# Flexibility through technology — lessons from the field

## Anne Walsh

ABSTRACT

The national *LearnScope* project provided an opportunity to observe vocational education and training (VET) practitioners as they attempted to implement technology for educational purposes. The success of the project teams varied for a variety of reasons. Some integrated sophisticated technologies into their range of educational media while others continue to see technology as a novelty or an 'add on' to their traditional medium – the classroom.

These observations have raised interesting issues for educators to consider. None the least of which are whether or not technology is interpreted as value free and whether teachers understand technology as a pedagogical tool. This paper does not propose to answer questions but rather to raise them. It will describe some of the more interesting lessons gained from informal observation of some thirty work-based learning teams across Australia.

## INTRODUCTION

This paper is structured in two main parts. The first briefly discusses four interesting lessons learnt from LearnScope. They are by no means the only things learnt but collectively provide some insight into the issue of how VET practitioners go about integrating technology into their teaching and learning practices.

In the second part of this paper I will expand on two particular areas of learning for the LearnScope team. I have included these as they refer to two aspects of work-based learning that the LearnScope management team are often asked for advice on – facilitation and learning models.

## BACKGROUND

LearnScope is a national professional development initiative funded by the Australian National Training Authority (ANTA). Its purpose is to provide opportunities for teachers and trainers in the vocational education and training (VET) sector to become more skilled in the use of technology to support student learning. More specifically, the LearnScope project funds teams across Australia who engage in  work-based learning to gain skills and understandings about how to integrate technology into their teaching and learning practices.

There have been three rounds of LearnScope funding distributed (one in 1998 and two in 1999). Nearly 70 work-based learning teams have been involved totalling over 1000 individual participants. They have developed skills as simple as effective use of e-mail as a communication and document distribution tool, and as complex as web authoring and educational WWW site design. Perhaps more important than this, many of the participants have explored the meaning of technology as an educational tool. They have begun to re-conceptualise their teaching and learning practices to include the gamut of communication possibilities that technology offers.

You will notice that in the last paragraph I have deliberately used the word 'begun'. Based on my own observations of LearnScope teams, I believe that the majority of teachers and trainers are yet to have sufficient exposure to well planned and implemented educational technology to be able to reshape their practices with technology as a core tool rather than as a token add-on.

## DISCLAIMER

I must point out at this juncture that the following observations have not been the result of formal research. They are simply those of a project officer who has been in the unique position of being able to observe a wide variety of VET practitioners in both public and private organisations, and who have been specifically engaged in attempts to integrate technology into their educational practices. I also

feel obliged to point out that this paper does not necessarily reflect the views of the LearnScope Project Management Team, ANTA or the NSW Dept of Education and Training.

## LESSON 1 – CAPABILITIES AUDITS

One of the first things learned through observations of LearnScope teams was that starting out with some sort of capabilities audit is essential. Although teachers and trainers recognise that they need new skills in order to effectively incorporate technology into their delivery, they often don't realise the full range of skills and understandings required. Further, they often over or under estimate the gap between their current capabilities and those required.

Teaching and learning, where technology rather than the teacher is the primary media, is quite different than anything we have done in classrooms in the past. The moderate scenario is where technology is incorporated into the standard classroom to augment and enhance the teaching and learning process. In the extreme case the technology medium completely replaces the four-walled environment - the physical location of student and teacher becomes irrelevant and their interaction entirely virtual.

At any point on the continuum between these extremes the common feature is the shift of the teacher from being the primary medium towards being a facilitator through a new medium – computer, WWW or other. This shift not only requires both student and teacher to acquire technical skills in the use of the new technology, but also requires the development of a new relationship between teachers and students. A relationship that sees the teacher still taking a pivotal role but quite dissimilar to that of the past.

Hence, when it comes to taking on new technologies, teachers and trainers benefit from using a capabilities audit in two ways. In the first instance the audit process introduces them to the range of capabilities, not just technical skills, that they need in order to effectively support their students' learning. Secondly, the audit process helps accurately identify the gap between current capability and required capability. Knowing the gap is important as it represents the learning that needs to take place before technology can be effectively used.

Through LearnScope we learnt that in most instances teachers and trainers focused their attention on the technical skills required to use technology and had more difficulty understanding the capabilities they would need to develop. That is, they generally had difficulty recognising the effect the use of technology would have on the teaching and learning process and how they would have to change their practices and their relationship with students. A contributing factor to this is the lack of a comprehensive, capabilities auditing tool that considers both technical and pedagogical skills.

## LESSON 2 – PLANNING

The second lesson from LearnScope relates to planning. Interestingly, although teachers and trainers advocate good planning of their students' learning, they do not always plan their own learning as thoroughly. LearnScope teams demonstrated that where pre-planning was rigorous, the achievement of outcomes was almost guaranteed; skills were developed and technology successfully piloted. On the other hand, where planning was not given a high priority, teams more easily lost focus and became distracted, progress proved more difficult and project outcomes often had to be renegotiated.

Why is this of interest? Because it means that we cannot assume that teachers will automatically know *how* to learn about the use of technology as an educational medium and/or tool.

In fact, we may be oversimplifying the process required. To date we approached the inclusion of technology as a simple matter of 'develop the skills and understandings and then get on with it'. However, after observing the LearnScope teams I suggest that it is far more complex than that. True, teachers and trainers need to develop technical skills and other capabilities. Also true that at a superficial level this can be done through the project based approach currently applied. However, for staff to sufficiently change their teaching and learning practices such that technology becomes embedded rather than added on requires re-conceptualising the role of the teacher and the role of the technology medium. This cannot be done in a short space of time nor can it be done by simply learning skills.

This is not to say that we should not continue to use the LearnScope project-style, work-based learning approach. Rather, I suggest that we should recognise the limitations of work-based learning by virtue of the approach itself and because peoples' understanding of it also limits the outcomes possible. I will have more to say on this in Lesson 4. For the moment lets return to the question of planning work-based learning.

What I am about to say will come as no surprise. We found that the essential elements to planning a LearnScope style project were the establishment of clearly articulated learning outcomes, reasonable time lines that take into account the periodical interruptions to the academic calendar (e.g. assessment, marking and vacation periods), agreed interim goals and a monitoring strategy, regular interaction with the learning facilitator, and a risk identification and management plan. Where these elements were included in the overall plan the LearnScope teams were considerably more likely to achieve what they set out to do.

## LESSON 3 – SKILLS FIRST

Lesson 3 goes some way towards helping resolve the dilemma uncovered by Lesson 2. The third lesson learnt from LearnScope was that in most cases, teachers and trainers need to move through a stage of skills development before they are able to consider the pedagogical implications of technology.

The facilitators of some LearnScope teams attempted to grapple with questions of pedagogy very early in their projects and found it particularly difficult. Generally teachers and trainers were preoccupied with their lack of familiarity with technology and were concerned initially with developing at least rudimentary skills in its use. As a result, team members were not able to consider issues of 'application' until they had undergone sufficient skill development for them to feel comfortable with the technology in question. Only after this were they able to recognise that the inclusion of technology is not just an issue of skills, it is an issue of changed roles and relationships.

In short, the lesson learnt was that VET practitioners need to learn enough about the technical aspects of technology to realise what they don't need to know. Then they can refocus on the more difficult issues associated with the use of technology as an educational medium.

## LESSON 4 – TIME AND PRESSURE

This last lesson from LearnScope also contributes to the resolution of the dilemma described in Lesson 2. Lesson 4 has two parts, namely (a) that there will be considerable time between the piloting of technology as an educational medium and its integration into practice, and (b) this second stage (i.e. integration) may not occur unless there is continued pressure on staff to do so.

One of the aims of LearnScope is that teachers and trainers will reach the point of considering the use of technology as a normal part of their practice rather than as an add-on. The reality though is that LearnScope can only directly support the process of developing some skills and understandings and then the application of these in a pilot or trial. The process of re-conceptualising their teaching and learning practices with technology as a fundamental component takes time and occurs to some extent during the pilot stage, but to a greater extent, afterwards.

Therefore, the critical stage in terms of technology becoming integrated, comes *after* such interventions as LearnScope. When the funded project is over the training organisation needs to accept continuing responsibility for maintaining subtle or overt pressure on the participants, and needs to continue to provide appropriate levels of resources (specifically time). Without both pressure and resources, LearnScope participants are likely to see the end of the funded project as the end of their required effort. The potential result is at best, a superficial use of technology and at worst, a lack of further progress and a return to original, technology free practices.

## Part 2

## LEARNING MODELS

An often asked question of the LearnScope management team is about how to *do* work-based learning (WBL). Even if we agreed on a definition or description of WBL the reality is that everybody

does it in a different way. Not only that, they will vary the way they learn according to the type of content, the context of the learning and the degree of motivation they feel for the process or the outcome. The LearnScope teams demonstrated this over and over again. Not only did teams go about their collective learning in different ways, individuals within each team used different strategies.

In the next four subsections I will describe, in the form of models, four of the ways we observed LearnScope teams learning.

### Zero Option model

This model particularly applied where the learning outcomes for the LearnScope team members focused on developing skills in the use of technology (vs application of technology). In this model the learning facilitator designs activities and team communication strategies that rely on using technology. No alternatives are provided so the individual team members are forced to engage in the technology simply to find out what is going on.

Of course, the facilitator and project manager build in support so that the team members with little skill are provided all the help they need to learn how to use the technology. The point is though, that there is no option but to use it if the team member wants to be a part of the project.

The situations where this model is particularly useful are where there are team members who are somewhat reluctant to use technology themselves although they are designing technology based learning activities for their students. It is a model that recognises that a base level of competence by the teacher is essential if they are to fully understand the implications of using technology as an educational tool

### Tippy Toe model

Imagine the professional development project to be like a swimming pool. Some teams chose to tippy toe in from the shallow end. In other words, they chose to begin with small tasks and build up to more difficult learning activities. Typically, these teams begin by learning about the 'technical' aspects of technology – from how to use email, organise files, create links in word documents through to more complex skills like using HTML and hypertext, working with graphics and creating web pages.

In a short period of time many of the members of tippy toe teams realise that they personally don't need to have the technical skills. They come to a point where they know enough to know that they don't need to know more in order to be able to design technology based learning. It's at this point that the facilitator changes the focus of the learning activities from understanding the technology to interpreting the technology as an educational tool. In this second phase the team reviews, evaluates and critiques how they and others have used technology. They discuss design and pedagogy, and begin to reconceptualise their classroom practices to take into account the virtual medium. The learning for tippy toe teams is evolutionary – it is prestructured and reasonably non-threatening.

This model works particularly well with groups who have a common need for learning but may not have an immediate application in mind. Often the team includes inexperienced persons who benefit greatly from the gradual approach. More experienced team members often take on extra tasks to satisfy their learning needs while mentoring their less experienced colleagues.

### Deep End model

Unlike the previous model, 'deep end' teams jump into a complex task right from the word go. These teams typically have been charged with collective responsibility for having a particular course or subject on-line within a given time frame. Their project starts with activities directly associated with this task.

Deep end teams learn as the demands of the project require. Obstacles along the way give rise to learning activities. Hence the learning is revolutionary rather than evolutionary. It is high risk for the team members as there is much less pre-structuring. Not all team members need to acquire the same skills set nor do they all need the same level of proficiency hence each may undertake a totally different learning path.

The deep end model is very often the preferred choice of task oriented teams. It's a model that works best with pre-existing teams who have worked together before, are comfortable with the dynamics

between team members and who have some previous experience with technology. There needs to be a clear sense of common purpose and acceptance of the flexible nature of the learning process.

**Parallel Approach model**

In this model the team members undertake a structured training program and parallel work-based activities designed to encourage application of the theory in context and also to provide opportunities for assessment of the learning.

Unlike the 'deep end' approach, in this model the team members are unlikely to be a pre-existing team with a single, collective objective. In fact, the parallel approach works particularly well when the team members are drawn from different areas of the organisation. Participants probably don't see themselves as a team at all but rather, a collection of individuals each with a similar learning need. Although the structured learning may be done together, typically the work-based tasks are individual and relate to the context of each separate team member.

## FACILITATING WORK-BASED LEARNING

No matter what model of work-based learning adopted, the role of the learning facilitator has been identified as crucial to the success of LearnScope projects not only by the LearnScope Management Team and ANTA's independent evaluator, but also by members of LearnScope teams themselves. Work-based learning is not the same as the process that takes place in a structured classroom environment. Many teachers are not familiar, experienced or comfortable with learning using the work-based methodology. Hence, having a learning facilitator working with the team has proven to be one of the essential ingredients for success.

**What does the learning facilitator do?**

One of the first tasks of the facilitator is to help the team members articulate what it is that they want or need to learn. This is not always easy. The facilitator needs to have a good understanding of the overall aim of the project to help ensure that the outcomes written in each individual's learning plan are related and contribute to the overall outcome for the team.

Associated with this task is helping team members plan appropriate learning activities. The most challenging aspect of this for the facilitator is to help identify existing work tasks that may contribute to their learning or ways to adapt work tasks to become learning activities. This is challenging because it means the facilitator must become sufficiently familiar with the context of each individual's work to be able to prompt them to rethink their daily tasks as potential learning activities and to recognise opportunities for collaboration.

The third significant role of the facilitator during the planning process is to help the team members develop a realistic time frame for their learning. Very often teachers underestimate the time required for work-based. An experienced facilitator will know that it takes a very short time for other work pressures to force the work-based learning project down the priority list thus encroaching on the time set aside for learning.

Clearly then, part of the facilitator's role during the project is to monitor the team members and encourage them to keep their work-based learning project as a high priority. The facilitator needs to strike a balance between motivating and nagging, and also needs to recognise that some individuals respond well to close and obvious monitoring whereas others prefer a looser approach. One size will not fit all.

Monitoring is not the only ongoing role. The facilitator needs to keep in touch with each individual in order to recognise if and when it might be appropriate to renegotiate the learning outcomes or to modify the planned activities. In some cases the original learning plan is found to be too ambitious or perhaps not ambitious enough. It might be that an unexpected opportunity has arisen which would greatly benefit the project if it were incorporated. There are many reasons to modify a learning plan along the way and the facilitator needs to be aware and ready to help do this.

Facilitating communication between team members is another aspect of the facilitator's role. Not all members of work-based learning teams are necessarily working towards the same specific outcomes hence the facilitator needs to make a judgement about the degree and form of inter-team

communication necessary to maximise learning, and develop strategies for this to occur. Some teams are made up of independent individuals who need very little face to face contact. Others thrive on regular meetings. For some teams virtual communication is ideal and for others the personal approach is more beneficial.

Work-based learning often produces unexpected outcomes. This is one of the reasons why it is so valued as a professional development methodology. A good learning facilitator helps team members recognise and take advantage of the incidental and unexpected learning that they gain along the way. This requires keeping your eyes and ears open, being aware of changes in the way individuals talk about their work, and asking questions often.

Finally, a learning facilitator helps to provide a sense of closure. Projects that are not formally ended can leave participants with a sense of something unfinished which in turn can make it difficult to recognise and value their achievements. Having a final meeting at which the project is formally announced as complete is important (even though the learning may continue afterwards) and generally coincides with the end of the funded activities. This meeting is where the learning facilitator encourages each team member to recognise the planned and incidental learning that has taken place, to celebrate the hard work and energy they have contributed and also the fact that *they* were the ones who achieved the outcomes. Work-based learning is not easy and each team member should feel proud of their achievements even though each has accomplished different things.

### Specific challenges of facilitating work-based learning

There are many challenges common to the facilitation of any group activity but there are others that are more obvious in work-based learning. One of these is unpredictability. Unlike structured classroom based learning, work-based learning gets interrupted, reprioritised, forgotten, redirected, and rarely proceeds exactly as planned. The facilitator needs to reassure team members that its OK to make changes to their learning plans when the context around them changes. Work-based learning has to be fluid and dynamic to survive the environment in which it is taking place. However, the facilitator must be on guard that any changes don't result in the team members being distracted or diverted from the overall aim of the project. All modifications to their learning plans need to be purposeful and focused on achieving the project outcomes.

Another challenge is to maintain the profile and priority of the work-based learning. Because the learning is integrated with work, and because individuals are generally more comfortable with their work than they are with the unknowns of learning, and because it's often invisible to colleagues, work-based learning has a tendency to degenerate back into just work. Only the individual can prevent this from happening but the facilitator can help make them aware that it is occurring and develop strategies to reprioritise the learning back to higher profile.

Communication is the third big challenge for learning facilitators. This is specially so when the work-based learning team is made up of many independent individuals each working on their own project. In this context the purpose of team meetings can be misunderstood leading to them being seen as unnecessary and as an interruption, hence the facilitator needs to make the value of the team meetings clear as well as find other communication strategies and ways of sharing learning among team members. Its through the dialogue that takes place in team meetings that the facilitator helps ensure the individual team members keep focused on the 'big picture' of the project and provides the opportunity to gain different perspectives on their newly forming understandings.

Perhaps the most important challenge for the learning facilitator is to help the work-based learning participants recognise their learning. This involves conversations peppered with critical questioning to draw out and make explicit the learning that has taken place and implications of that learning. These 'learning conversations' are perhaps the most valuable that a facilitator will have with the participants. Without them it is possible that the participants will not recognise how new understandings may affect their future teaching and learning practices; they may fail to consciously and deliberately take their new understandings into account.