USING EXPERIENTIAL, ACCELERATED AND BRAIN-FRIENDLY METHODS IN THE DESIGN AND DELIVERY OF TECHNICAL TRAINING

RSVP EXPERIENTIAL LEARNING DESIGN

Tips and techniques for technical trainers: delivering more active, learner-centred learning

SHOULD I CHANGE THE WAY I'VE ALWAYS DELIVERED MY TRAINING?

Learning is, in itself, a process of change . It is about being able to choose and use appropriate knowledge, ways of thinking, behaviours and skills in appropriate contexts to achieve desired results. Learning is a process of growth, and the ability to learn well allows us to be adaptable and flexible in dealing with situations and problems we encounter and creative in finding solutions.

One of the most significant features of learning today relates to new technology. The instant availability of more data, information, well researched fact and unsubstantiated opinion than we've ever had access to before has completely changed the role of the 'subject matter expert'.

21st century learners do not need to be provided with information or knowledge. The trainer as 'source of expert knowledge' is a concept that has gone for ever. Learners can access more 'knowledge' than any trainer could possibly possess or make available. And yet our role has never been more important. We need to help learners to develop skills to make sense of their world.

- Deluged with information, how do learners sort it out?
- Do they understand basic differences in the concepts, for example, of correlation and causation?
- How do they separate evidence- based research from poorly referenced opinion pieces?
- Do they understand how to use critical thinking to analyse a piece of writing and challenge the assertions it makes?
- How do they know what and who to trust?

As trainers, I believe we have an unprecedented responsibility for enhancing thinking and learning capabilities in those we train. We can support employers by working on meta-cognitive skills: thinking about how we think and learning about how we learn.

Most employees don't need more information. They need to be able to identify what they need to learn, have strategies for managing their own learning and development and have opportunities to practise and refine key analytical, critical thinking and problem-solving skills.

Along with communication skills, team-working ability and a work ethic, these are the skills that employers value and the skills that support employees in their professional lives and future careers.

And all of this has an impact on the way we teach, our role and our relationships with our learners.

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WHAT DOES THIS MEAN FOR TRAINERS?

Of course this has a significant impact on our learning design. It requires us to become facilitators of learning, which makes demands upon our programme design and the training methods we use. It requires us to hand over some of our power to the learners and to work with their needs. It's a challenge - but if we, as a learning and development profession rise to it, one that benefits learners and their current and future employers enormously.

TRADITIONAL TRAINING

1. The lecturer, teacher of trainer is the subject expert and knowledge resides with him/her and is transferred to the learner.
2. The trainer knows what the learner needs and chooses content accordingly, without consultation with the learner.
3. The trainer is the dominant figure in the training room - the focus of attention is on the trainer and his/her delivery.
4. The trainer tends not to engage the learners in debate or discussion and there is little interaction.
5. Learners learn through listening, observing , demonstration and some skills practice

A LEARNER-CENTRED APPROACH

1. Knowledge is available to anyone: the job of the trainer is to help learners to make sense of the available knowledge.
2. The learner knows what he/she needs and seeks out content that is immediately relevant and useful.
3. The trainer is less dominant and more facilitative - the focus of attention is on the learners and their activity.
4. The trainer actively encourages the learners to express opinions, challenge ideas and do independent research.
5. Learners learn through experience, problem-solving, collaboration and experimentation

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WHERE DO I START?

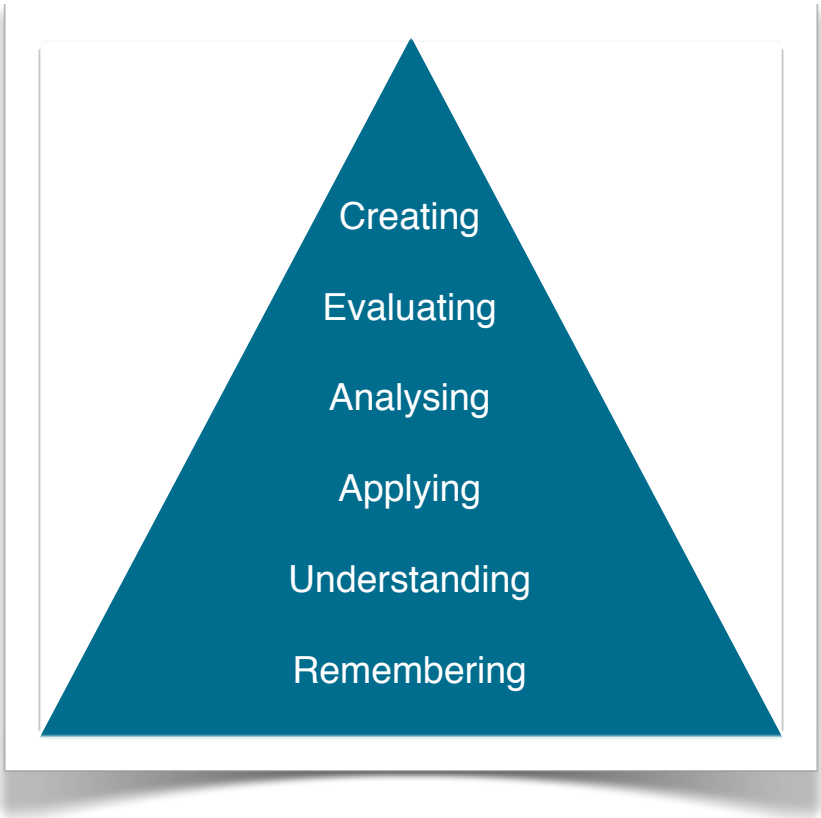
It is easy to think that everything you already do in your technical training has to change. Of course, this is not true. Many of the changes that you can introduce are relatively simple and yet they can make a huge difference to the learners' experience and their ability to remember and apply their learning at a later date.

The basic principles that we are seeking to introduce include some simple things: colour and sound, movement, group-work, dialogue, problem-solving activities, peer teaching, experimentation, repetition and practice.....

Modern brain imaging techniques and lessons emerging from the field of neuroscience all indicate that there are solid scientific reasons for adopting these principles as a means of supporting the learning process.

SOME THINGS DON'T CHANGE!

1. **The purpose of the training**. It is essential that the learning objectives are clearly defined, specific and stated in a way that is measurable.
2. **The desired change** in knowledge, skills, attitudes or behaviours that should result from the training.
3. **The level of learning that is required** as a result of the training. A traditional way of assessing the results of the learning, such as Bloom's Taxonomy, (see right) remains perfectly valid.
4. **The need for a robust evaluation process** to ensure that the required learning is being achieved.



Using the hierarchy of learning, ask yourself at what level you need learners to learn. Do they simply need to remember (rote learn) facts or information? Do they need to understand what they have learnt? Do they need to be able to apply the learning in a practical task or activity? Do they need to use their learning to analyse something (eg to work out why a problem exists) or to evaluate something (eg. to evaluate possible solutions) or to create something (eg. a brand new solution)?

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WHERE DO I START?

SOME THINGS DON'T CHANGE!

1. **The establishment of a relationship** between the trainer and the group. Even thought the teaching style may change, there remains a need for the trainer to establish credibility with the group and 'set the tone' for the training.

2. **Contracting with the group.** In any form of training, it is essential to create a working 'contract' or set of ground-rules with the participants. This includes a discussion of expectations and agreement over acceptable behaviours, programme timings, etc.

3. **Clearly defined objectives, shared with the group**. It is always important to clarify and re-state the learning objectives for any training session. It is also important to ensure the group know whether the training programme is assessed and if so, what the assessment criteria are.

4. **Context setting.** Ensuring that the learners understand the context of the training (eg. does this session form part of a more extended programme, or is it being provided because of a change in policy or circumstances?) and the relationship between this training session and any pre-work or post-course work.

5. **Setting out the benefits.** Ensuring that there is an opportunity for learners to consider the value of the programme by identifying the benefits of the training for them in their individuals situations.

BUT SOME DO.....

1. If you are working in a learner-centred way, you may need to be prepared to do some negotiation. Simple ways of giving some control to the group include allowing them to choose when to take breaks, asking whether there is anything that is important to them about the way in which groups are organised or agreeing what the policy on mobile phone/laptop use should be.

2. You need to be willing to work to flexible timings. When you move control to the learners, you also need to recognise that some things will take longer or be faster than planned and adapt to this. Be prepared to follow something that is clearly of interest and importance to the group.

3. You will need to be prepared that sometimes the learners will come to unexpected conclusions, or will learn things that you had not planned. Accept that when you involve them, and ask them to challenge their thinking, they might also challenge yours. Be prepared to acknowledge that you do not know everything and that there are times when you will need to work together to find out.

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WHERE DO I START?

SETTING LEARNING OBJECTIVES

It is important to be absolutely clear, before designing or delivering any training, about the learning outcome that you want to achieve. Is this a change in knowledge, attitude or skill? At what level do you want the learning to be demonstrated?

This links to evaluation. How will you know that the required learning has been achieved? What will be the evidence? What will the learners be able to do as a result of the learning? How will you measure the success of the learning?

Only once the learning outcome, and the means of evaluating it, have been identified, can the design of the learning content, process and methodology be designed. The basic questions are:

- What do I want the learner to know, feel or be able to do, and at what level, as a result of the training?
- How will I measure whether that learning has been achieved?
- What are the implications for the design of the training I will deliver?

Appropriate choice of language (and specifically verbs) is really important in setting learning objectives. For example, the words used in setting the learning objective will indicate the 'level' of cognitive processing required and measured. Examples are given below.

Remembering:	define, duplicate, list, memorise, recall, repeat, reproduce, state
Understanding:	classify, describe, discuss, explain, identify, locate, recognise, report, select, translate, paraphrase
Applying:	choose, demonstrate, employ, illustrate, interpret, operate, schedule, sketch, solve, use,
Analysing:	appraise, compare, contrast, criticise, differentiate, discriminate, distinguish, examine, experiment, question, test
Evaluating:	argue, defend, judge, select, support, value, evaluate
Creating:	construct, create, design, develop, formulate, invent

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UNDERSTANDING MORE ABOUT HOW ADULT LEARNERS LEARN

WHAT DO WE MEAN BY LEARNING?

Learning is a process of active engagement with experience. It is what people do when they want to make sense of the world. It may involve the development or deepening of knowledge, skills, understanding, values, beliefs and feelings. Learning leads to change: change in behaviour, attitude and willingness to engage in further learning.

1. Learning is a process, not a product. Test scores and other forms of evaluation can measure the knowledge and skills that have been acquired, but not the learning process itself.
2. Learning is a change in knowledge, beliefs, behaviours or attitudes. This change may take time, and there may not be an immediate change following training: do not assume that this indicates a lack of learning.
3. Learning is something that learners have to do for themselves: it is not something you can do to them, or for them.

WHAT ARE THE SPECIFIC NEEDS OF ADULT LEARNERS?

There are some things that we know about adults as learners.

1. Adults are not beginners, but are in a continuing process of growth. They have a history of learning and will enter any structured learning experience at different points, depending upon their own stage of development. They bring with them a unique package of experiences and values – some valuable and some potentially limiting.

2. They come to education with intentions – to seek something which has value to them. They bring expectationS about the learning process and their own well-developed preferences.

3. They also have competing interests - the 'realities of their lives' – and they must feel that the learning process is a valuable investment of their time and energy.

4. There are important cultural factors that will influence adult learning, as a result of their cultural history and expectations. For example, self-directed learning, learner-centred methodologies and co-operative learning are all largely accepted in cultures that promote merit and individualism. However, these theories may clash with cultural norms that revere age, wisdom, the passing of experience and knowledge from 'masters' in one generation to the next. The relationship with the 'teacher' for example, is a crucial differentiator in experiential learning and one that needs to be reviewed against cultural expectations, especially when working with international, multicultural groups.

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WHAT ARE THE SPECIFIC LEARNING AND TEACHING PRINCIPLES THAT SUPPORT ADULTS?

Underlying basic principles in designing adult learning.

1. Learning is enhanced through the process of the communication of ideas, which involves interaction and reflection. (Vygotsky, 1962)

2. Learners need to know why they need to learn something before they undertake to learn it. (Knowles, 1990)

3. Experience is valued – experience is a 'subjective' resource that can be applied to learning. (Knowles, 1990)

4. Learning is oriented to the application of knowledge and problem solving that relates to the learners' real life contexts. (Dunlap and Grabbinger, 2000)

5. Learning is generative – there is a need to actively organise knowledge into a structure that reveals relationships between ideas, conflicts and gaps in knowledge (Grabbinger and Dunlap 1996)

6. Diversity of voices – voices of key writers, policy makers, practitioners, and students are included to ground theory in practice.

7. Assessment encourages higher order learning and reflects all REAL learning activities ' … contextualised, complex intellectual challenges rather than fragmented, static, multiple-choice measures'. (after Wiggins , 1989)

8. Learning requires the creation of a partnership between the learner and the teacher, negotiating goals and content in the course of knowledge delivery (Knowles et al. (1984)

9. There should be intentional learning – (rather than incidental learning) "the learners' purposeful, effortful, self-regulated and active engagement" (Palincsar and Klenk 1992)

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THE CHANGING ROLE OF THE TRAINER

If the principles of adult learning, and the creation of rich and active learning environments, are genuinely applied, it becomes clear quickly that the role of the traditional 'expert instructor' needs to be re-evaluated. No longer is the trainer only the expert, pouring pre-determined knowledge into the 'empty vessels' that the learners bring. However, neither is the trainer in a pure facilitation role - because in organisational learning there are specific, defined objectives that learners need to achieve to improve personal and organisational performance and the facilitator is charged with ensuring that these are achieved. This role - which can sometimes be difficult to maintain - requires the trainer to lead learners through a structured learning process, helping them to identify the learning that is available, interpret and make sense of this and then use it. The learning needs to be relevant and transferable, so that there is observable change and improvement, either in performance, systems, processes or behaviours.

It can be helpful to think of the role of the trainer as someone who works with patterns.
If we think of most traditional knowledge or skills-based training, the purpose of the training instructor is to make and reinforce patterns.

- This might be a pattern of physical action - learning to drive, or work with machinery, or carry out manual equipment checks, or assemble components in a particular sequence.
- It might be a pattern of behaviour that needs to be repeated consistently - following a series of safety checks, handling dangerous materials in the correct way, issuing staff briefings in a specific way or handing a complaint following best practice guidelines.

What is needed in this situation is knowledge and understanding, followed by regular repetition and practice until the pattern is grooved and becomes habitual.

When we move into more complex learning, that involves analysis, evaluation and creation, the trainer needs to focus on different types of pattern. These are 'thinking' patterns: eg. developing patterns of critical thinking, problem-solving and innovation. This process is key to the purpose and role of the learning facilitator. It requires the facilitator to help learners to:

- Recognise the patterns that they already have in place
- Evaluate those patterns to determine whether they are achieving the results that are intended and desired
- Consider the alternatives that are available and explore a range of new possibilities
- Identify new patterns that are likely to achieve better results and that are 'in keeping' with the goals and identity of the learner
- Rehearse and refine new patterns in a safe environment
- Support the transfer of the new patterns into the 'real world'

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HOW DOES THIS TRANSLATE INTO TEACHING METHODS?

When these principles are combined, they lead to emphasis on 4 specific learning methodologies.

LEARNER-CENTRED LEARNING

Learners take control of the direction of their learning experience, giving them more ownership of the learning and making the learning more personally relevant.

They generate their own questions and use a high level of active participation. They focus on what is important to them and on the things that will offer real benefits.

They use reflection - this is where the learner observes, interprets, and reflects upon their learning experience. This reflection would include the 'who, what, where and why' of the learning experience.

PROBLEM-BASED LEARNING

Problem based learning is the type of inquisitive and investigative education for which there is no clear answer or procedural rule. It is an environment where knowledge is constructed and not received. Problem based learning activates prior knowledge, transfers learning and integrates the new knowledge within the structure of the old knowledge.

In addition, problem based learning involves students in real problems (often work-based), where they must analyse, synthesise, and hypothesise information to determine possible solutions to a situation, topic, or problem.

GENERATIVE LEARNING

Generative learning is the type of learning where students become investigators and 'teachers' become facilitators of knowledge.

Generative learning demands that learners integrate new knowledge within the structure of old knowledge, making connections between their own past and current experience.

They discuss ideas and opinions, making meaning that is relevant to them as they investigate work-related questions.

CO-OPERATIVE LEARNING

Cooperative learning brings together individuals to work in small groups to collaborate, and agree on a solution to the issue they are resolving. Participants work together to build and refine knowledge with their peers. These workgroups develop self-regulation through the management, monitoring, and evaluation of the learning experience.

Cooperative learning demands that people learning together accept responsibility for their own learning.

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UNDERSTANDING MORE ABOUT HOW ADULT LEARNERS LEARN

WHAT ARE THE IMPLICATIONS FOR THE TRAINER?

The implications for trainers are clear. When designing a programme of learning for adult learners, consideration should be given to ways of including each of these types of learning in the process. It is appropriate to ask questions such as:

- Are there opportunities for collaborative work - sharing the learning in small groups or learning sets?
- Are there opportunities to engage with others who have different levels of knowledge and understanding?
- Are there opportunities to apply the learning in real-life problem-solving or solution-finding?
- Are there opportunities to personalise the learning by identifying current, relevant examples and contexts for individual learners?
- Are there opportunities to 'test' and challenge new learning, in order to assimilate it into existing knowledge?
- Are there opportunities for learners to re-design or adapt the proposed learning process to meet their own needs?

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ENGAGING LEARNERS IN THE TRAINING SESSION

USING ALL THE SENSES

Learners use a range of different 'sensory perceptions' to access and retain information: sight, sound, smell, taste, physical movement and emotion.

V=Visual: receiving information through the visual senses and using imagery, diagrams and other visual representations to help to remember and make sense of received information

A = Auditory: receiving information through the auditory senses and using sound, repetition, mnemonics, music and other auditory representations to help to remember and make sense of received information

K = Kinaesthetic: receiving information through the tactile senses and using movement, feelings, physical sensation and other spacial representations to help to remember and make sense of received information

By offering 'multi-media' input (sound, vision, feeling, movement, colour, etc we allow learners to manage their own learning, reinforce retention of facts, ideas and concepts and access a broad range of cognitive skills.

VAK ATTACK

A simple way of remembering this is to remember the phrase "VAK Attack". This means ensuring that trainer input is offered in a variety of ways, triggering all senses and recognising the power of not just the auditory and visual input but also the emotional and physical engagement involved in effective learning.

WHAT'S CHANGED?

As a result of the work done by Kolb, and subsequently developed by Peter Honey and Alan Mumford, there has been a widely held belief that learners can be categorised by their 'preferred learning style'. Learners were identified as Activists, Reflectors, Theorists or Pragmatists. Frequently, trainers were taught that individuals were particular types of learners and encouraged to ensure that learning design included activities that would appeal to each 'type' of learner.

More recently, new technology, better understanding of how the brain works and more structured research suggests that this is a flawed concept and can, in fact, be detrimental to effective teaching and learning.

Whilst acknowledging that presenting materials in different ways, and encouraging a wide variety of different learning activities and methods, is important, it is not because learners fit into a particular 'learning style'. In reality, to learn effectively, learners need to use all of the approaches and resources available to them, rather than relying upon the ones which they prefer or have developed most fully. The most important learning skills to develop are meta-cognitive skills: these relate back to the earlier work on the Bloom Taxonomy of Learning.

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EXAMPLES OF USING DIFFERENT SENSES IN TRAINING ACTIVITIES

Activities using the visual sense include:

- Using coloured pens or Post-It notes to classify
- Writing down key facts and annotating/highlighting in colour
- Creating Mind Maps
- Creating pictures and diagrams from the factual information they are learning
- Using time-lines or graphs
- Using photography, film, video or graphics
- Creating 'cartoon' strips
- Observing demonstrations
- Writing on large graffiti sheets on the walls
- Visualising success, running 'mental movies' to rehearse skills

Activities using the auditory sense include:

- Reading text aloud, with accent and emotion
- Explaining something to someone else in your own words
- Making voice memos or recordings of key points
- Summarising verbally, using your own words
- Using rhyme or rhythm to aid memory
- Add music or a regular beat to aid memory
- Creating mnemonics
- Differentiating between sounds (eg normal engine operation and abnormal)
- Adding memorable sound effects to a visual presentation

Activities using the kinaesthetic sense include:

- Physical sorting of components, materials
- Hands-on practice
- Sorting out sequences - moving individual cards into the correct order
- Making models, sculptures or physical representations
- Underlining, filling in gaps, completing sentences in handouts and worksheet
- Walking and talking, changing seating positions, involving physical actions in recalling information
- Using smell and taste to 'anchor' memory
- Recognise the importance of emotion. Explore ways of creating strong emotional responses to important information or messages

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HELPING LEARNERS TO DEVELOP THEIR PERSONAL LEARNING SKILLS

WHAT DO EFFECTIVE LEARNERS DO?

Research conducted at the University of Bristol, UK over a ten year period beginning in 2004, has identified a number of factors that characterise effective learners. This is important for trainers because if we understand more about how the most effective learners learn, we can develop our training delivery to strengthen learning capability and make learners more able to manage their own, on-going learning effectively. If we can combine the 'instructional' aspect of our training with activities that strengthen learning capability, we are offering learners powerful and transferable tools for the future. The research project, led by Ruth Deakin Crick (1), identified seven learning 'dimensions' (combinations of cognitive skills, attitudes and beliefs, and behaviours) that distinguished the most effective learners. These are described below.

THE 7 DIMENSIONS OF LEARNING

The seven dimensions of 'learning power' which emerged from the research, each with elements of 'thinking, feeling and doing' are:

- Changing and Learning - a sense of myself as someone who learns and changes over time, believing that learning is a lifelong process
- Critical curiosity - an orientation to want to 'get beneath the surface', ask questions and discover more by challenging assumptions and testing 'evidence'
- Meaning Making - making connections between ideas and concepts and also connecting new things to current experience and seeing that learning 'matters to me'
- Creativity - risk-taking, playfulness, imagination and intuition
- Learning relationships - learning with and from others and also able to manage without them
- Strategic awareness - being aware of my thoughts, feelings and actions as a learner and able to use that awareness to manage learning processes
- Resilience - the readiness to persevere in the development of my own learning power and deal with the negative emotions that can be associated with 'difficult' learning

In combination, these dimensions illustrate an individual's learning power. This can offer powerful insights into how individuals learn and how they can enhance their learning capacity.
For a trainer, the implications are significant. They relate to the environment we create for learning and the processes we ask learners to engage in during our training. They contribute to engaging learners, encouraging them to become self-directed, ensure that learning becomes a personalised process and stimulate further exploration around the subject matter.

(1) Deakin Crick R., Broadfoot P. & Claxton G. (2004)
Developing an Effective Lifelong Learning Inventory: The ELLI Project, Assessment in Education, 11, 3.

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SUPPORTING 'LEARNING TO LEARN'

Within your learning design, it is possible to create learning processes that support these seven learning dimensions. Examples of the type of activity are suggested below.

Changing and Learning

- Setting up increasingly complex challenges in which new learning can be applied
- Encouraging learners to try a 'different' or novel strategy
- Experimenting with least preferred behaviours (eg. encouraging quiet people to offer 'unedited' ideas)

Critical curiosity

- Research-based activity within supplied documentation
- Preparation of questions for an expert panel or interviewing specialists
- Looking for more extended explanations, asking "Why?" and identifying cause and effect
- Doing personal research via web-based information
- Looking for flaws in an argument using critical thinking skills

Meaning Making

- Re-organising steps in a sequence
- Creating flow-charts
- Describing the relationship between different parts of a whole
- Finding and describing relevant examples from personal experience
- Applying a known solution to a new problem

Creativity

- Setting up an experiment
- Thinking about a different way of achieving results
- Considering 'unlikely' options before disregarding them
- Seeking stimuli from different environments

Learning relationships

- Identifying others who know and learning from them
- Setting up collaborative learning groups
- Teaching a process to someone else
- Peer coaching
- Pairing people with someone who thinks differently and will challenge them

Strategic awareness

- Identifying 'key learning points'
- Building 'learning review' into every learning event or project
- Identifying preferred learning strategies
- Structuring personal learning plans (eg. revision of notes, test preparation)

Resilience

- Offering problem-based learning (with challenging scenarios)
- Allowing learners to struggle to work out a solution without intervening too early
- Providing opportunities for repetition and rehearsal

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DESIGNING YOUR TRAINING PROGRAMME

Instructional strategies are the tools, methods, and context that are combined and integrated to create a delivery approach. How the training experience is planned, organized, and structured matters. On the basis of a review of the literature, Noe and Colquitt (2002) (2) identified a number of characteristics of well-designed training that enhances learning and transfer:

- Trainees understand the objectives, purpose, and intended outcomes
- The content is meaningful and examples, exercises, and assignments are relevant to the job
- Trainees are provided with learning aids to help them learn, organise, and recall training content
- Trainees can practice in a relatively safe environment
- Trainees receive feedback on learning from trainers, observers, peers, or the task itself
- Trainees can observe and interact with other trainees
- The training programme is coordinated effectively

A thorough training strategy does four things (Salas & Cannon-Bowers, 2001) (3). Most training programs that attempt to build skills should have all these components present.

1. It conveys information to the trainees (i.e., the concepts, facts, and information they need to learn.
2. It demonstrates the desired behaviour, cognition, and attitudes.
3. It creates opportunity to practice the KSAs (knowledge, skills and attitudes) to be learned
4. It gives feedback to the trainee on how he or she is doing with respect to the learning, and as a result, it allows for remediation.

We know from the body of research that learning occurs through the practice and feedback components. Practice provides opportunities to learn. However, not all practice is created equal—unstructured practice without objectives, appropriate stimulation, and useful feedback can teach wrong lessons. Moreover, not all feedback is equally effective. Practice is most powerful when combined with timely, constructive, and diagnostic feedback, particularly when the feedback is actionable and task focused. It is therefore important to incorporate four concepts into training:

INFORMATION | DEMONSTRATION | PRACTICE | FEEDBACK

(2) Noe, R. A., & Colquitt, J. A. (2002).
Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), Creating, implementing, and maintaining effective training and development: State-of-the-art lessons for practice (pp. 53–79). San Francisco, CA: Jossey-Bass.

(3) Salas, E., & Cannon-Bowers, J. A. (2001).
The science of training: A decade of progress. Annual Review of Psychology, 52, 471–499

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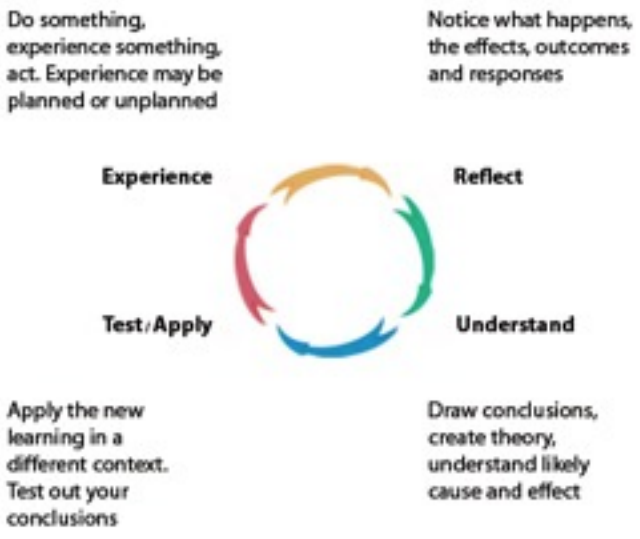
SELECTION OF APPROPRIATE TRAINING ACTIVITIES

In technical and skills based training it is vital that learners are able to not only retain (remember and be able to reproduce) the knowledge and skills that they achieve during the training but that they can apply their training in the 'transfer environment'. This requires a level of deeper learning than that tested in much traditional training. For instance, it is well known that "drilling" (or the constant repetition of stimulus-response pairs) facilitates rapid learning in training. However, considerable research shows that although this form of training facilitates rapid skill acquisition, it is less likely to transfer to post-training environments than other forms of training.

Other factors that have been found to promote the type of deep learning that leads to transfer are variability in practice conditions, withholding knowledge of results until trainees have completed multiple trials (i.e., not providing continuous feedback), and gradual removal of knowledge of results. The idea is simple - as trainees begin to master a skill:

- The training and practice conditions should be increasingly difficult
- There should be less trainer support
- Practice conditions should increasingly resemble transfer conditions ie. practice opportunities should require trainees to engage in the same cognitive processes they will need to engage in when they return to work.
- Learners should be encouraged to make errors errors and provided with support to build correction management. Error training seems to work by encouraging greater effort to learn, promoting a deeper understanding of tasks, and by providing both strategies and emotional management tactics for handling on-the-job errors.

Often, this mean designing sufficient challenge into the training. It also means that there should be significant amount of repetition, with opportunities to practice similar skills, or apply knowledge, in increasingly complex contexts. This may include applying learning in situations with more ambiguity, shorter time-frames, complex inter-personal relationships, increasing external delivery pressure or higher levels of risk. For a trainer, this goes directly to the KOLB Learning Cycle, in which the cycle is not seen as a circle but as a spiral, in which each application leads to a new, different and potentially more challenging experience.



(2) Kolb,D.A. (1984) Experiential Learning, Englewood Cliffs, NJ.: Prentice Hall. 256 pages. Full statement and discussion of Kolb's ideas concerning experiential learning.

RSVP EXPERIENTIAL LEARNING DESIGN

ENSURING RETENTION AND TRANSFER

SELF REGULATION AND REVIEW

One way that trainers can structure training to enhance learning is to prompt self-regulatory activity by learners. In the training context, self-regulation refers to learner cognitions that help them sustain focused attention on learning through self-monitoring of performance, comparison of progress to an end goal, and adjustment of learning effort and strategy as appropriate. So, it is clear that there is a need to engage learners in self-regulatory processes during training and to encourage them to reflect and adjust. Simple questions such as:

> "Are you learning what you need to learn?" or
> "Would you be ready to take an exam on this material?"

may be sufficient to affect trainee learning.

REVIEWING AND DE-BRIEFING

Any practical or experiential learning is not complete without 'closing the loop' of experience, reflection, conceptualisation and application.

Facilitated learning review is very important in the second and third stages of this, as it enable learners to make sense of their experience before they try to apply their learning in new contexts.

At a very simple level, the process of reviewing experience focusses on four key questions.

1. What happened? (What did you do?)
2. What was the effect of what happened ?(What were the results?)
3. Were these results the ones that were anticipated/desired?
4. If so, how can we replicate this experience .... and if not, what needs to be changed?

This 'learning review' process can be facilitated in many different ways. It may be a simple facilitated discussion or it may involve individual input in writing, visual presentation or other 'holistic' means. (Ref VAK: offering a range of activity and different sensory methods for reviewing can create more memorable learning.) Reviewing enables learners to develop important skills that relate to reflecting upon, and developing, individual, team and organisational learning strategies. It should be encouraged following any experience that offers the potential for learning, eg. project work, structured team activity, working through a problem-solving process or managing change. By developing de-briefing and reviewing skills within a training programme, trainers are offering learners a life skill that will be transferable into any learning context.

RSVP EXPERIENTIAL LEARNING DESIGN

ENSURING RETENTION AND TRANSFER

RETENTION OF KEY LEARNING

There is an old expression in teaching which goes,

> "Tell them what you are going to tell them....then tell them....then tell them what you have told them"

This is about reinforcement of knowledge-based learning, but it is also about trying to ensure that you have the attention of the learners.

- It is well-documented that learners (or listeners to a presentation) will remember the first information that they hear and the last information that they hear. And this is limited to a very small number of items!
- It is therefore important to the trainer that the opening and closing remarks in any training are precise and memorable. It is worth asking the question,

  > "If the learners are to leave this session remembering only three or four key messages, what would they be?"

- Once these key learning points have been identified, consider how to create a powerful set of opening statement that will capture the attention of the learners. This may be a striking fact or quotation, a story that illustrates the importance of the material they are about to learn or a challenging question.
- Equally, use the 'learning summary' at the end of the training session to re-present the key learning points, using a variety of media, to ensure that these are the messages that are retained.

USING EXPERIENTIAL, ACCELERATED AND BRAIN-FRIENDLY METHODS IN THE DESIGN AND DELIVERY OF TECHNICAL TRAINING

RSVP EXPERIENTIAL LEARNING DESIGN

THE DELIVERY OF THE TRAINING

PERSONAL PRESENTATION AND IMPACT

In a facilitative role, there should be less focus on the trainer and more on the learners than in a traditional instructional role. However, it is still very important to consider the personal presentation and impact of the trainer - especially when the trainer is giving instructions, providing expert input or leading a learning review.

The trainer needs to focus specifically upon:

- Establishing personal credibility : demonstrating specific expertise and knowledge in both subject matter and in training delivery skills
- Demonstrating genuine interest in, and support for, the learners: eg. being an effective listener, identifying individual needs and concerns and responding to them, being able to use specific communication skills such as clarification and summary to ensure learner comprehension
- Demonstrating genuine interest in, and enthusiasm for, the subject matter - showing energy, confidence and maintaining the interest and attention of the learners
- Using appropriate presentation and language skills, including an appropriate choice of language that supports the culture and expectations of the learners and being able to 'translate' complex or technical language as required
- Building and maintaining rapport with the learners and being aware of body language, non-verbal messages, appropriate levels of eye-contact and physical closeness, use of tone of voice and pacing of delivery (all of which may be culturally specific)
- Maintaining control of the group process and being confident in dealing with 'difficult' situations eg. a challenge to authority, non-compliance with instructions, confrontation

THE DELIVERY OF THE TRAINING

DEALING WITH STRESSFUL SITUATIONS

It is inevitable that there will be some stress associated with delivering training, especially when the content is important and challenging. Individuals react differently to stress and it is important to know your own reactions and to practise strategies for dealing with them.

Some important things to remember are:

- A trainer cannot be responsible for the choices made by adult learners: they are responsible for their own learning and have the right to learn or not to learn
- A clearly defined 'learning contract' provides the basis for acceptable learner behaviour and can be referred to throughout a training programme
- Trainers should be very familiar with their materials and comfortable with responding to challenges and questions. However, it is important to give honest input: it is better to say, "I don't know, but I will find out..." in response to a question than to offer inaccurate or half- formed answers. Even technical experts cannot be expected to know everything!
- The more active, engaged and self-directed learners are, the more likely they are to feel that they are working in partnership with the trainer and to seek out effective learning strategies

USING EXPERIENTIAL, ACCELERATED AND BRAIN-FRIENDLY METHODS IN THE DESIGN AND DELIVERY OF TECHNICAL TRAINING

RSVP EXPERIENTIAL LEARNING DESIGN

MATERIALS, RESOURCES AND THE LEARNING ENVIRONMENT

There is no definitive 'right answer' to a question about the type of resources or materials that should be used in training: it will depend upon the type of training, the need for research, the level of engagement of the learners, the time available etc.

However, there are some guidelines that can be applied to almost all training and which will help the trainer to prepare. These are some 'top tips' for easy reference.

1. Presentation of materials (...avoiding 'Death by Powerpoint')
   - Slide presentations should ONLY be used to provide short, memorable 'headlines' and should not be used to present complex information which could be accessed in other ways.
   - Think of slides as a set of memory joggers which will remind learners of a limited number of key messages.
   - If slides must be used, make them short, clear, visible and visually appealing eg. can you use an image rather than words to get your message across?

2. Support materials in the form of handouts etc. should be made available after training (unless there is a specific 'activity' sheet eg. a chart to complete, a set of specific task instructions or a question sheet to complete, that is needed as part of an activity.) Handouts should give more extended references and provide the opportunity to follow up learning in more detail but should not form the basis of the content of a training workshop.

3. If individual or small group learning is undertaken in which research is required, consider and make available the sources of information needed and the means of accessing these eg. instruction manuals, on-line references, so that all potentially important material can be accessed easily.

4. Consider the physical environment needed to match the style of the training. eg. space, furniture, flexibility of group size, privacy, noise interference etc and ensure the environment supports the style of training you are designing.

5. Check that you are familiar with any technology that is required and that it is all in working order before the training programme begins.

USING EXPERIENTIAL, ACCELERATED AND BRAIN-FRIENDLY METHODS IN THE DESIGN AND DELIVERY OF TECHNICAL TRAINING

RSVP EXPERIENTIAL LEARNING DESIGN

MEASUREMENT AND EVALUATION OF RESULTS

All good training should have a 'testing' process built in. Part of the design should include a design of the evaluation process. The behavioural-change focus that is considered to be central to the success of training in the long-term demands an integrated evaluation process. The most well-known and straightforward approach to training evaluation comes from the research of Donald Kirkpatrick and the 4 levels model that he developed and articulated in his book "Evaluating Training Programs – The Four Levels" (1998). Widely recognised as representing the most practical approach to this subject, the book examines four phases of evaluation (Reaction, Learning, Behaviour and Results).

Level 1: Reaction - this is an immediate reaction from the learners about the training they have received - often a simple reaction sheet (sometimes known as 'a happy sheet)

Level 2: This asks the learners to identify what they have leared and uses 'knowledge and skills tests to check understanding and retention eg. testing using a multiple choice test, or asking learners to repeat the demonstration of a skill they learned during training.

Level 3: This looks for changes in behaviour resutling from the training eg. is an employee now demonstrating a level of critical thinking that was not in evidence prior to the training? Level 3 evaluation should be completed by line managers and peers, as they are the only people likely to see the 'learning in action'.

Level 4: This evaluates the impact of training at an organisational level and is measured against numerical or qualitative evidence (Eg. Has the incidence of reported accidents reduced, have there been cost savings, have our customer feedback scores improved directly as a result of training? Level 4 is usually measured by functions eg. financial results are tracked as part of the finance team's normal controls, quality is measured by recordings of error or wastage etc.

James Kirkpatrick (son of the originator of the Kirkpatrick model) talking about training evaluation at the 2006 ASTD conference, argued that the real weakness in most training implementation and evaluation is at Level 3: Behaviour. His argument is that if Level 3 evaluation is really effective, Level 4, Results, take care of themselves.

Effective and memorable learning is very largely dependent upon the organisational support and context in which any training initiative is delivered. In a study carried out in 2006 by Dr. Brent Peterson of the Apollo Consulting Group, in which they identified activities contributing to learning effectiveness, it was discovered that 26% of these activities were in pre-work, 24% during a learning event itself and 50% in the follow-up to the event.

Part of any good learning programme design should be the design of the evaluation and follow-up process that will be in place to support learners after the training event.