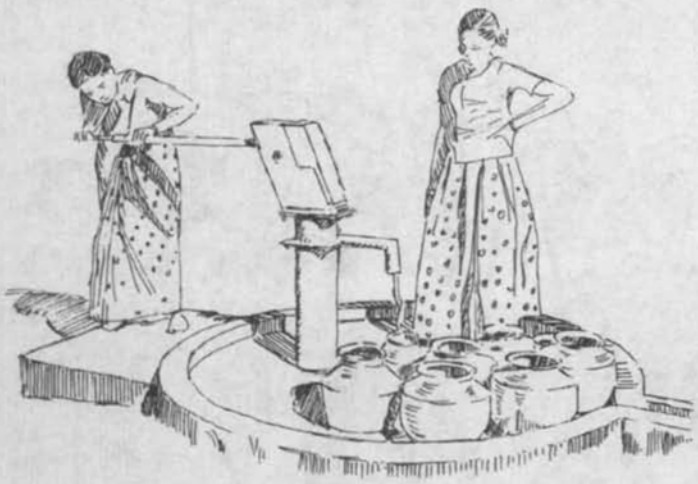


Figure 1. The Training Cycle

Situation analysis

Training should not be for training's sake. There should be clearly identified reasons for training, based on an analysis of a community's or an organization's situation. Do problems exist? Can they be solved by training? A pump caretaker may be well-trained but, without spare parts, she cannot be effective.



Common problems related to work performance, and how training might help, include:

- Increasing knowledge to overcome misunderstandings
- Skills training to overcome a lack in this area
- Supporting individuals, through training, to motivate and develop attitudes

Training-needs assessment

Training should be based on clearly identified needs. Training-needs assessment involves the collection and analysis of information related to the work required to be done. With this information, decisions can be made on:

- *who* needs training
- *how many* people need training
- *what kind* of training is required and to what standard

Assumptions based on occupational labels should be avoided. It is necessary to establish the actual work required to be done in each situation. The label 'pipefitter', for example, is very broad and it may be misleading because it can be interpreted differently by different people. Is a pipefitter someone who installs domestic plumbing or someone who lays large-bore main pipelines? An assessment should identify the actual work involved in the pipefitter's job.

Once the tasks required to accomplish a job have been determined, compare the requirements with the knowledge, skills and attitudes of the available personnel. You can then identify any gaps between the attributes required and the competence of existing personnel. There are three possible outcomes of this assessment:

- If the gaps can be eliminated through training, the assessment results can be used as the basis for designing a training programme.

- If the gaps are great, then it may be necessary to recruit new, trained and competent staff.
- In some cases, where neither of the above options is feasible, it may be necessary to re-assess the broader strategy — for example, if the technology chosen is appropriate to local circumstances.

Time, funds and expertise may restrict the depth and detail of analysis. It is unusual to 'get it absolutely right' first time. So take a staged approach. Carry out a needs assessment, do some training, evaluate its effectiveness, assess needs again and further develop the training.

Training design

The training-needs assessment is used to establish aims and objectives based on the identified gaps in knowledge, skills and attitudes.

- An aim is an overall goal or statement of intent, for example, to increase the effectiveness of community water managers.
- General objectives describe what someone should know, understand, or appreciate at the end of a training session.
- Specific objectives clearly identify what participants will be able to do as an outcome of a training activity. For example, 'at the end of the session, participants will be able to assemble correctly a centrifugal pump'. Specific objectives are used to assess participants' performance: can they or can they not assemble a centrifugal pump?

A training session is designed around a general objective and a series of specific objectives.

Training methods

I hear, I forget
I see, I remember
I do, I understand

Chinese proverb

Participatory methods of training — in which people communicate with each other and learn by doing — are likely to be much more effective than one-way lecturing. Here is a selection of participatory training methods:

- *Buzz groups* — discussion in small groups on a particular topic, allowing everyone to be involved. Findings can be reported back to the whole group.
- *Brainstorming* — quickly generates ideas and responses which can be discussed after the brainstorm.
- *Case study* — trainer's presentation of an event or situation which participants discussed afterwards.
- *Role play* — participants act out a real-life situation, sometimes taking on an unfamiliar role.
- *Simulation* — a combination of case study and role play in which participants take on roles within a given scenario. Participants learn through their experience and analysis of the situation. De-briefing is an important part of the process.
- *Demonstration and practice* — participants observe a practical demonstration and then practise under close supervision.

Where and when should training take place?

Venue and timing can be crucial. Training in the workplace has its advantages:

- no trainee concerns about the expense, effort and time in travelling
- training specific to the circumstances of the trainees
- performance can be assessed in the work situation

But training in the workplace can also be distracting. A venue remote from the work environment allows participants to focus fully on the training, and share experiences with people from other organizations. Sharing experience, and establishing contacts and networks is an important aspect of training.

The importance of timing will vary but it must suit the participants if they are to attend and concentrate.

Who will do the training?

Competent individuals are often recruited from within an organization or community and trained as trainers. External agencies with experienced trainers may be required to assist in the development of training skills.

Training delivery

Training is 'delivered' through training sessions, courses and programmes. The manner of delivery can determine effectiveness. Trainees need to be relaxed and open to participation. This means avoiding a top-down 'expert' approach. A trainer is a facilitator of learning, providing opportunities for participants to learn through experience, and to grow in confidence.

People are individuals, and learn individually, even in a group. To support each individual, a trainer needs to establish a rapport by:

- having a genuine interest in each trainee
- encouraging and enthusing
- involving everyone (trainers and trainees)
- ensuring that s/he can be clearly understood by everyone

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Training-course evaluation

The trainees, trainers, and managers all want to know if the training has been effective:

- were the objectives of filling the gaps in knowledge, skills and attitudes achieved?
- were participants satisfied with the training?
- was the training cost-effective?

There are several ways of assessing effectiveness, and a combination of methods may be used:

- questionnaires
- trainee presentations
- practical demonstrations

Impact evaluation

The final test of the effectiveness of training is whether what has been learned is applied in practice. To evaluate impact:

- assess work performance before training
- assess work performance after training

Information collected at the training-needs assessment stage, before training, can be useful at the evaluation stage.

The training process is not static. It should be one of continuous development. Situations change, and training itself is an agent of change. Evaluation results feed into the design of future training and so the training cycle continues.

On-the-job training

On-the-job training often relies on the assumed abilities of those involved in the hope that learning will take place, but with little thought given to how this should happen. In this situation the trainee is as likely to learn bad as good habits; the training must be planned.

Coaching is one method of planned on-the-job training. The trained coach (supervisor or counterpart) sets tasks and assignments, monitors progress, assesses performance and gives feedback. This is done within a planned framework.

Further reading

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