"If you think training is expensive, try ignorance." - Derek Bok, Harvard University

Training is perhaps the most well known way of improving ways of working. With any change, new technology or new organization, those affected can be offered training to equip them to make the most of the changes.

What it is for:	To provide the necessary knowledge to those required to adopt new ways off working
When to introduce	1. When changes to ways of working are anticipated 2. When new staff have to learn existing ways of working
When to use	2. above is ongoing.
When not to use	NA

The expense and effectiveness of training, and training capability varies widely depending on circumstances and type. There are several distinct categories of training:

- Courses
- Mentoring/Apprenticeship
- On the Job
- Other – Briefing, DIY, CBT, Quiz

Courses: Training courses are what most people will think of when discussing training. Courses have a high profile; they can be intrusive or disruptive to routine work, and so get attention, and can be very effective, but this is not invariably true. They can also be expensive, time consuming and difficult to schedule. Public and commercial training courses are attractive, deliberately so – they must be marketed and sold, and require no investment in the development of the materials by those buying places for attendees.

Their weaknesses are applicability and potentially, quality. Public course are necessarily intended for a wide audience. Unless the material is well suited to the organization's and attendees' needs their effectiveness can be limited. Public course are valuable for gaining an overview or introduction to industry standard methods or models. Public course are useful when an organization is moving to a new technology or platform and needs some 'pump

priming' to get started. Of less value are public courses intended to equip individuals with professional skills. These courses, while educational, must necessarily be generic, and cannot be closely fitted to the organization's particular needs or working practices.

'In house' training course delivered by professional trainers from outside the organization usually involves tailoring the material to the organization's needs. There will be a cost to this. In house training developed and delivered within the organization, by the organization's own staff has the advantages that the development of the material itself is an opportunity for education and training of those developing the training materials and that the material will be fitted well to the organization, and owned by it. However there is a possibility that the material may be limited or inward looking if no review or survey of industry best practice is undertaken during development. When developed the material is available as required, with no dependence on external schedules or trainers. In house course are the best, and only option for induction courses for those new to the organization. (Induction course are also particularly useful as a documented and high profile baseline for the organization's norms and standards.)

Mentoring: The option of Mentoring and Apprenticeship will depend on the culture of the organization. Whereas courses are universally recognized as a training option mentoring is a less well known or may not be recognized or supported. Mentoring requires experienced members of staff being willing and available to guide and offer advice on the performance of work to the less experienced colleagues. The recipient is an 'apprentice' guided by the mentor. (Apprentices usually worked for a 'master' but this type of terminology is unlikely to be acceptable now. The term apprentice is problematic too. Most software developers consider themselves professionals and few would want to be considered an apprentice. When considering mentoring an alternative term, perhaps with a little self conscious irony?, for the beneficiary of the mentoring should be used, perhaps chela, tyro or disciple?)

To be effective the mentor should be a respected professional with broad experience of professional working practices to be able to provide access to a substantial body of knowledge in a coherent manner. Avoid 'gurus' as mentors. A guru's knowledge is limited to narrow technical domains or limited application areas or technologies. What is required is a broad knowledge. A candidate mentor will have a track record within the organization, be respected as a professional; professional qualification or certification (beyond college degree level) is another useful indicator of a potential mentor's capability.

The apprentice need not be a novice, simply someone new to the organization, or department, or role who will benefit from access to someone who knows how things work in practice.

The benefit of a mentor /apprentice approach is that the information is available as required and not constrained by the arbitrary limited of a scoped training course. The mentor will communicate the norms and values of the organization as well as technical information and views. The limitation is the number and availability of mentors, and their commitment to the role of mentor. It also depends on a reasonable working relationship between the mentor and apprentice.

Where a mentor/apprentice approach is adopted records of the relationship including start and finish dates (eighteen months is a good duration for a formal mentor/apprentice relationship) should be maintained. At the end of the formal period of mentoring both parties should record their views. Of course the personal relationship may extend well beyond the formal period.

On The Job Training: On the job training has many of the characteristics of mentoring. The expectation is that when knowledge is required to perform work the person needing to know will ask. This requires firstly that it is acceptable to ask questions and to seek advice, and secondly that someone is willing and able to answer; on the job training is sometimes known as 'Ask Nelly'. There is a potential pitfall. Technical staff are valued for their knowledge. In some organizations asking questions can be seen as a sign of weakness or indicate a lack of competence or be a sign of ignorance. This is false but this is of little comfort if asking questions is perceived as an admission of failure. On the job training will only work in organizations were people are free to ask questions – even the apparently stupid questions which often reveal the unstated and unconscious assumptions within the organization.

The characteristics of on the job training are no constraints on the questions asked and no constraints on who asks questions and who answers them. Everyone can learn and everyone can teach. Learning and improved working can become pervasive. On the job training can be seen as a cheap option or a poor relation to more formal education and training programmes but in organizations that encourage openness and learning this is far from the case.

Others: There are many other approaches to education and training [1]. Regular, scheduled briefings can keep people aware of new developments or topics of interest, although the quality of these needs to be maintained if people are to continue to take notice. People's attention at briefings must be earned. Do-it-yourself training, perhaps via computer-based materials may have value although only the self motivated will benefit from this. A novel

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[1] Education is the delivery of knowledge and information. Training is the teaching of a skill. The educated know; the trained do.

approach is lunchtime quizzes with technical issues as the topics. Professional seminars and conferences are another source, but the quality of these can be highly variable.

Many of the other process improvement tools have learning as a secondary effect. By carefully selecting participants the processes of conducting TCM, PW, DevPIP or PIRs all learning is encourages as people to share experience and work collaboratively.

The process for undertaking training is:

1. Needs Analysis: Determine what the training is for – to change beliefs, expectations, behaviour, to introduce new skills, improve professionalism… Identify and size the target audience. This need not be limited to technical staff; senior managers may benefit from education too. Is the training required as an ongoing resource – for example as induction training – or a one-time event – for example as the organization moves from one technology to another. When performing a needs analysis the motivations of the target audience should be considered. In one organization training may be prized as a scarce commodity; technical staff may prize training as a means of keeping current; in another training may be seen as a rebuke or indicator of poor performance needing remedial action. Management may be particularly sensitive to the hidden message that training gives.

2. Select Type: With needs identified select appropriate type of training (or education). Select courses for one off injections of knowledge; perhaps mentoring as a sustained drive for improved performance. Budget constraints and availability of staff will also influence the selection - is it feasible to send technical staff for a public three-day course

3. Source Training: Identify sources of training, evaluate suppliers for external or public courses, perhaps send someone on a public course to evaluate its applicability and quality. For internal training courses source and review training materials, identify trainers, rehearse courses. Where no materials are available schedule their development. (These should be based on actual practice or incremental improvements on actual practice. Do not attempt radical change through training based on the state of the art.) For mentoring identify and brief candidate mentors. For on the job training identify candidate sources of know how (it may be useful to explicitly identify 'people worth talking to' - but this tooshould be considered carefully for potential unanticipated side effects).

4. Schedule Training. For courses the arrangements and negotiation for the optimal time and venue should be started at least two or three months before the expected delivery dates. Drop

out from course varies from organization to organization. It can be as high as 50%. If the level of drop out is greater than, say, 25% it is necessary to find out why. If it is not due to unavoidable schedule clashes the value and appropriateness of courses should be reviewed.

5. Deliver: The delivery of courses should be planned with adequate facilities and designed to make the experience positive for both trainer and trained. Poor logistics or management can impair the effectiveness of the course and leave a bad impression that has nothing to do with the topic or the materials. For mentoring or on the job training delivery is a matter of access. The mentor, or Nelly, is available and actively willing to offer guidance or direction.

6.Evaluate: The value of training course should be assessed with a questionnaire administered after the course. This should be left until at least a week or two after the completion of the course and performed for those commissioning the course – not the course providers. Course providers routinely have an evaluation form completed at the end of the course. This is more in the nature of a customer satisfaction survey. The evaluation is not to determine customer satisfaction but course effectiveness and is left so that responses can be more objective. It should focus on the effectiveness of the course in delivering the right information and skills rather than the enjoyment of the course or the skills of the presenters.

Mentoring and on the job training should be evaluated with periodic (six monthly) customer satisfaction style surveys.

7. Records: Maintain records of training courses; subject, who attended them, effectiveness etc, and of the training received by staff as part of an organizational 'skills inventory'. The skills inventory need not be limited to training records but attempt to capture a broad picture of individual's skills, capabilities, interests and intentions. This should be widely available so that required skills do not go unused. It is irritating to find that someone with the skills or motivation required was available, if only you had known.

Related tools: See Skills Recognition (T – 5).