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# One size doesn't fit all

Pedagogy in the online environment – Volume 2



*Roslin Brennan*

**Australian Flexible Learning Framework**

Supporting Flexible Learning Opportunities

[flexiblelearning.net.au](http://flexiblelearning.net.au)

## **Publisher's note**

This report is published in two volumes: volume 1 contains the main report, while volume 2 contains the appendices. Volume 2 can be found on NCVET's website <[www.ncver.edu.au](http://www.ncver.edu.au)>.

## **Background**

In August 1999, the Australian National Training Authority chief executive officers endorsed the *Australian Flexible Learning Framework for the National Vocational Education and Training System 2000–2004*. The Australian Flexible Learning Framework has been developed by the Flexible Learning Advisory Group and represents a strategic plan for the five-year national project allocation for flexible learning. It is designed to support both accelerated take-up of flexible learning modes and to position Australian vocational education and training as a world leader in applying new technologies to vocational education products and services.

An initiative of the Australian Flexible Learning Framework for the National Vocational Education and Training System 2000–2004

Managed by the Flexible Learning Advisory Group on behalf of the Commonwealth, all states and territories in conjunction with ANTA.



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ISBN 1 74096 163 3 web edition

TD/TNC 73.293

Published by NCVET

ABN 87 007 967 311

252 Kensington Road, Leabrook SA 5068

PO Box 115, Kensington Park SA 5068, Australia

[www.ncver.edu.au](http://www.ncver.edu.au)

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# Appendix 1: Interviews with policy-makers, practitioners and online learning managers

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The literature review for this study demonstrated that the subject of online pedagogy is complex and multifaceted. For this reason it was important to capture the voices of a variety of people working in the online environment in a range of different capacities. Their reactions to the research questions and the general topic of pedagogical effectiveness informed the development of the pedagogical effectiveness indicators that began with the literature review, clarified the focus areas for the questionnaire and contributed to the development of the working framework.

The discussions of online pedagogy with the interviewees (For a list of interviewees see the chapter describing the methodology adopted for the project in volume 1.) and the propositions they advanced are presented in this section of the report. The interviewees were asked to comment on the research questions.

The excerpts from the interviews which appear in this section are illustrative of the issues that emerged from the discussions.

As noted in volume 1 of this report, the interviews were conducted with policy-makers, practitioners, curriculum designers and managers, all of whom were involved in one way or another in online delivery of VET.

## Interview results

### What pedagogical assumptions underlie online delivery of education and training?

The participants agreed that there is a range of underpinning assumptions underlying pedagogy in an online environment. The extent to which these principles are either explicit or clear was a question of contention, with some participants maintaining that the lack of definition and agreement between the sectors involved in online support and delivery contributed to an incoherent pedagogy. They regarded online pedagogy as an area where materials are designed and delivered before sufficient research analysis of needs has been undertaken. They also agreed that this question is not often explored and that there is a need to ‘get under the practice’ to assess the validity of policy decisions being made.

The issue of what constitutes real pedagogical practice is further complicated by the different modes of online delivery of education and training and the consequent differences in pedagogy which accompany these. The gap between the ‘idea and the reality’ creates a lot of unclear thinking and ineffective practice. Reporting from a project and policy position which he saw as very different from that of the practitioner or student, one of the participants summarised this confusion in the following way:

There are definitely two forms of online delivery: the formal—the new form of distance education and the delivery of resources online on the assumption that instruction occurs at the recipient point rather than the sending point. The sets of assumptions are quite different and the issues are quite different and in the discussions, the two forms are interchanged and sometimes muddled. Dealing with the first one there is in Australia generally, a good deal of

fuzziness and confusion to do with issues relating to pedagogy. Often in policy documents we make assumptions about pedagogy and they are carried by the kind of ‘secret garden’ language of the cabal that runs things. There are words like ‘constructivism’ and a whole set of language which policy-makers use and wish characterised pedagogy.

In fact most of those things don’t characterise pedagogy. Equally in the online environment I think there is a wish to enact that same set of assumptions ... the reform assumptions about pedagogy and it is extraordinarily rarely done, in the online environment even more perhaps than in the traditional delivery modes. There is a disjunction between the reform pedagogy assumptions that policy-makers hold and what actually happens. And it is not surprising because in the online environment it is shockingly difficult to get beyond transmission.

The participants discussed the issue of online pedagogical assumptions and the following section represents their contributions to ‘getting under the practice’. They discussed assumptions about:

- ✧ the learner and their skills
- ✧ the ‘art’ of teaching
- ✧ formal and informal learning
- ✧ learner control
- ✧ the role of the teacher
- ✧ sustainability.

### *Assumptions about the learners*

Participants felt that the online learner is assumed to have a degree of independence about their own learning which equips them to be persistent and consistent learners. Learners are assumed to be comfortable and confident with the medium.

Online assumes that people are self-motivated and self-regulated learners and that what they need is assistance in structuring their learning rather than just taking it in.

Some interviewees felt that online pedagogy should be based on principles of adult learning, experiential learning and discovery learning. These principles should form the basis of a coherent online pedagogy. The extent to which practice matches expectation is a matter for scrutiny and evaluation. It is also assumed that learners have the higher-order cognitive skills and processes that equip them to navigate and construct meaning for themselves. Literacy and numeracy skills are also assumed. Since the medium is often print-based and instructions are generally given in words, learners must have adequate skills to allow them to process the information quickly and accurately.

Learners must be good ‘comprehenders’ and be able to skim and skate across information easily. It is also assumed that their levels of critical information literacy allow them to make judgements about the relative value of information accessible on the internet. This is particularly relevant when the assumptions behind the learning activities are constructivist rather than transmission-oriented. It is also assumed that the learners’ preferences and styles match well with the demands of the online environment. People need different kinds of guidance and support at different stages of their learning.

### *Summary*

The participants interviewed commented on the difficulties involved in moving beyond the principles and practices of transmission pedagogy in an online environment. The proliferation of the forms of online delivery and support for learners has introduced an incoherent set of ideas and practices. In contrast to this, participants identified the pedagogical assumptions that underlie sound teaching and learning practice. The assumptions in relation to the learner are as follows:

- ✧ They have independent learning styles.
- ✧ They possess high levels of critical information literacy.
- ✧ They have strong levels of persistence.
- ✧ Learner styles and preferences are catered for.
- ✧ Literacy and numeracy skills match the demands of the medium.
- ✧ Learning should be experiential and constructivist.
- ✧ Online learners are self-regulated and self-motivated.
- ✧ Online learners are confident with the medium.

### *The art of teaching*

Participants felt that the online environment is a very different teaching and learning context, requiring particular and new skills. The speed of change and the consequent lack of time for teacher reflection has militated against the ‘quantification of the science’ of teaching.

It is fundamentally important that we understand that there is an art to delivering learning experiences online. Teaching skills are fundamentally important in VET. There is a commitment to have pedagogical underpinnings in CBT [competency-based training] and we need to know best how to facilitate people’s learning in this environment.

Participants acknowledged that the acceptance of the idea that online pedagogy is an art is slowly emerging and that the process of identifying underlying pedagogical assumptions is an evolutionary one.

We started off with a basis that this was just distance education which largely in the past had been print-based. This does not sufficiently use or exploit the technology. This is the way we began but it is not a good way of using the technology. All it does is deliver the printed word in a different format.

If pedagogy is the art of understanding learners and the learning process and continually trying to find ways of providing experiences and information and support that continually help people to learn then intuition, sensitivity and care are qualities of teaching practice. These ought to be the assumptions that underpin effective online delivery.

The following reflect the pedagogical assumptions that underlie the ‘art of teaching’ online:

- ✧ Teaching practice is underpinned by intuition, sensitivity and care.
- ✧ New skills are required.
- ✧ Speed of technological change will be accommodated.
- ✧ Online teaching takes place in a competency-based training framework

### *Assumptions about access*

Participants reported that the access and opportunities created by the new technologies are both attractive and overwhelming. Sometimes the features of the technology are so intimidating that the principles of effective teaching are dissipated. The pedagogy is characterised by a range of potentialities which are not yet tested or systematically evaluated. As a participant commented:

One of the assumptions is that the technology is providing access to heaps of people who haven’t had access so there is a bureaucratic driver sitting in the background which says we have the internet we should be able to use it to provide learning to people who cannot get to their formal classes. People are not really thinking about what they are doing; they are just thinking they can put it up on a website and if there is a chat room then I could use the chat room to encourage some kind of social interaction between people. Maybe it’s going to open

up new ways in which my students can interact with one another. People sit down and try and look at what they are currently doing and try and plug it into what is available technologically without thinking too much about what they as a person and their students actually prefer to be doing.

The list below sets out the online pedagogical assumptions that participants felt related to access:

- ✧ There is a variety of technologies available to be used.
- ✧ Students are being provided with unlimited opportunities.
- ✧ Transferring print-based material to the web is equivalent to learning.
- ✧ Reflection and evaluation are limited.

### *Assumptions about transferable skills*

A number of participants commented on the common pedagogical assumption that the skills developed by competent teachers in more traditional teaching and learning situations can be easily transferred to an online environment. A number felt that this was a misinterpretation of both the medium and its possibilities and accounted for some of the less effective current practice. By way of example, one of the interviewees described the development and provision of the Certificate IV in Adult and Community Education in Victoria.

The students in this course were part-time teachers geographically spread across the state. In terms of their abilities and enthusiasm for learning, they were an ideal audience for online delivery. The following description highlights the ways in the skills traditionally contributing to effective pedagogy do not always match the pedagogical skills required for successful online delivery.

The process of putting the materials online went from using one of the expert deliverers with sound teaching practices behind them ... but it didn't work. Then we used a librarian to design the materials and that didn't work either. Then we found a person who could publish things with graphics and a nice chatty style and who knew what it was like to be totally isolated and the kinds of weird questions that people ask and who could try and understand the processes from the learner's perspective.

It comes down to the fact that because someone is a great classroom teacher, people say they have the ability to transfer these skills to an online environment. There are a whole new breed of people who have desktop publishing skills that can make things interesting and fun. It is a whole new style of producing and delivering material to the style of that which has characterised being brought up in the education sector.

The participants felt that general classroom educator does not necessarily have those sorts of skills or predispositions.

The following are pedagogical assumptions about transferable skills:

- ✧ New skills are required for materials design online.
- ✧ New styles of production and delivery can, and are, being used.
- ✧ Teachers can move from a face-to-face or a distance education environment to online easily.
- ✧ Students who regard themselves as competent information technology users can move to formal online learning easily.

### *Assumptions about formal and informal learning*

Some of the people interviewed felt that online delivery is based on the assumption that the formal aspects of learning are pre-eminently important. In some aspects, despite its capacity to



communicate, the application of technology to learning has isolated learners from the informal dimensions of their own learning. This is particularly the case in adult and community education.

A lot of the informal dimensions of learning are discounted by the medium and what a lot of adult learners crave is the contact with others with whom they can share the flow-on effects of their new learning. Organising child care, sharing a casserole and talking about the impact of their learning on their personal and family relationships are crucial aspects of adult education. For those returning to learning in this situation, the traditional lack of threat and the high level of social interaction have been the jumping-off blocks to confidence and then progress into more formal accredited education and training.

This informal dimension of the technology needs attention. The potential has not been adequately explored and a lot of students are sorting these arrangements for themselves technologically. No real system is helping them to do this. There is a need for interaction, not materials produced electronically. The preference is still for real contact between learners.

The assumption that we need to meet the personal and social needs of the learner in discussions of online pedagogy was reiterated.

In some ways the technology has created bigger distances between learners as it is seen as a solution. We can produce the cocoon of learning and you need never move beyond your screen. Replicating experiences and realities when they all exist out there. We just have isolated tutors who are pumping out a whole lot of stuff with no thought of where they live and what other resources sit around them that can be used to assist their learning. We need to design the levels of interaction so that they are manageable—to break students into smaller groups and ask for collective responses and actually shared communication. The chat group approach is one that you can clearly take.

Most online materials at the moment are driven from a publishing or a broadcasting perspective. They do not have the sophisticated approaches that you would expect to happen in a classroom. Being able to break students and then reform them into whole group at my discretion and on the basis of my good judgement is not available. That kind of dynamic communication capacity is just not present in the learning products that you tend to see around.

Where people are moving from text-based delivery towards the inclusion of audiovisual is reflective of the way you see things being delivered on broadcast television, rather than presentations or interactions that are enhanced by the addition of vision or sound.

One participant mentioned that a facet of pedagogy embedded into sound practice is the capacity for experimentation by making ‘mistakes’—by learning in ways beyond the simple tick/flick and repeat of materials. The opportunities for students to experiment and get things wrong is only just beginning in the online environment. This is particularly relevant to the types of assessment strategies used online.

### *Summary*

Online pedagogy makes some assumptions about the balance between, and relative importance of, informal vs. formal learning. The following points illustrate these:

- ✧ The personal and social needs of the learner must be accommodated.
- ✧ Most current online materials are designed around publishing or broadcasting principles.
- ✧ Online dampens the student–teacher response level.
- ✧ Formal learning is pre-eminently important.
- ✧ Online delivery isolates learners from informal and social learning.
- ✧ Opportunities for successive approximations must be created.

## *Learner control*

Research indicates that learners do not want to lose control over their own learning and they do not want to lose the social interaction embedded in informal learning. Eighty per cent of adult learning is incidental and non-formal and the online environment does not always acknowledge or build on this assumption. One interviewee commented that:

The extent of learner control in an online environment is highly restricted and not always attractive. People are a lot more independent than this. There is a real danger in thinking that if they are not enrolled they are not learning. This is just not true and the nature of the medium mitigates [*sic*] against the sense of learning independence which is now available.

The idea was raised that there is a continuum of desired control over the learning that is taking place from the novice learner through to those who are assertive learners and who know exactly what they want and which pieces of material to select to achieve this learning.

Perhaps what we need to be looking at are 'blended' learning situations incorporating all the different learning modes that are now so wonderfully available.

Online pedagogy makes some assumptions about the degree of control learners have over their own learning. These are summarised below:

- ✧ Transmission model of delivery and assessment applies.
- ✧ Learner control is highly controlled in terms of sequencing and presentation.
- ✧ Offering navigational choices equates with greater learner control.

## *Assumptions about the teacher*

There is an increasing gap between where the learners are, both physically and intellectually, and where the teachers and trainers are physically and intellectually. There is an increasing proliferation of all kinds of offerings which impacts on the way formal provision occurs.

In particular, some of the commercially produced resources and courses assume the absence of a teacher.

The potential of online offerings to bypass the teacher altogether. And there are examples of some commercial products which explicitly seek to do that. We need to think about this a lot and we don't because there is this kind of holy view of teachers. It is a matter of being clear about the role of the teacher and of pedagogy. The social context of education really needs to be thought of in every situation but this is so much more the case in an online environment.

The online environment seems so more engaging, interactive, pretty and attractive, and there are such ambitious hopes for what you can do online. However, we need to keep in mind that learning is a human interaction. There is something in the relationships between the teacher and the learner that you can't do away with just by clever technology.

This view of the centrality of teacher–student interaction in any conceptualisation of online pedagogy was challenged by one participant. The role of the teacher was seen as a stumbling block to the development of a more coherent online pedagogy.

One of the assumptions is that we can't move teachers out of their existing comfort zone into a potentially dynamic teaching environment. In this process of change we are asking people to move from an existing pedagogy into a pedagogy which supports both an online and a traditional environment. The underpinning assumption is that this change needs to happen over a period of time and it needs to be fairly well supported. A lot of the techniques that have been used in the past have not worked very well. Students are looking for a much more dynamic and interactive approach to their education and training. A much more student-centred approach.

The online materials make varied pedagogical assumptions about the teacher as shown below.

- ✧ Some commercial products are 'teacher free'.
- ✧ There is an increasing gap between teachers and students.
- ✧ Relationships between teachers and students are crucial to effective learning.
- ✧ The teacher is absent.

### *Assumptions about sustainability*

While most online materials are currently driven from a publishing or broadcasting perspective, the participants were adamant that students demand new services in new environments.

There tends to be the assumption that one of the major objectives is to reach large numbers of people with the same kind of message but it is individualised instruction that students tend to want. They tend to want to have something delivered to them that is relevant to their particular needs. This takes you down the path of trying to find multiple pathways to deliver highly individualised learning. The kind of communication activity that tends to be generated can be overwhelming. Pedagogy and design principles tend to be unsustainable.

One participant recounted experiences associated with the NSW TAFE online project to illustrate how the technology creates assumptions about the sustainability of teacher practice.

When we have engaged teachers in the development of interactive resources, their first inclination is to create resources that are highly interactive and stimulate a great deal of response from the students. The teachers believe quite rightly that this is good teaching practice; sound pedagogy. But the consequences of those designed approaches tend to be that the teachers get overwhelmed by the amount of communication that is generated. Teachers and trainers have shown signs of moving into a second phase of pedagogical practice which is actually to reduce the amount of interaction that is embedded.

The answer for these enthusiasts, is not simply to replicate what they understand as good face-to-face interaction by embedding communication strategies into the courses and resources, but to reinvent a pedagogy which suits the environment and the capacities of the teacher better.

The following are the essential elements of such a strategy as identified by the interviewees:

- ✧ high levels of interactivity
- ✧ multiple learning pathways
- ✧ reach large numbers of students
- ✧ high levels of interactivity.

**What are the teaching and learning areas for which online delivery is best suited? For what areas is it not suited?**

Participants felt that some discipline areas are ideally suited to fully online delivery. Information technology, administration and business are examples of these content areas. Other areas are partially suited and in these areas online delivery should complement other forms of presentation and interaction. Content that is heavily theoretical lends itself to online delivery. However, in subjects where there is a strong emphasis on practical skills and a necessity for on-the-job training, online delivery becomes difficult.

Ideally there should be nothing that cannot be taught online providing that we take advantage of the facilities and developments as they occur. However, the need for personal interaction and communication is strong and the mixture of online and face-to-face seemed to other respondents to be crucial if students were going to persist and complete their courses. Respondents identified a

number of issues relating to the suitability of content. These include learner styles and preferences, blended learning, continuum of content difficulty and issues relating to feedback to students.

### *Learner styles and preferences*

Learner styles and preferences were seen as critical issues by the participants. The ability to respond to individual student learning needs in a timely and appropriate way did not always characterise online delivery of education and training. Student learning was compromised as a result. However, this criticism was not restricted to the online environment and a large number of traditional practices have been submitted to pedagogical scrutiny as a result of the discussions of online delivery and support for students and their learning.

There are probably very few areas that it is not suited to. It is far more likely to be suited or not suited to the learning style of the student. If we are talking about VET where students are being required to demonstrate competence in the workplace or the simulated workplace, there are probably areas that need to have consolidation and time in actually practising those skills in an actual workplace. In initially learning skills, the idea of using virtual reality can probably do a lot in early development or some practice, or trying things that you couldn't actually do in real life.

In terms of learning styles, considering how much research has been done over the years, it is amazing how little we take notice of the findings in terms of delivery of any form of education and training. Largely people sit and are talked to. It has been well and truly proved time and time again there is very little retention from that form of learning. An appropriate mix of learning opportunities needs to be given. The right mix will be the right mix for them. Students need to be able to access learning in a number of different ways, which do suit their learning styles.

One caveat to this is that some students have no explicit knowledge of their own learning styles and no adequate language to describe them. If they are physically removed from their teachers and trainers, this problem is exacerbated. There is a real need to help students understand their own learning styles and create learning opportunities for them based on these.

### *Blended learning*

While content suitability is an issue in online delivery, a number of participants felt that this was secondary to the need to 'blend' various opportunities for learning to maximise the experiences for learners.

If we adopt a blended learning-type situation then there is no reason why certain parts of the learning cannot be online. The technology can facilitate and complement all forms of learning and all content. The issue is the mixture of modes that are used. If we use the available methodologies and make them into a type of clothing that suits the learner then we have succeeded. It has to be a process of mix and match.

In all facets of education and training most learning requires some kind of practical demonstration of capacity and competence. Therefore, a mixture or blend of modes of delivery and assessment is necessary.

Online is very useful where the content expertise or the teaching expertise is scarce, where a particular student who wishes to study can have contact where previously this was not available. However, it is a two-dimensional medium at this point in time and it's two feet in front of your nose. This is not actually the way to experience all aspects of something.

In the VET sector this was felt to be particularly relevant. There is a view that competency-based training has reduced the complexity of learning by making competencies highly explicit at every level. The assumption is that competencies identified in this way, can be easily transmitted in an online environment.

In training where the model used is competency-based, there is a superficial attractiveness to delivery online. It actually makes the delivery of training online appear easy. However what you can do is deliver resources online and the role of the teacher is to enrich the student and trainee understanding of concepts.

### *Continuum of learning difficulty*

Participants felt that some subject areas where interaction is fundamental to the process of learning were not well suited to online delivery as it currently exists. The level of complexity of the material is also important. The more complex the concepts, the more difficult the delivery becomes using current pedagogy.

Where the intellectual domain of the content is relatively robustly understood the more likely that you can do quite helpful stuff online rather than in areas where the content is less well understood and shared, or in areas where the content itself is secondary to the interaction that occurs.

### *Issues of feedback*

The young learners coming in the assumption that they are going to be highly independent, highly motivated and self-supporting is not supported. For these young people the need for pedagogical teaching is very clear. Highly structured, supportive role-modelling by the teacher.

There is still a lot of work to be done in exploring where the technology can in fact enhance the learning.

Unless the technology is amplifying and adding to the current practice then I am not sure that there is value for money. It has great value in networking students but I would be very concerned if all we were doing was taking text books and putting them online. Its about providing opportunities that didn't exist in the past such as communication, linking with experts, linking with other students and knocking down the physical boundaries between students and their teachers and trainers.

### *Summary*

The following list illustrates respondents' opinions about the factors influencing suitability of content for online delivery:

- ✧ level of complexity of materials being delivered
- ✧ level of student understanding of their own learning styles
- ✧ degree of interaction demanded by content
- ✧ capacity to respond to individual student needs
- ✧ age and maturity of the learners
- ✧ degree of blend of different modes of delivery
- ✧ degree of match between student learning styles and materials delivery.

### *What teaching and learning styles facilitate reflective online learning?*

Reflective learning goes beyond the absorption of information to the embedding of the new information into existing learner knowledge. It involves the ability to critically analyse and synthesise new information so that it becomes either procedural or declarative knowledge that can be called on by the learner to inform the decisions they make about their work or their life. The participants felt that currently, online delivery and support for VET can do this in a number of ways:

- ✧ Transmission of information *en masse* suits some learners who prefer to read, interpret and work at their own pace.

- ✧ Online learning provides multiple opportunities for communication and interaction.
- ✧ Constructivist approaches are well suited to the medium.
- ✧ Questioning encourages reflection.
- ✧ There are opportunities for group work and online collaboration that can be fostered.
- ✧ Logs and journals online can monitor and support students' learning and encourage reflective learning.
- ✧ Having activities linked to outcomes encourages online learning.
- ✧ Having courseware which engages the students in the learning process is desirable.

However, they placed a number of restrictions on the effectiveness of current practice. Firstly reflection needs to be guided and supported.

I have seen resources online which in the hands of a good teacher would be immensely useful in encouraging students to become reflective. The role of the teacher or trainer is still crucial in providing the feedback or illuminating the issues. People don't map their own learning on their own unless they are very sophisticated. I haven't actually seen anything in online delivery that could achieve this outcome.

All of the approaches which participants suggested as encouraging reflective learning are contingent on teacher commitment and knowledge of the capacities of the medium. The issue of the time-hungry tendencies of the medium was mentioned frequently.

Ultimately, the test of the effectiveness of the medium in delivering reflective learning can only be measured through assessment and evaluation strategies. These are as yet poorly developed.

This could only be evidenced by the development of appropriate response mechanisms between the student and the educator. We need to look very closely at the assessment tasks and to try and capture indicators that those objectives and outcomes had been achieved or worked towards. This requires prolonged dialogue and communication which are not always part of the assessment process. We need to stimulate responses from students that indicate that such reflective learning has taken place. And that new viewpoints have been reached.

Respondents discussed the teaching and learning styles that are likely to lead to reflective learning in the online environment. These are summarised by the points below.

- ✧ groupwork and collaborative exercises
- ✧ assessment tasks that map learning beyond factual regurgitation
- ✧ online activities linked to outcomes
- ✧ student awareness of their own learning styles and preferences
- ✧ transmission for learners who prefer reading
- ✧ online journals encouraging reflection
- ✧ teacher as a guide and scaffolder of student learning
- ✧ commitment to communication and interaction
- ✧ constructivist approaches.

### What interactions (at the individual learner level) are most effective in contributing to online learning?

All participants thought that one-to-one teacher–student interactions are critical to individual student achievement. Regular contact is important, as well as timely feedback and consistent interaction. The facilitator needs to have a positive attitude and be a good online communicator.

Student-to-student interaction is also important in building up the virtual learning community. Humans still learn best when they are in contact with their teachers and their peers.

The formation of online communities is an essential precondition for effective online learning. Participants maintained that a sense of community reduces learner isolation and reintroduces the vital social and affective dimensions of any learning.

In terms of the online community, it is about building confidence and a comfort zone so that people feel that they are and can be a contributor to the conversations that are taking place. People need to feel confident about being part of the online community. You need people who are very good at facilitating discussions and structuring them in such a way that learners feel comfortable about being contributors.

The consistent theme in the responses to this question is the need for regular and developmental communication between all of the online participants. This involves new roles for both students and teachers and training in the area of online facilitation.

We simply cannot assume that people have either the skills or the confidence to take on these new roles. This applies equally to teachers and students.

The following are individual learner interactions that are most effective in contributing to online learning:

- ✧ online community of learners
- ✧ one-to-one teacher to student contact
- ✧ regular and developmental contact between all group members
- ✧ student-to-student interaction.

## How does online affect the role and the skills required of those involved in the learning process?

A large number of people are ill-prepared for their new roles and many teachers speak of their increasing sense of deprofessionalisation. On the other hand, participants felt that learners need to develop more independent learning skills. Both these perspectives imply new roles and skills for teachers and learners online that were reiterated by participants.

Teachers need to be able to step back from the traditional view of learning and teaching and be prepared to take on a more facilitative and communicative role. They need to be practitioners in the use of the technology. They do need to have a level of skill and a level of understanding of the potential of that technology and how it can lead to outcomes. Students may already have the skills. There are a lot of management skills that are important as well. When you introduce technology into your pedagogy there is a fair bit of management that has to be done. The management structure changes under the influence of technology and you have to develop new strategies for managing the classroom other than the ones that you have used well up until now.

One participant felt that the age of the teachers using the technology was a critical factor in discussing their roles and skills.

Younger teachers are going to expect to use technology as part of their teaching and training. If we structure the tools right there will be a quite rapid transformation in the way in which teachers feel about technology and use technology.

A second question was posed to the participants to uncover some of the new expectations of teacher and student skills and the consequent changes in their respective roles. Participants were asked how the skills and roles are different from those required in more conventional educational settings.

The responses fall into the following categories:

*Technical skills:* the ability to know how to use any of the technology that might be useful in an online arena

It goes beyond computers to telephony, messaging systems and other forms of converging technology. These are all relevant to the ways we might communicate with one another in new teaching and learning situations. The technologies at the moment require levels of expertise that it is unreasonable to expect every teacher to have. The type of network connection skills, the maintenance of networks, rebooting systems have got to be present somewhere. It is probably unreasonable to expect teachers to have those.

*Communication skills:* the ability to facilitate and respond to students needs

The areas where teachers will definitely have to develop new types of expertise are in the communication areas where the technologies are allowing teachers to use audio with graphics, synchronous and asynchronous video streaming. There are learning objects embedded in the kinds of learning resources that are being produced these days which might be manipulated by teachers to effectively communicate with their students. So the ability to use flexibly all the resources that are embedded in learning materials is an important skill that people have not really yet come to grips with.

*Management skills:* managing time, resources and new interactions

The kinds of tensions emerging in the teaching and learning areas relate to balancing individualised communication and teaching as opposed to the kind of aggregated approach that we see in most classrooms where the teacher is often transmissional in the way they present.

*Reconceptualisation skills:* the ability to adapt to new curriculum and pedagogies and rethink relationships between teachers and students and respond accordingly.

Participants felt that it is inevitable that curriculum content will change more rapidly than in the past.

There is a need to promote collegial relationships between teachers and the allocation of responsibility. Mentoring and collaborative activity is an absolute necessity. The bunkering down between teachers will need to change.

There is a need to reconceptualise how learning occurs and how we deliver to match these needs. There is an accompanying need to move away from the linear approach to teaching and learning.

There are some students who are able to move into an area of learning and learning very quickly while others have a preference for moving methodically through materials and we haven't come to grips at all with what kinds of design rules we need to use to achieve this. Pathways through learning courses are needed and we haven't come to grips with this yet.

Interviewees listed the following factors as influencing the roles and skills of participants in the online process:

- ✧ level of organisational and managerial support
- ✧ level of independent learning skill
- ✧ level of personal management skills
- ✧ ability to reconceptualise roles
- ✧ level of comfort with a facilitative style of teaching
- ✧ level of familiarity with the technology.



## What relationships exist between the pedagogical features and world's best practice in online delivery and how does it incorporate these understandings?

All those interviewed struggled with this question and commented on its difficulty. As one participant commented:

If I knew that I would be wealthy!

Some maintained that world's best practice was concerned with progressively improving practice. They admitted that:

... there is still a lot of ground to be broken in this area and that world's best practice is difficult to identify.

The issue is further complicated by the fact that some courses and resources have the best and the worst embedded characteristics in them.

Some aspects are excellent and others are poor and these maybe contained within the same learning package.

The respondents agreed that there is still a strong focus on delivery 'getting the message out and about', and as a community we have not decided clearly on the criteria for judging pedagogical effectiveness. The reason for this lies predominantly in the fact that content still drives the process and procedural knowledge remains a poor second to content.

Some of the best practice that I have seen in relation to online learning has actually started with pedagogy, has actually asked people to go back and rethink teaching and learning and questioning the philosophy which they may be using. Best practice or preferably good practice has a lot to do with people reflecting on their current pedagogy and being open about some of the pedagogies which they may not be engaging in at the moment. Best practice has a lot to do with being clear about the outcomes.

One participant maintained that it is world's best practice online if people are:

- ✧ still learning
- ✧ recognising how little they know
- ✧ searching for information
- ✧ reflecting and getting feedback at every opportunity
- ✧ talking to students
- ✧ trying new things
- ✧ reflecting
- ✧ open to new ideas
- ✧ engaging in a process of continuous improvement.

Another respondent commented that world's best practice online is:

Based on understanding their learners and providing their learners with what they need and using technology in innovative ways, then that is what we should be looking for.

We have done quite a lot of work in this area both in terms of delivery and resources. I am optimistic about the potential for high-quality resources to be available online that could be quite transformative for teachers.

Understanding the potential of the technology and allowing students to have multiple pathways by which they might achieve the competencies or outcomes was thought to be another feature of

world's best practice. The opportunities for students to explore, experiment, discover, amplify and extend characterised the best pedagogical online practices.

Another participant articulated the criteria against which the technology should be judged. In this way, world's best practice would include the following benchmarks:

- ✧ an understanding of the characteristics of the students that the educator is trying to reach
- ✧ the variety of learning opportunities and situations and pathways that are appropriate to the different characteristics that might exist
- ✧ management approaches with those students that permit communication to occur in a manner that again is appropriate to the needs of the student and that can occur synchronously or asynchronously
- ✧ pedagogies that direct the student towards real as opposed to virtual or telecommunications-based experience.

Respondents felt that world's best practice in online delivery was characterised by the features listed below:

- ✧ understanding and using the potential of online delivery
- ✧ learners reflecting and getting feedback
- ✧ understanding the student cohort
- ✧ engagement in continuous improvement
- ✧ learners learning
- ✧ beginning with pedagogical considerations
- ✧ focus on communication and interaction
- ✧ provision of multiple pathways to learning
- ✧ innovation and evaluation.

## Discussion

The people interviewed displayed expertise in a range of online areas. They agreed on the importance of pedagogical issues but disputed that this area had coherence or clarity in the current environment. The interviewees agreed that current practice is underpinned by a range of implicit pedagogical assumptions that may not match with teacher capacity, student ability or course design and content. These assumptions include the need for student confidence and independence; high levels of literacy and numeracy skills; strong levels of persistence, and the ability to cater for learner styles and preferences.

From the perspective of the teacher, those interviewed identified that the technology assumes new skills and an ability to accommodate rapid change within a competency-based training framework.

The participants discussed the potential access created by online delivery and commented that the assumptions made did not always reflect effective pedagogy.

The importance of both formal and informal learning, as active components in an effective pedagogy, were discussed and this is an area needing far more design and curriculum attention. The participants also commented that current online pedagogy limits learner control. The teacher is often assumed to be absent in online delivery and the increasing 'gap' between teacher and student needs to be reconceptualised.

The people interviewed in this section confirmed the significance of the pedagogical indicators retrieved from the literature review. Apart from reiterating the importance of the pedagogical effectiveness indicators, participants also raised issues relating to the:

- ✧ predominance of a transmission/broadcasting pedagogy in online delivery of VET
- ✧ assumptions about learner characteristics that are not always supported by the realities of teaching and learning
- ✧ challenges of working in a competency-based training online context
- ✧ unrealised pedagogical potentialities of online delivery
- ✧ need to recognise and reiterate the social dimensions of learning
- ✧ need to support students through an analysis and appreciation of their own learning styles
- ✧ suitability of 'blended' learning opportunities for most students
- ✧ complexity of determining VET content suitable for online delivery
- ✧ impact of age profiles on online teaching and learning.

Participants also talked about the issue of 'transferable skills'. This was a relevant discussion given the focus in this project on applying the productive pedagogies framework to the data collected.

Participants reinforced the importance of skills reported on in the literature; that is, technical skills, communication skills and management skills. However, the acquisition or possession of specific new skills was recognised as only the first stage in a discussion of online pedagogy. Participants also described the need to go beyond these skill descriptors and critically analyse the totality of the learning experience. The framework of the 'productive pedagogies' described in the chapter entitled 'A framework for online pedagogy' (in volume 1 of this report), offers a way of moving beyond 'those things that don't constitute pedagogy' to a holistic appreciation of online pedagogy.

## Appendix 2: Workshops

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The workshop participants focussed on the six research questions in order to test the pedagogical effectiveness indicators derived from the literature review and stakeholder interviews. The draft questionnaires were also developed and then examined in terms of their ability to make explicit the pedagogy of online delivery. The discussions raised sets of interrelated issues that have been organised around the research questions and participant voices are recorded in italics throughout this chapter.

The workshops were held at the Western Institute of TAFE, Orange, New South Wales, Canberra Institute of Technology and Holmesglen Institute of TAFE, Holmesglen, Victoria. The workshop participants included teachers of online courses and subjects, educational designers, web managers and staff trainers responsible for teaching online teachers about the online environment.

These individuals were 'experts' in their fields and can be classified as enthusiastic 'early adopters' of online teaching and learning. It is important to note that their attitudes and knowledge do not necessarily reflect those held by the majority of teachers and trainers. However, as individuals, they have had the experience and capacity to stand back from the rush of technology and comment credibly on their own experiences and the reported experiences of others.

### What are the pedagogical assumptions that underlie online delivery of training?

The pedagogical assumptions raised by the participants have been collected under the following headings: speed of change, imposition, 'print to screen', reflection, theories of constructivism, the 'enthusiasm factor', student characteristics and work patterns. These groupings reflect both the environment in which online delivery of VET is situated and a critical evaluation of the resultant pedagogy as it currently exists.

#### Speed of change

Participants agreed that the idea of a coherent online pedagogy was crucial. They discussed the need to develop principles and practice guidelines that considered not only the materials and the students, but also the practice of the teachers involved. However, they recognised that there were certain obstacles to this process. One of the identified obstacles was considered to be the rapid acceleration of change in the technology itself, and the disparity of skills and exposure to the media affecting both teachers and students.

People don't have the time to sit and reflect, to absorb new knowledge and reflect on their practice. You have to dive straight into the course and you sometimes learn the best way you can through a seminar here or there.

There is an obvious tension between the need to evaluate effectiveness and the competitive edge created by technology that creates a constant sense of urgency on all involved.

If we don't get in there and do it we will miss out.

One participant summarised these assumptions as the ‘Bill Gates pedagogy’ where:

... you don’t have to be best, just first. Our imperative as teachers is that we want to do the best we can but why take time for quality when speed is the driver?

## Imposition

Participants felt that online pedagogy was often framed by the software and then consolidated by the exigencies of time. One explanation of these practices rested with increasing casualisation of staff.

The trouble with trying to characterise online pedagogy is the assumption that you can characterise it and you can make logical sense of what is happening and then transform it into work design for teachers who can then organise their work around it. Well that’s completely contradictory. The residual activity is making your pedagogy fit into a particular framework determined by the software adopted. WebCT which we use here is a classic example because it is a kind of forced pedagogy.

The apparent willingness of teachers to accept the prepackaged materials with minimal pedagogical input on their part is explicable in terms of not only the increasing casualisation of staff, but also in terms of the amount of preparation and lead time that is required if a more social approach to learning is considered.

The typical TAFE teacher carrying out 20 hours a week face-to-face [teaching] and other factors have impacted on the incidental time that used to be used for class preparation. A lot of it is done on the fly. Beyond minimal preparation a programmed learning approach where every learning experience and learning object is planned represents hundreds and hundreds of hours.

Participants felt that the pedagogical assumptions are difficult to unearth for a number of reasons. The expectations of what the medium can do have been publicised to the extent that teachers now believe that:

... it can do everything. As the bar in the resource development is being raised we are beginning to rely on it to provide what we as teachers would have traditionally provided off our own bat.

Some participants felt that they had lost their pedagogical control in the face of a technology that is beyond their competence to create and develop. For those participants involved in the design, development and implementation process, the inordinate amount of time required was a crucial determinant of their level of pedagogical control. They were committed to the pedagogical effectiveness indicators, understood and could articulate the importance of interactivity in particular, but questioned their capacity to deliver the practices that matched their commitment.

## ‘Print to screen’

Another pedagogical assumption appears in the practice of placing print-based materials online.

To a large extent what we are using our system for is putting all our print-based materials online. There are some fancy things but ... it is really just book-based with some online stuff so you can get into a bulletin board or email a teacher.

The more interactive and constructivist practices require skill, time and predisposition that is the province of enthusiasts. Some participants however, felt that teachers are focussing much more on interaction and communication as essential elements of their practice and moving away from simply transmitting information. This was occurring in those content areas suited to online delivery such as information technology, where the effects of programs such as Learnscope had raised teacher skill and confidence levels.

We can use the medium much more for communication, for interaction and for constructing knowledge—not just presenting information. The available materials provided via navigation are offering different levels of access to information. Learning is becoming much more flexible rather than linear.

## Reflection

The notion that the technology drives the pedagogy is juxtaposed beside the idea that the medium also forces teachers to be explicit about their pedagogy.

There are a lot of things that you would do subconsciously as a teacher face to face, and you have to be aware of your processes and what you are trying to do in a conscious way.

Certain aspects of the technology encourage reflection.

The medium of online gives us an opportunity to behave and act in the learner's role in a way that we would not do in a classroom. There is a huge potential there for the meta-cognitive skills to be used to think about how I am behaving as a learner.

Face to face we make some very large pedagogical assumptions. Online you cannot assume that anything will happen unless you make it happen.

How am I going to get across the unwritten messages? How do we set up experiences for students so that they can hear the messages that we want them to hear?

## Theories of constructivism

Constructivism has been suggested as a suitable teaching practice online and as an assumption that informs design and delivery. However, the relative effectiveness of this pedagogical assumption was questioned by a number of participants.

There is a huge jumping onto the constructivist bandwagon. Simply putting a simulated workplace online in front of some content does not equal a constructivist form of learning. It's difficult in content areas to construct new knowledge because constructivism has as its base assumption that the students have something to construct from. Some content areas are just not suited to this assumption.

There are pedagogical assumptions made that, by creating a constructivist environment for learning, the activity is made more effective. This was disputed by some participants, who felt that open information often gets in the way of students recognising their problem-solving activities. The interest in constructivist pedagogy also raises the question of professional responsibility, and while an attractive way to present information it often leaves a '... muddle unless the teacher provides an explicit map for the way in which students can approach the materials'.

Simulations provided no opportunity for teachers to match the environment with their students. They felt that this constrained their practice in ways that were not always positive.

We simply do not have the luxury of choosing a matching environment for our students.

## The 'enthusiasm factor'

Enthusiasm for the medium and an appreciation of its potential for learning were thought to be important pedagogical assumptions underlying online delivery.

The enthusiasm factor is critical.

If teachers have an appreciation of, and commitment to the potentialities of the medium, their inherent enthusiasm would provide the energy required to create sound pedagogical practices. This enthusiasm could be engendered through professional development. However, teacher resistance was thought to be very strong in some areas.

## Student characteristics

One of the pedagogical assumptions created by some online delivery is that the students are a homogenous group of learners. Participants felt that this was a flawed assumption.

A common base of knowledge cannot be assumed.

The medium makes some assumptions about the nature of the learners which entail particular pieces of teacher practice.

A lot of the learning is predicated on the idea that you are a reasonably independent learner.

Our younger TAFE learners are pedagogically dependent and this causes controversy and tension.

## Work patterns

Another piece of implicit pedagogy is disguised beneath layers of teacher work practice. The effective use of the medium entails a set of practices outside the workplace and the work hours. Interaction of the kind demanded by effective teacher practice comes with the price tag of extended work hours and the often associated burn-out feature.

Managerially and organisationally some participants felt that their online work ‘... was not even regarded as teaching’.

## Summary

The pedagogical assumptions that underpin the online delivery of VET are determined by pressures often outside the control of the teacher or curriculum planner. The lack of time and competitive pressures, militate against teacher reflection and the resultant practice or pedagogy is often personally unsatisfactory. The imposition of the prepackaged online materials and the lack of teacher competence to design and develop online materials leave practitioners with little pedagogical control. Constructivist assumptions about online pedagogy are not always supported in practice, and in some cases remove important and needed support from students. Teachers needed enthusiasm to sustain online teaching and the medium assumes a level of student independence that is not always present. These assumptions are summarised in the following list:

- ✧ ‘Print to screen’ dominates practice.
- ✧ Knowledge of good practice does not match reality of practice.
- ✧ Enthusiasm for the medium is a prerequisite.
- ✧ Constructivist practice is encouraged but sometimes does not match the reality of practice.
- ✧ Medium is driving the usage.
- ✧ There is potential for metacognitive development.
- ✧ New workplace practices have been created.
- ✧ Teacher reflection is limited amongst new users.
- ✧ Learners determined by rapid pace of change.
- ✧ Students are independent.

## What teaching and learning areas are best suited pedagogically to online delivery?

The participants in the workshops discussed both the processes and the products of learning. The level of student experience with the technology was a critical determinant of suitability. On

occasions, student expectations about the nature of their learning and teacher modelling of expected behaviours were not satisfied by online delivery. The more complex the content and the assessment, the less suitable online technologies became. Change, and resistance to change sometimes overrode questions of suitability. The relative level of experience of the learner in the process of managing their own learning was seen to be as important as the content being delivered.

## Student experience

The area of study and the level and experience of the learners was considered to be critical.

In our fully online IT courses we have 20 remote and 20 close-by students. The students found the course advertised on the TAFE VC and enrolled online, so they have the skills that they need and they are motivated. We are validating things they already know and credentialling these. We are not actually teaching them anything new.

The issue of replacing existing teaching and training with online delivery was discussed extensively. The participants felt that a hybrid approach rather than replacement was a more helpful pedagogical construct to work from. This acknowledged that certain aspects of content were best suited to face-to-face teaching and that: '... there are aspects of online that may actually assist and complement and act as a kind of vitamin supplement of delivery'.

## Student expectations

Beyond teaching and learning areas, participants felt that student expectations were dominant in their thinking about the particular pedagogical practices in online delivery. In the welfare area for example '... students come because they know us and the personal elements and the communication are very important. To remove this would destroy the nature of our work'.

This commitment to student expectations was often in conflict with policy imperatives which were seen as taking delivery towards fully online. Participants resisted this blanket imposition for clear reasons.

Some content lends itself to online delivery and other parts do not.

In content areas where teachers model the behaviours they wish students to adopt (particularly in the human services areas, such as welfare, child studies, hospitality and tourism), behaviour and communication underpin the effective delivery by the practitioner. Participants questioned the ability of the online medium to teach these behaviours effectively.

These issues are much more crucial in content areas that are human services-based. In the traditional trade areas there are predetermined steps in the acquisition of skills and relationships that are not central to the delivery of content. But in human services this is quite different.

## A continuum of content complexity

The level of complexity of the material and the assumptions made about prior knowledge and experience which the students brought to the learning situation were thought to have a strong effect on the 'suitability' of online as a teaching and learning resource and strategy.

The further up the qualifications framework you go, the more you assume about your learners and their literacy abilities.

The assumption that teachers can deliver to increased numbers of students using online technology is predicated on a discussion of only certain types of content.

Maths equations or electrical circuitry is fine or if you wish to simply demonstrate a procedure in plumbing. Teaching and assessment is fine.



The participants felt that the more complex content and assessment needs pose problems online. Content that requires analysis, synthesis and problem-solving at a sophisticated level cannot always be accommodated. Similarly, the restrictions on assessment strategies imposed by the current use of the medium demand that teachers rethink the reasons for assessment and redesign assessment tasks for online delivery. The professional implications of this challenge have not yet been accepted in a wholehearted way.

The quality of the resources in certain content areas militates against good teaching practice in some instances. The current trend to create micro worlds where students are expected to act and behave and make decisions:

... works better in some contexts than others. In the VET sector we usually have a vocational outcome and there is a level of noise created through the artificial environment that is very off-putting to some students.

Open-entry courses were regarded as problematic online. Students could not be assumed to have the technological skills or the underpinning knowledge that would allow them to be effective learners. The activity of returning to learning left these students unsure about their status as learners and they did not need to have this attitude either reinforced or aggravated by online difficulties.

Because they can play computer games doesn't mean they can use online for more formalised learning—the demands of the course may be completely different.

The issue of effectiveness of online simulated work placements and experiences was discussed. While the creativity of the designers was acknowledged, it was also felt that the VET content generally demanded engagement with the reality of the workplace rather than its simulation.

## Change and development

The inherent resistance to change was thought to be a factor which prevented the adaptation of online materials to certain content areas irrespective of issues of suitability.

People do not like change. A lot of people in our department say that it is just not relevant.

The model for the development of online teaching sites and resources is important. Two teachers involved in the design and delivery of an online course began the process with a focus on the learner and wove the content around these considerations. They had experience with the learners face to face and were confident about their content. Their enthusiasm for both the process and the product translated to their students.

## Summary

The teaching and learning areas that are best suited pedagogically to online delivery are circumscribed by student experience and student expectations. Participants commented on the fact that the complexity of the content had a strong effect on suitability: the more complex the content, the more difficult it is to teach effectively online. Those services where modelling and communication are crucial components of the process of teaching and learning were not considered suitable for total online delivery. Suitability of content was also influenced by the process of materials design and the role that teachers played in this process and their attitudes. The greater the distance between materials creation and teacher delivery, the greater the likelihood of pedagogical disjunction.

The teaching and learning areas that are best suited pedagogically to online delivery, are defined by the features described below:

- ✧ Open-entry courses pose problems of technological skill and underpinning knowledge.
- ✧ Complex teaching and assessment is less suitable than simpler lock-step material content and procedures.

- ✧ Student experience with technology is a critical determinant.
- ✧ Information technology courses are more suitable than courses dealing with human resources.
- ✧ Student expectations influence suitability.
- ✧ Teacher attitude sometimes overrides suitability issues.

## What teaching and learning styles facilitate effective online learning?

Participants recognised that teaching and learning styles facilitate effective online learning to different extents. The level of effectiveness was determined by teacher and student experience, the availability of time, the online teaching practices adopted and literacy skills.

### Variety of teachers and learners

Policy is saying let them all learn online. But students have different skills and learn in different ways. Some need a teacher right beside them and some are independent learners, some are self-directed and some need lots of visuals.

Teachers reiterated the need to encourage independent learning, yet recognised that a considerable amount of work is required to create this status.

You may want to encourage independent learning but my goodness there is a process to get there!

The teaching styles which have been reinforced by years of comfortable experience do not necessarily translate into effective online practice. Professional development and support are needed to explain the teaching styles based on interaction that can lead to improved outcomes online. The principles of adult learning, with a focus on the experience and skills which the learners bring to the situation, was seen as being overlooked by the medium and its accompanying pedagogical practices. The collaborative approach to teaching and learning was regarded as fundamental to effective learning online and ‘... a lot of work needs to be done on making this work online’.

In terms of prerequisites for successful online teaching, participants echoed the maxim that ‘... teachers want a sense of ownership’. This was not always the case and the process of materials design worked against the involvement of teachers and an explicit acknowledgment of their teaching styles.

Beyond the documented styles and preferences of the learners, participants felt that the age group had a lot to do ‘... with the acumen with which they handle the materials’.

Motivation was also seen as a crucial determinant in the level of effective learning that resulted online.

Those who succeed are very focussed and very determined to achieve their goals. This is the confounding factor in all of this discussion.

Students who have a degree of intellectual flexibility and who are persistent learners were well suited to delivery in this mode. The participants felt that mixed modes catered for the broad range of students in their classes.

### The ‘goodwill’ factor

A number of participants identified the notion of ‘goodwill’ as underpinning effective online teaching. There was no dispute about the principle that student and teacher interaction was regarded as central to effective online learning.

However:

... the effectiveness of the pedagogy is influenced by how much goodwill each individual teacher is willing to expend. The more proficient you become as a teacher offering online provisions, the more the activity is not factored into your workload. You have to think of yourself as working over a 24-hour period rather than an eight-hour one. People are enthusiastic and they love it, but they can't sustain the good practice that they know will work.

IT students have the initial skills and the underpinning knowledge and the preference for working in the medium.

Active learners find the medium attractive.

Majority of students love it.

Participation in online discussions and forum can offer something to the more kinesthetic learners; those who like to teach others.

Problem-based learning as a teaching style was seen to be well suited to the internet.

... what is crucial is the way the teacher accommodates the different learning styles.

The medium can cope with different learning styles but the critical issues is the amount of time the teacher has available to construct particular kinds of learning experiences.

... learning styles are important but before this people need to be able to read and write and have some basic computing skills.

## Summary

Participants felt that effective online learning was facilitated by a complex set of teacher–learner interactions. They saw the independent self-motivated, focussed and persistent learner as the ideal candidate for online delivery. The teacher at the other end of equation needed all of these traits as well as being flexible and having a teaching style characterised by a sense of goodwill and a commitment to the principles of adult learning.

Participants recognised that constructivist practices and problem-based learning approaches were the most pedagogically sensible ways to approach online delivery.

The features of teaching and learning that need to be present if online learning is to be effective are summarised by the following points:

- ✧ technological acumen
- ✧ active learners
- ✧ flexibility
- ✧ high levels of intrinsic motivation
- ✧ high levels of teacher 'goodwill'
- ✧ problem-based learning
- ✧ independent learning
- ✧ adult learning and teaching styles
- ✧ literacy skills beyond a functional level
- ✧ persistence.

# What interactions at the individual learner level are most effective in contributing to effective online learning?

Working together in a flexible delivery mode was seen to be a positive interaction which both students and teachers could recognise and articulate. The level of interactivity provided by the medium was seen as particularly effective for students from non-English-speaking backgrounds, particularly those of Asia.

The use of email is becoming very popular and it fulfils a function where neither writing nor speaking would be satisfactory. The medium tolerates mistakes in the conventions of speaking and writing and in this way allows students to venture a little further with their interactions and their learning.

The conventions of email create a sense of informality which lubricates more collegial relationships and interactions between teachers and students. For students from an Indigenous background the non-confrontational nature of online learning, and particularly email, and the non-competitive way of relating outside a traditional classroom environment addresses a number of issues. The medium provides cultural safety and protected communication where mistakes are less publicly displayed and more tolerated than in a face-to-face situation. The medium encourages a degree of intellectual risk-taking that can be built on to encourage learning. Furthermore, electronic access over a sustained period of time allows for the building of a productive learning relationship.

The relational dimensions of learning were therefore felt to be crucial in contributing to effective online learning. Fostering these characteristics online required a large investment of time and emotional energy.

The possibilities for interaction between students and teachers working online exists and is productive when used capably. However, some participants felt that this level of interaction was not being used as effectively as possible. The flexible enrolment and delivery systems often worked against the creation of a truly interactive learning community.

We have a philosophy of start anytime, finish anytime which often means that your student numbers are highly variable and you might only have one student or two students who are at the same stage and this makes interaction difficult.

## Constructivist pedagogy

Constructivist pedagogy encourages particular kinds of interactions at the individual student level. These interactions entail skills that have to be taught and learnt. Participants commented that these interactions are not always positive for students.

Constructivist experiences can be incredibly powerful but they can be extremely confusing as well—and demotivating.

Some made the point that students need to have a map of where and why they are going, and how they will know when they have arrived.

People need a sense of where things fit together. They lose their way because things do not necessarily fit together.

## Summary

Participants felt that the interactions at the individual learner level that are most effective in contributing to successful online learning revolve around the communicative and relational capacities of the technology. The questionable ability of teachers to sustain these dimensions of teaching and learning was an issue, particularly in an environment of increasing policy emphasis on 'flexibility'. Creating online learning communities implies a stable enrolment pattern that is not

supported by current procedures. Constructivist approaches also encourage effective interactions online. However, participants felt that the pedagogy of online constructivism was poorly understood and poorly practised, leading to student confusion and frustration.

The individual learner in an online environment needs to be engaged in the interactions listed below in order for their learning to be effective:

- ✧ developing online relationships
- ✧ student–student collaboration
- ✧ email conversations
- ✧ teacher–student contact and collaboration
- ✧ electronic contact over a sustained period of time
- ✧ provision of ‘organisers’ for content and assessment.

## What effect does online learning have on the roles and skills of those involved in the learning process?

This question was discussed by participants in detail and approached from a variety of perspectives. The lack of clarity about the respective roles for teachers, students and the technology experts was discussed. The following questions were put to the participants: What is the expected set of roles, where is the support for teachers and students and what is the difference between technical support and teaching support? The lack of explicit information on these roles causes confusion and ambivalence which, when mixed with a lack of confidence or expertise, confounds the online teaching and learning situation. Participants felt that they needed to be more deliberate and explicit about how and what they were delivering.

### Efficacy

A majority of the people involved in online learning both as teachers and learners regard themselves as novices. The technology removes a belief in the efficacy of their traditional roles. Teachers bring with them a remarkable amount of experience and expertise which is often denied or unrecognised. ‘Online is something that people are very insecure about’, and teachers and students ‘seem to underrate their technological skills’. The sets of expectations that online delivery imposes on teachers leads to a confrontation between these and ‘their own technological abilities’.

This has led to a sense of deprofessionalisation and a recognition that teaching and training online is very different. There is a tendency to ‘discount all the skills that you have built up through your career’. The new role for the teacher in this context is to ‘apply what you already know in a new environment’. The rapid pace of technological change and its take-up rates often prevents this process of reflection and development.

Given the rapidity of change in programs, techniques and equipment, it is not surprising that we find it hard to deal with. We simply don’t have the skills to deal with such big changes so quickly.

### Day-to-day roles

The impact of online delivery and support on the day-to-day activities of teachers and the consequent skills which they needed to develop, was reiterated by all participants. The exigencies of day-to-day delivery, including the technical inconsistencies and the levels of technological unreliability, imposed some organisational demands on teachers and students which are new and as

yet managerially unacknowledged. For instance, teachers in the welfare area commented that their students become very tired working online.

## New roles in communication

Certain functions of the technology redefined the teachers' roles and skills dramatically. 'Email sets the teacher quite outside what happens in the classroom. The role of the teacher is advisory and informal.' This informality has its consequences and the participants felt that the egalitarianism entailed higher levels of teacher accountability which required new skills and new roles for both teachers and students. Establishing the rules for interaction, security and privacy were important at the outset. For some teachers the new levels of informality have posed problems.

Some teachers are very precious and they are used to chalk and talk and they are not going to find the medium comfortable. There is a lot more criticism of teachers in the medium of email and chat. The voice and role are different.

## Assessment

One of the roles of teachers articulated by the participants was that of diagnosing and fixing errors.

A good teacher looks at not just the right and wrong answers but extends their gaze to where they went wrong.

This role is not easily transferable to an online medium.

## Management roles

The organisational context in which the online teaching is located influenced the new roles and skills for teachers. How it is organised, how it is managed, how it is slotted into the day, how it is staffed and how it is funded, all influenced teacher attitudes. The level of institutional support for online learning determined the extent to which new skills and roles could be explored, evaluated and reflected on.

Implementation issues are often under-estimated.

The extent to which planners considered the changing roles of the teacher and the student, and the facilitation that was necessary to promote smooth changes was thought to be disregarded in a lot of instances. Some participants commented that this issue 'cut to the chase'.

There is a technological approach versus a pedagogical approach and often the planners are looking at satisfying the demands for figures and stats and they have a very mechanistic view of the pedagogical implications.

Professional development was thought to address segments of this concern and recent programs have done a great deal to upskill teachers. However, the fundamental question which teachers continue to ask is how to do the things that they have to do well in a new environment. There is a lot more to this than just learning to use the keyboard and the software.

## Planning roles

The problems associated with role of the teacher as an organiser of online materials was seen as symptomatic of the teaching profession generally.

A lot of experienced teachers are not planning enough. You only have to look at the photocopier five minutes before class is due to start. The time and planning involved in putting a semester's work online just writes off the benefits they perceive to be there. All that lead time is what cuts them out.

Participants felt that the roles of the effective online teacher include being:

- ✧ a resource
- ✧ an onlooker
- ✧ a facilitator
- ✧ a participant
- ✧ a leader.

And that these roles are mixed and matched to suit the student cohort and the materials.

## Technological roles

The issue of the technological competence of both students and teachers impacts on pedagogy and effectiveness and determines roles in clear ways. Some participants mentioned students who have returned to learning after a long absence and the levels of intimidation that they feel in an online environment.

With students such as these we begin with fairly structured strategies and then a couple of months down the track we start moving towards those other roles. The extent of their experience becomes critical.

This same construct can be applied to teachers. Teachers who are new to the technology are focussed quite realistically on making the machines work and managing the teaching and learning online. The next level of engagement comes when a substantial number of the technological processes are automated and the time to reflect on practice is released.

This is fine for teachers who are passionate about the technology but it's not fine for those teachers who are not interested. They have to get involved because they have to, but they feel that it is not something that students really need or want.

## Summary

Online delivery of VET demands new roles for teachers and learners, and the participants discussed these and their effects. Participants felt that the roles were unclear, ambivalent and not articulated or understood by management. For teachers, this lack of understanding was clearly reflected in changing and burgeoning workloads, poor staffing arrangements and industrial relations provisions that did not 'factor in' the time and professional development needed to adjust to the new roles.

Participants also commented on the sense of deprofessionalisation that new users of the technology suffered. Beyond these frustrations, participants discussed the new communication, planning and technological roles that teachers and learners had to adopt if they were to be effective online.

Online learning prescribes new roles for teachers and learners, and entails the development of new skills. The effect of online learning on the roles of both teachers and learners are summarised in the following points:

- ✧ new definitions of time and work patterns
- ✧ new levels of institutional support
- ✧ higher levels of teacher accountability
- ✧ lack of clarity about teacher roles online
- ✧ new rules for interaction, security and privacy
- ✧ pace of change contributing to 'deprofessionalisation'
- ✧ assessment processes to be reconceptualised

- ✧ higher levels of course planning
- ✧ new levels of technological skills and experience needed
- ✧ varying levels of efficacy influencing self-perception
- ✧ application of what is known in a new context.

## What are the relationships between pedagogical features and world's best practice?

The participants discussed 'best practice' in terms of a holistic approach to pedagogy. They identified the need to offer a range of activities online to cater for different student requirements. They felt that resources should be constantly updated and that a 'hybrid approach' met most student needs.

The greatest online providers are now NET G and SMARTFORCE who have got 4000 online courses. You can go to a desktop and transport the course you want. If that's best practice and the model, where [sic] does that reduce everybody else to?

What is working best is the mixture of modalities.

Where we retain face-to-face contact but where we reduce it, for example in our Grad Dip modules, the student outcomes reflect the success of the 'mixture'.

## Conclusion

The participants in the workshops were both experienced and highly contributory. The discussions of the research questions typically covered a wide set of topics directly and indirectly related to the online pedagogy of VET delivery.

All the participants recognised the potential for online delivery of VET to make a difference to the flexibility and effectiveness of student learning. They considered that the pedagogical assumptions which underpin effective online delivery included factors relating to levels of teacher and student independence, enthusiasm and a commitment to inclusivity. However, they identified that current pedagogy is constrained by pressures from 'outside', such as the rapid pace of change, external design of materials and limited opportunities for teacher reflection. The participants agreed that some content areas are more suited to online delivery than others and that student and teacher familiarity with the technology was a critical determinant of effectiveness.

The teaching and learning areas that are most suited to online learning in VET were influenced by factors such as student and teacher expectations, levels of content complexity and the flexibility of entry arrangements into courses.

Participants agreed that the teaching and learning styles that facilitate online learning focus on independent learning, problem-based learning, and constructivist learning. The characteristics of effective online teachers and learners include flexibility, high levels of intrinsic motivation, persistence and technological and literacy skills.

The interactions at the individual learner level which promote effective learning in online VET include collaborative activities, sustained contact, the development of relationships and high levels of course content organisation.

Participants agreed that online pedagogy has entailed new skills and roles for teachers and learners. It is not simply a matter of transferring face-to-face practice into a new environment. In particular,



the issues of teacher accountability, the reconceptualisation of assessment and new levels of technological and communicative skills were considered critical.

Participants were less sure about what constituted world's best practice online, and commented on the need to adopt a hybrid approach to delivery which is holistic and supported by constantly updated resources.

The workshops confirmed that online pedagogy is a difficult topic to address and that the day-to-day practices of teachers are disparate and not altogether satisfying. Participants identified the pedagogical potential of online delivery, supported its development and clearly recognised areas for change and improvement.

The workshops confirmed the validity of the pedagogical effectiveness indicators. Participants modified the language and emphasis, leaving the intent unchanged. They also reinforced the usefulness of applying a research-based theoretical framework to the complexities on online pedagogy. The range and depth of discussion about the factors influencing online delivery, the effects on teachers and learners, and the multiple perspectives on the different dimensions of online pedagogy underpin the application of the productive pedagogies framework to the project data.

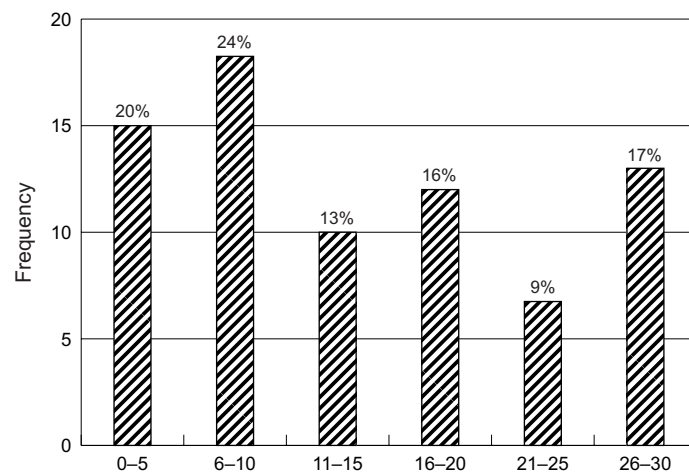
# Appendix 3: Survey results – teachers

## Teacher profile

In all 88 teachers completed the survey. The survey found that around 65% of teachers are in the 31–50-year-old age bracket, while 78.4% of the teachers involved are 31 years of age or above. Of the teachers involved, 32.5% were male and 67.5% were female; 6% of the teachers came from a non-English-speaking background.

Figure 3.1 shows the number of years since the teachers involved had trained as teachers. It is significant that 80% of teachers trained more than six years ago, indicating that online delivery would probably not have been a component of their initial teacher preparation. This, combined with their relative inexperience with this form of teaching (table 3.1) contextualises other information. In terms of the continuum of experience, they can be regarded as online ‘novices’.

**Figure 3.1: Years since you trained as a teacher?**



**Table 3.1: Years teaching online**

	Minimum	Maximum	Mean	Std. deviation
Years spent in teaching online	.00	6.00	1.6893	1.6738

## Online courses and modules

Teachers were asked to list fully online courses they were delivering as well as subjects/modules that they were delivering as part of mixed-mode teaching.

The responses and comments indicated that this distribution between course and module was not made clear in the questionnaire. Wherever possible, the teacher comments were used to allocate the

course/module to the correct category of either a fully online *course* or to an online *module* as part of mixed-mode delivery.

## Fully online courses

Teachers indicated that they were delivering the following courses fully online:

- ✧ Text in technology
- ✧ Diploma of Business (e-commerce)
- ✧ Online office computing
- ✧ Certificate II in Information Technology
- ✧ Web production certificate
- ✧ CD-ROM—distance education courses
- ✧ Certificate II Business—Higher School Certificate (HSC) students remote
- ✧ Communications online
- ✧ Bachelor of Business (Tourism Management)
- ✧ Introduction to Online & WebCT—Certificate III
- ✧ Introduction to e-Commerce
- ✧ Management of internet marketing
- ✧ Institute staff development online
- ✧ Certificate III in ESL
- ✧ School support officers professional development
- ✧ Graduate certificate—introduction to teaching online
- ✧ Certificate IV in Assessment and Workplace Training
- ✧ Certificate III in Information Technology.

## Online as part of mixed-mode delivery

Teachers indicated that they were delivering the following subjects/modules online as part of mixed mode delivery:

- ✧ Instructional design
- ✧ Writing research reports
- ✧ Certificate IV in Web Production
- ✧ Special Fares (Tourism and Hospitality)
- ✧ Armed Services modules
- ✧ Certificate I Building and Construction
- ✧ Business correspondence
- ✧ Understanding cultural differences
- ✧ Essentials of making presentations
- ✧ Equal employment opportunity
- ✧ Fares and ticketing 1 and 2
- ✧ Training skills for effective learning—modules 1 and 2

- ✧ Systems analysis and design
- ✧ Problem solving
- ✧ Dealing with difficult service situations
- ✧ Business understanding (Key performance indicators and management solutions)
- ✧ Workplace assessor
- ✧ Train small groups
- ✧ New performance management
- ✧ Tour planning and operations
- ✧ Diploma in Business
- ✧ Certificate IV in Business
- ✧ Level III User Documentation
- ✧ Diploma in Human Resource Management
- ✧ English for the workplace
- ✧ Change management
- ✧ Commercial negotiation
- ✧ Certificate II Library and Information Studies
- ✧ Performance management
- ✧ Certificate III ESL.

The spread of these courses across the Australian Qualifications Framework (AQF) levels is reflected in the next section.

**Table 3.2: Australian Qualifications Framework level**

AQF level	Per cent
Certificate 1	7.5
Certificate 2	16.4
Certificate 3	26.9
Certificate 4	23.9
Diploma	16.4
Advanced diploma	9.0

Table 3.2 shows the Australian Qualifications Framework level of the course/modules being delivered. Nearly 75% (74.6%) of the courses are at certificate IV level or below; 50.8% of the courses cluster around the certificate III or certificate IV level and 67.2% of the courses are delivered between Australian Qualifications Framework levels 2 and 4. Of teachers surveyed, 80% worked full time and 20% worked part time.

## Course/module information

Table 3.3 shows that email is used most frequently by teachers in course/module delivery (20%). Email and web-based course content made up 38% of the delivery methods used online.

**Table 3.3: Features of technology used in delivery of courses/modules**

Technology being used in online delivery	Per cent
Email	20
Web-based course content	18
Electronic submission of assessment	15
Assessment completed online	14
Bulletin boards	12
Chat	10
Subject forums	7
Course forums	3

The following is a summary of other features of technology used by teachers:

- ✧ use of CD-ROMs
- ✧ basic navigation
- ✧ discussion areas
- ✧ information hubs
- ✧ downloading of notes
- ✧ online tests, both summative and diagnostic
- ✧ phone
- ✧ fax
- ✧ video-conferencing facilities
- ✧ virtual classrooms
- ✧ student file-sharing.

Twenty-nine per cent of the available technology features are used for either online assessment or submission of assessment items.

**Table 3.4: Time spent online teaching**

Per cent of time spent online teaching	Per cent
0–15%	44
16–30%	29
31–50%	17
51–70%	7
71–90%	3

Table 3.4 shows that 44% of teachers spend less than 15% of their time involved in online teaching, while 73% of teachers spend 30% or less of their time on teaching activities online. When this information is placed beside the other data we have a picture of teachers who:

- ✧ trained more than six years ago
- ✧ are relative newcomers to online delivery
- ✧ spend about one-third or less of their teaching time online.

# Teacher behaviour

Teachers indicated the extent to which their online teaching behaviour was characterised by the features of pedagogical effectiveness. Table 3.5 sets out these results.

**Table 3.5: Teaching behaviours**

Indicator	Seldom/never %	Sometimes %	Usually %	Always %
Creating a learner-centred environment	2	25.5	39.2	33.3
Using questioning strategies	4	33	43	20
Attempting to build relationships between students	12	24	39	26
Engaging students actively in their learning	2	22	35	41
Employing motivational strategies		31	41	28
Monitoring student progress on a regular basis	4	16	41	39
Providing timely and constructive feedback	2	6	47	45
Encouraging critical thinking	2	31	35	31
Evaluating my students' learning	6	23	29	42
Reflecting on my own practice as an online teacher/trainer	2	29	31	39
Using constructivist approaches to teaching and learning	6	33	35	25
Facilitating student learning	0	40	40	20
Encouraging student debate and discussion	12	27	39	23
Providing guidelines about assessment and work schedules	4	6	46	44
Transmitting content to the students	45	19	44	33
Developing analytical skills in my students	2	40	37	21
Creating a sense of community amongst my students	15	33	35	17
Identifying student learning styles prior to teaching online and matching materials to the students' needs and learning styles	27	46	17	10

In relation to teacher behaviours online table 3.5 shows that:

- ✧ 72.5% of teachers characterise their online teaching as usually or always focussing on creating a learner-centred environment.
- ✧ 63% of teachers use questioning strategies usually or always as part of their online teaching.
- ✧ 65% of teachers attempt to build relationships between students usually or always.
- ✧ 76% of teachers try to engage students actively in their learning.
- ✧ 69% of teachers employ motivational strategies usually or always.
- ✧ 80% of teachers usually or always monitor student progress on a regular basis.
- ✧ 92% of teachers consider they provide timely and constructive feedback usually or always.
- ✧ 66% of teachers consider they encourage critical thinking usually or always.
- ✧ 71% of teachers consider they evaluate student learning usually or always.
- ✧ 70% of teachers believe that they reflect on their own practice as an online teacher/trainer usually or always.
- ✧ 60% of teachers consider that they use constructivist approaches to teaching usually or always.

- ✧ 60% of teachers consider they facilitate student learning usually or always.
- ✧ 62% of teachers believe that they encourage student debate and discussion usually or always.
- ✧ 90% of teachers consider that they provide guidelines about assessment and work schedules usually or always.
- ✧ Relatively few (27%) identify student learning styles prior to teaching and match materials to student needs.

## Learning strategies

Teachers were asked to estimate how often they used a variety of online teaching strategies to create learning experiences for their students. The results are presented below:

**Table 3.6: Learning experiences**

Indicator	Seldom/never %	Sometimes %	Usually %	Always %
Practice and repetition	16	44	32	8
Analysis and synthesis	15	38	35	12
Problem-solving	12	42	38	9
Deep learning	27	47	16	10
Investigation and research	8	31	39	23
Debate	37	36	23	4
Practical experience	15	36	32	18
Theoretical understanding	4	30	48	18
Presentation of visual material	7	31	34	29
Presentation of multimedia information	25	30	21	24
Student–student and student–teacher interactivity	12	30	30	30

In relation to online teaching strategies table 3.6 showed that:

- ✧ 30% of teachers felt that they ‘always’ focussed on interactivity.
- ✧ 29% ‘always’ used the technologies to present visual material.
- ✧ 48% of teachers ‘usually’ used the online technology to create learning experiences related to the critical understanding of the material.
- ✧ 38% ‘usually’ employed problem-solving strategies, with 42% ‘sometimes’ using problem-solving strategies.
- ✧ 47% of teachers ‘sometimes’ created online learning experiences which encouraged ‘deep learning’.
- ✧ 37% of teachers ‘seldom’ or ‘never’ used debate to create learning experiences.
- ✧ 27% ‘seldom’ or ‘never’ used ‘deep learning’.

Online learning was often used:

- ✧ for theoretical understanding (66%)
- ✧ to present visual material (65%)
- ✧ for investigation and research (62%)
- ✧ for fostering interactivity (60%).

It was used relatively infrequently for deep learning or debate.

Teachers were then asked to rank the types of online learning experiences mentioned above in terms of their contribution to creating effective online learning. The results appear in table 3.7.

**Table 3.7: Types of online experiences for effective learning**

Type	Frequency	Valid per cent
Practice and repetition	7	9.6
Analysis and synthesis	4	5.5
Problem-solving	6	8.2
Investigation and research	9	12.3
Practical experience	3	4.1
Theoretical understanding	3	4.1
Presentation of visual material	4	5.5
Presentation of multimedia information	1	1.4
Student–student and student–teacher interactivity	34	46.6
Sub-total	71	100.0
Missing	17	
<b>Total</b>	<b>88</b>	

The teachers in this survey felt that they were focussing on the features of pedagogical effectiveness in their online teaching practice in the majority of cases. When these aspirations are placed beside the actual teaching strategies used, investigation and research and interactivity dominate the repertoire. Practice and repetition were also regarded as important aspects involved in the creation of effective online learning. While the teachers were committed to effective pedagogical practice, the documented learning experiences that facilitate this were used far less.

## Suitability of content to online delivery

The issue of suitability of content for online delivery was canvassed with teachers and the results appear in table 3.8:

**Table 3.8: How suitable is online teaching for most content areas?**

		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	Not very suitable	8	9.1	10.4	10.4
	Fairly suitable	38	43.2	49.4	59.7
	Suitable	25	28.4	32.5	92.2
	Very suitable	6	6.8	7.8	100.0
	Sub-total	77	87.5	100.0	
Missing	Missing	11	12.5		
<b>Total</b>		<b>88</b>	<b>100.0</b>		

Forty-three per cent of teachers felt that most content was ‘fairly suitable’; 28% felt it was ‘suitable’ and 6% felt it was ‘very suitable’. Eight per cent regarded most content as ‘not very suitable’. The issues that teachers raised to support these rankings were collated. These were then allocated to arguments for and against content suitability and these appear below:

- ✧ Content—suitability issues
  - ◆ convenience



- ◆ access
  - ◆ content and delivery method identical; for example, information technology
  - ◆ theory and assessment delivered effectively online
  - ◆ planning/reviewing/researching activities ideally suited
  - ◆ difficult concepts in a variety of formats
  - ◆ opportunities for synthesis of knowledge and skills
  - ◆ up-to-date information.
- ✧ Content—non-suitability
- ◆ Students prefer face-to-face teaching.
  - ◆ Practical tasks are restricted.
  - ◆ Content is ‘too vast’ to be covered.
  - ◆ Discussion-based and values-oriented content requires face-to-face contact.
  - ◆ Team-based content delivery does not transfer well to online environment.

## Qualifiers

A large number of teachers qualified their ranking by explaining some of the factors that influence suitability of content either positively or negatively. These included comments about available time and the past experience of students. The balance in a particular course between theory and practice influenced its suitability for online delivery, as did the complexity level of the materials.

Some felt that certain components of a course were suitable for online delivery, but others required classroom or workshop interaction. Teachers overwhelmingly commented that, given the present state of technology, a blended approach to content delivery suited all participants best. Other teachers felt that the age, self-direction and experience of their learning meant that even though content could be delivered online, it should not be.

## Online practice and good teaching

Eighty-one per cent of teachers felt that their online teaching matched good practice ‘fairly well’ or ‘very well’. Teachers were then asked to explain their responses to the question: ‘To what degree do you think your online teaching matches what you know about good teaching?’

Teachers commented extensively and the answers they provided sometimes tended to bring up issues not specifically related to these two questions. The responses were categorised in terms of student or teacher perspectives.

### Student perspectives

Teachers felt that the online environment meant that students had to take on a lot of personal responsibility, and for this reason student orientation programs where the teachers helped students to set goals, prioritise tasks, time-manage and use the particular technology, were important to ensure a healthy match between online delivery and good practice.

A large number of teachers mentioned that the flexibility implicit in online learning matched their ideals of good practice. However, a number qualified this response by mentioning offsetting factors such as low student performances for face-to-face contact and interaction. These comments intersected with teacher commitment to building a ‘student community’ as good practice which required consistent communication and large amounts of teacher effort, a situation which was not always sustainable.

A number of teachers commented on the student characteristics which would guarantee a solid match between online delivery and good practice. Factors such as motivation, independence and technological acumen were regarded as prerequisites for success. That ‘student learning is diverse

and difficult to do online' is often cited and is an indication of the sense of teacher frustration at the gap between what they know works and the realities of online teaching and learning.

## Teacher perspectives

Participants felt that teacher confidence and support are critical features of practice which are equally important online and face to face. Others felt that the isolation of the teacher when students did not use the communication tools created a new environment for teaching practice. Some teachers commented that their ideas of good teaching did not translate easily to an online environment: 'Generally I teach by identifying personal preferences/values and experiences in students and I tailor my delivery appropriately. This is somewhat difficult online'.

A number of teachers discussed the differences between online teaching and their previous experiences of good practice: 'Online delivery implies that the rules of teaching are different'. Other teachers cited isolation and access as ways in which online delivery matched their concepts of good practice. The ability to deliver courses and modules remotely was regarded as a move in the direction of greater equity for all students.

A number of teachers also mentioned that the distance between course/module design and teacher implementation militated against teacher autonomy and the ability to follow their own principles of good practice.

To effectively match my online practice to what I know about good teaching I would need to have been involved in the construction of the two online modules I teach. In other words, my online practice is restricted by the design of these subjects and the platform.

A large number of teachers recognise what they need to do to carry over good practice to the online environment. Features such as developing online relationships, questioning strategies, providing feedback, developing and creating a learner-centred environment were mentioned as goals that they were working towards. Teacher preference was clearly for a mixed-mode delivery and that this allowed them to take the best of both worlds.

## The role of the teacher

Teachers were asked to describe their role as an online teacher. The responses provided were categorised and it was clear that the most common description of individual teaching roles were related to:

- ✧ facilitating
- ✧ motivating
- ✧ mentoring
- ✧ guiding students' learning.

This was summarised by one teacher who described the role as a 'sounding board to self-discovery learners'. The role of the teacher was clearly focussed on facilitating for students rather than on furnishing content or initial resources. The materials contained in the online courses/modules removed the pressure to 'deliver' and teachers were concentrating on being available, flexible, communicative, responsive and co-operative.

A number of teachers described their role as 'inexperienced' or 'average'. For some teachers, their role was 'difficult, time-consuming and exhausting'. Some teachers felt that their role had been reduced to that of an 'assessor rather than a teacher' although these responses were relatively few. Others commented that their input into student learning was minimal.

A number of teachers regarded their online teaching role as developmental and could clearly see the potential for their own professional growth in online delivery.

## Other teacher skills and understandings

Teachers were asked to list other skills and understandings that they had developed because of their online teaching.

The skills provided by teachers can be clustered in the following way:

- ✧ Technical skills
  - ◆ understanding and refining site design
  - ◆ multi-media resource production
  - ◆ using a discussion board
  - ◆ authorising skills
  - ◆ instructional design skills
  - ◆ program development in WebCT
  - ◆ advanced email skills
  - ◆ distribution lists
  - ◆ powerpoint use
  - ◆ coping with new programs and packages
  - ◆ faster keyboard skills
- ✧ Curriculum skills
  - ◆ program development
  - ◆ development of course materials
- ✧ Management skills
  - ◆ time management.

Teachers generally believed that assessment needed to be undertaken face to face and that they need to be available to help students at regular intervals.

### New skills

Teachers focussed most frequently on the development of their technological skills. For some teachers, this meant that their first encounter with online teaching required them to become familiar with basic computer usage. Other teachers added to their existing skills and became more involved with course/module modification and design.

Relatively few teachers referred to the development of new curriculum and assessment skills. This is largely attributable to the frequently prescriptive nature of the course/module materials provided.

The new management skills teachers developed related to time management and the demand to be available at regular and predictable times for their students. *Teaching skills* included:

- ✧ motivating
- ✧ listening
- ✧ coaching/mentoring skills
- ✧ mediating chat
- ✧ a more active role for teachers
- ✧ strategies to create fun
- ✧ need to be more reflective

- ✧ improved communication with students
- ✧ use of precise and unambiguous language.

The new *understandings* cited by teachers that have resulted from their online teaching experiences included:

- ✧ Personal/affective
  - ◆ patience
  - ◆ persistence
  - ◆ coping with frustration
  - ◆ more flexibility
  - ◆ problem-solving
  - ◆ coping with time demands.
- ✧ Understanding students
  - ◆ increased student support
  - ◆ telephone and counselling skills
  - ◆ need for constant feedback
  - ◆ understanding the needs of non-English-speaking background students
  - ◆ focus on one-to-one communication
  - ◆ engaging with students
  - ◆ appreciation of different learning modes.

## New teacher understandings

The new understandings that teachers described as resulting from their experiences in online teaching were most frequently associated with personality traits such as persistence and coping with frustration.

Teachers also focussed on their new understanding of student needs in an online environment. They felt that engagement, communication, and the need for constant feedback were now perceived differently; they also felt that they further appreciated the needs and learning modes of their students.

## Goals for online teaching

Teachers were asked to list their goals for online teaching. They were asked to reflect on what, under the best of all circumstances, they would want to achieve.

- ✧ Personal goals
 

Some teachers felt that to ‘keep abreast of new developments’ was an important personal goal. Some also thought that they needed to ‘keep improving’ through constant updates to materials and resources. Others had the personal goal of developing ‘more creative online concepts’ to retain student interest and motivation. Less confident teachers felt that their personal goals were aligned with ‘much more technology preparation knowledge and practice’. A number of teachers wanted to learn more about online delivery, both in terms of organisation and the teaching strategies available. Some felt that, in this way, they could achieve the goal of ‘creating successful online opportunities for learners whilst nurturing the integrity of content’.
- ✧ Teaching goals
 

A number of teachers mentioned that the goals for their online teaching were centred on developing motivational techniques, opening up new channels of communication and encouraging an attitude of lifelong learning in their students. Others commented on the goal of making online learning ‘student-focussed not technologically determined’.
- ✧ Relationship goals
 

Some teachers cited developing good relationships with their students.

- ✧ Communication goals  
Increased and better quality interaction were considered important goals for some teachers. Linked to this goal is the idea of regular feedback and the development of an active approach, rather than a passive one to online learning.
- ✧ Technical goals  
Some teachers discussed the availability of the materials and the ability for learners to participate outside face-to-face situations as their goals. For others the provision of online assessment and assignment submission were thought to be important.
- ✧ Goals for students  
A number of teachers considered that their goals for their students included ‘getting them through’ by focussing totally on their learning. Others saw the creation of computer-literate learners as important. A large number of teachers focussed on student needs, achievements and cited increasing retention rates as their benchmark of effectiveness.
- ✧ Catering for difference  
A small number of teachers mentioned that their goals included enabling the students who might not otherwise have the chance to participate in learning. This was particularly relevant to distance learners who needed effective and supportive guidance to complete their courses.

## Advice to novice online teachers

Teachers were asked to hypothesise about the advice that they would give to novice online teachers. They were asked to list the five most important *principles* they would choose to pass on.

### Learn about and use the technology

Teachers mentioned the need to be technologically competent as the first prerequisite to teaching online. They suggested that the ability to use the technological tools and familiarity with both the course content and the modes of delivery were critical. A number of teachers qualified this principle by encouraging new teachers to regard this as a gradual and developmental process.

- ✧ Student learning  
Teachers frequently mentioned principles that related to the facilitation of student learning. They felt that it was important to let students know ‘what to expect’ to engage the students actively in their learning. They commented that this could be achieved through the creation of a learner-centred environment which was interactive. They also mentioned that an important principle is ‘meeting of individual learner needs’ through motivation and interest in the student. Positive feedback, clear instructions, learner relevance and lots of encouragement were also thought to be important principles.
- ✧ Interpersonal skills  
Principles relating to interpersonal skills also appeared frequently in teacher lists. The need to build relationships and to concentrate on effective online communication were thought to be important. Terms such as ‘empathy’, ‘understanding’ and ‘appreciate where your students are coming from’ reflected the principles of teacher responsiveness and flexibility.
- ✧ Organisational principles  
Principles related to organisation and management appeared frequently in teacher responses. Good planning, the preparation of back-up material and the need to be well supported were amongst the principles they mentioned. Other teachers suggested that clear guidelines for both assessment and work schedules were principles to be followed and that monitoring student progress was important. Issues relating to time management were also mentioned and the general advice was ‘time managed well and don’t be too flexible’.
- ✧ Practical networking  
Teachers also suggested a range of practical principles that would assist the novice teacher. They suggested that new online teachers should ‘view each other’s materials’, ‘find a mentor’, and ‘do

an online course to know how it feels to be on the other end'. They also advocated collaborative relationships between peers as a means of teacher support in an often frustrating teaching context.

## Teacher expertise

The participants surveyed were evenly divided in their attitudes towards their own expertise as online teachers.

**Figure 3.2: I consider myself to be an expert online teacher**

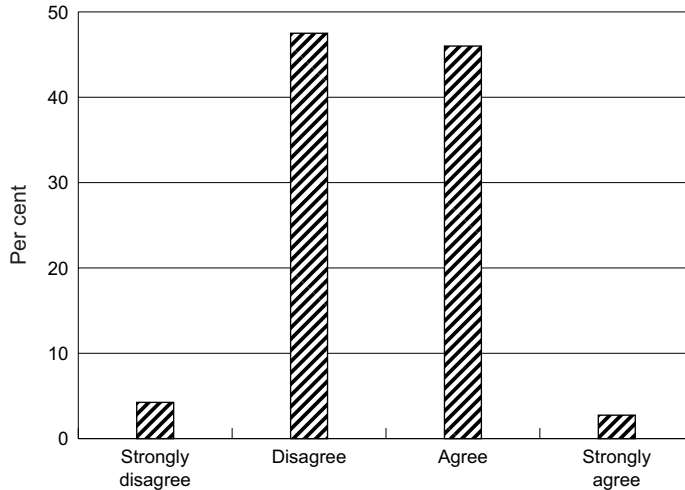


Figure 3.2 shows that around 5% of teachers strongly believed that they were not expert online teachers while around 3% strongly believed that they were.

**Figure 3.3: My professional development has equipped me to be a competent online teacher**

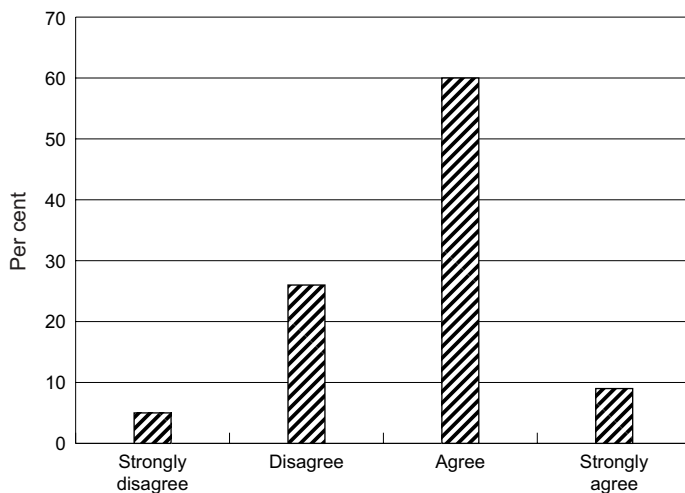


Figure 3.3 shows that 69% of teachers felt that their professional development equipped them to be competent online teachers, while 31% disagreed or strongly disagreed with this proposition.

Figure 3.4 shows that 65% of teachers felt that their face-to-face teaching experiences equipped them to be a competent online teacher, while 35% disagreed or strongly disagreed with this proposition.

**Figure 3.4: My experiences as a face to face teacher have equipped me for online teaching**

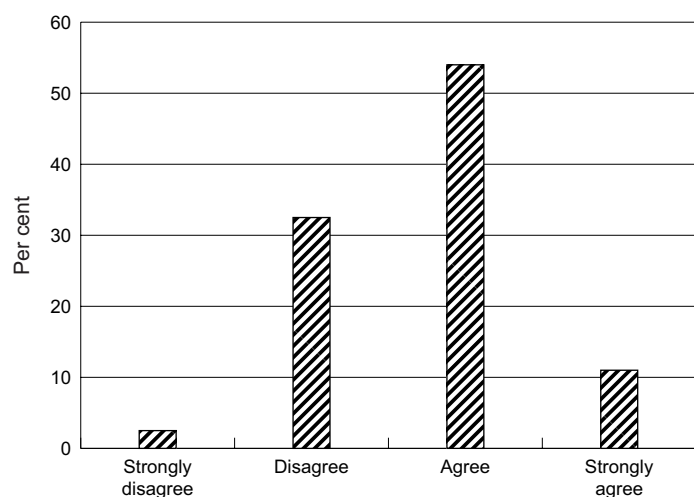
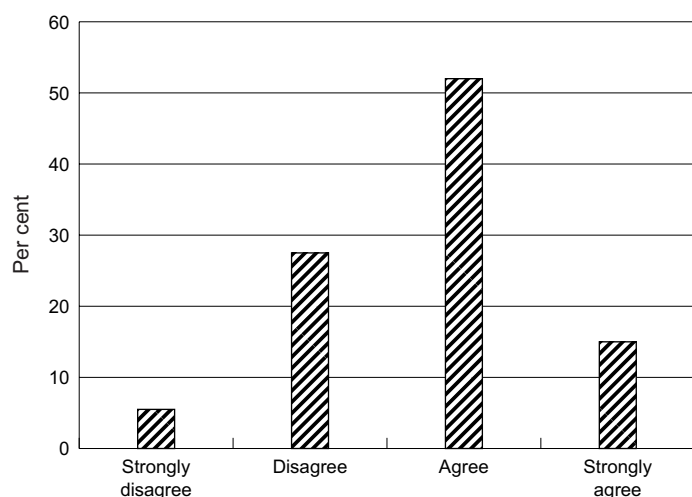


Figure 3.5 shows that 67% of teachers would like more input into the courses they deliver, while 33% disagree or strongly disagree with this assertion.

**Figure 3.5: I would like more input into the content online courses that I teach**



**Table 3.8: Teacher skills**

	Strongly disagree %	Disagree %	Agree %	Strongly agree %
Methods for facilitating learning	1	3	73	23
Instruction strategies	1	9	67	23
Understandings about my role as a teacher	0	15	64	21
Time management skills	3	14	60	24
Technical skills	1	17	53	29
Relationships with my students	1	22	59	17
Programming and planning skills	0	25	58	17
Written communication skills	8	23	60	9

Table 3.8 indicates that teachers have been required to develop:

- ✧ methods of facilitating learning (96%)
- ✧ instruction strategies (90%)
- ✧ understandings of their roles (85%)
- ✧ time-management skills (84%)
- ✧ technical skills (82%)
- ✧ relationships with students (76%)
- ✧ programming and planning skills (75%)
- ✧ new written communication skills (69%).

In particular, teachers felt that methods of facilitating learning, instruction strategies understanding their roles as teachers, technical skills and time management skills required particular development for effective teaching in an online environment.

### Characteristics of a good online teacher

Participants were asked to describe a good online teacher. The following is the list of attributes they provided. A good online teacher is:

- ✧ active
- ✧ communicative
- ✧ facilitative
- ✧ adventurous
- ✧ prepared to 'have a go'
- ✧ knowledgeable about content and medium
- ✧ possesses a vision for the future
- ✧ good manager/planner
- ✧ organised
- ✧ patient
- ✧ creative
- ✧ motivated
- ✧ positive
- ✧ emphatic
- ✧ supportive
- ✧ prompt
- ✧ persistent
- ✧ technically competent
- ✧ someone who monitors student progress
- ✧ pedagogically adept
- ✧ compassionate
- ✧ perceptive
- ✧ collaborative



- ✧ confident
- ✧ committed to learning
- ✧ adaptable
- ✧ someone who doesn't need sleep and has a good sense of humour!

The list of attributes above clearly focusses on the attitudinal characteristics of those involved in online delivery. Technological skills, while critical to successful teaching, are no guarantee of 'good' teaching.

## Teacher attitudes

Forty-nine per cent of teachers felt that they effectively catered for students' learning preferences and styles in an online environment 'sometimes'; 39% felt that they did this 'usually'.

**Table 3.9: Teacher style vs. student requirements**

	Seldom/never %	Sometimes %	Usually %	Always %
I feel that I can cater effectively for my students' learning preferences and styles in an online environment	6	49	38	6
I feel satisfied that my online teaching matches the cultural diversity of my students	11	39	42	8
A mixture of online and face-to-face teaching suits the needs of my students best	3	14	49	35

Thirty-nine per cent of teachers felt satisfied that their online teaching matched the cultural diversity of their students 'sometimes', while 42% thought that this match occurred 'usually'; 11% felt this match took place 'seldom or never'.

Thirty-five per cent of teachers felt that the needs of their student were addressed 'always' by mixing online and face-to-face delivery; 49% of teachers thought that the mixture 'usually' suited students' needs most closely.

## Student needs

Table 3.10 shows teachers' perceptions on the appropriateness of online learning for different types of learners.

**Table 3.10: Suitability of online teaching for diverse student requirements**

	Seldom/never %	Sometimes %	Usually %	Always %
Visual learners	5	38	39	19
Auditory learners	33	47	19	1
Independent learners	3	20	48	27
Experienced and confident learners	4	15	48	34
Learners who require constant supervision	36	40	21	3
Highly motivated	1	20	35	44
Literate and numerate	0	22	48	30
Technologically confident and competent		17	49	33
Kinesthetic learners	18	36	42	4
Team players	16	55	21	8
From non-English-speaking backgrounds	26	44	28	3
Aboriginal or Torres Strait Islanders	22	52	26	0

Teachers believed that the students with the following characteristics are suited usually or always to online teaching:

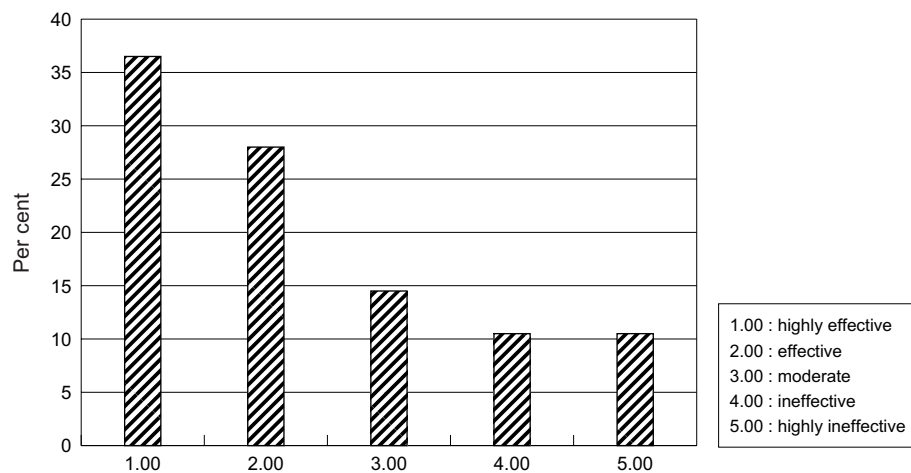
- ✧ independent
- ✧ experienced and confident
- ✧ highly motivated
- ✧ literate and numerate
- ✧ technologically confident and competent.

The least well-catered-for students are those who require constant supervision, who are auditory learners, or who come from non-English-speaking or Aboriginal or Torres Strait Islander backgrounds.

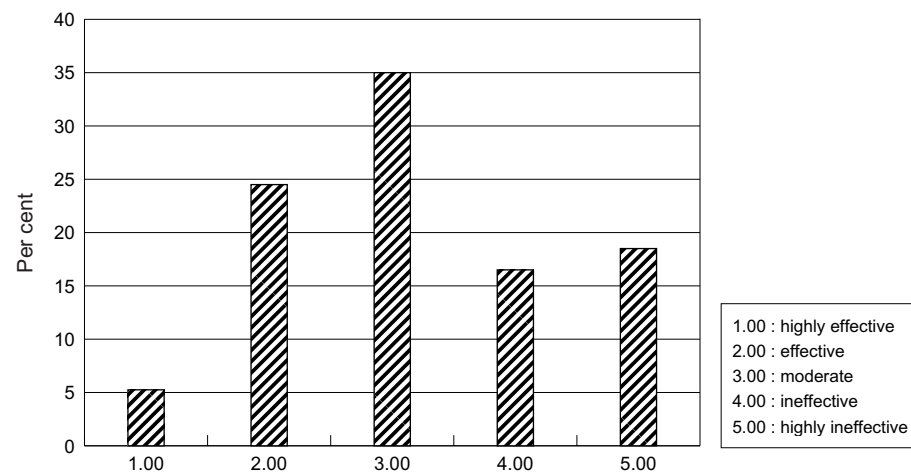
## Online interactions that contribute to student learning

The following graphs set out the ranking made by teachers on the effectiveness of various online interactions in contributing to individual student online learning.

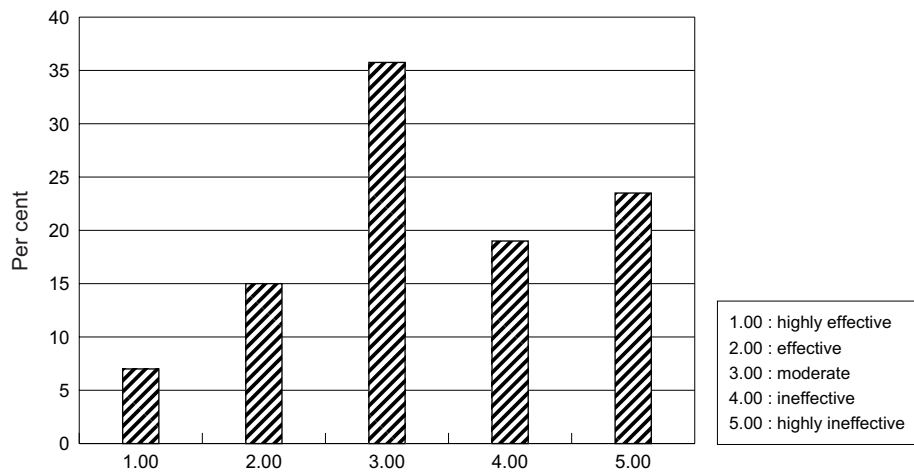
**Figure 3.6: Individual interactions with students via email**



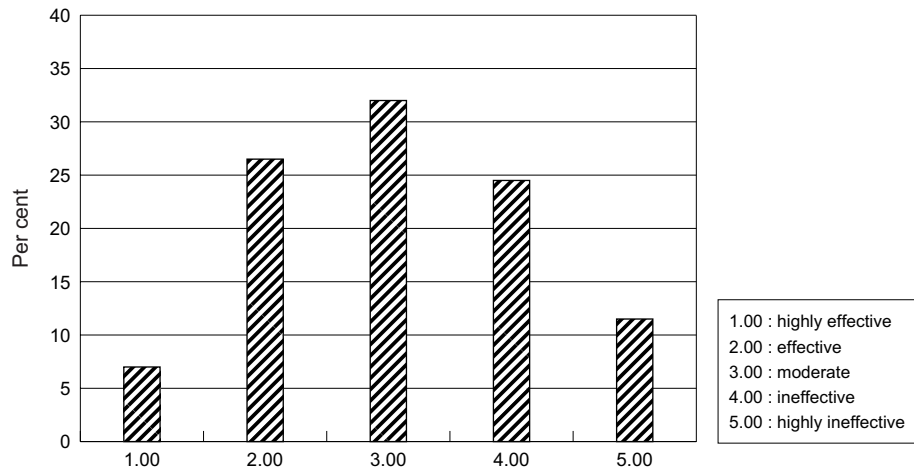
**Figure 3.7: Questioning via bulletin boards or forums**



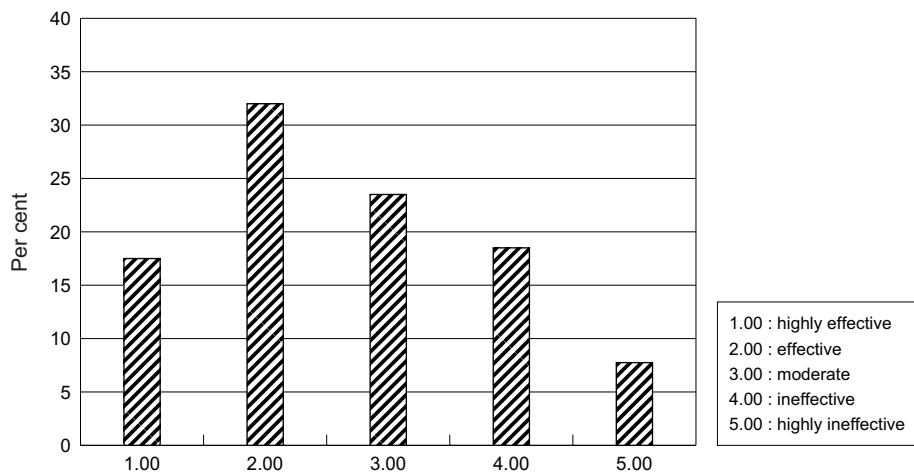
**Figure 3.8: Group projects set by the teacher/facilitator**



**Figure 3.9: Collaboration arranged by the teacher/student**



**Figure 3.10: Discussion via bulletin boards or forums**



Email was regarded as the most effective interaction in encouraging student online learning. Collaboration arranged by the teacher or student was given a mid-range ranking in terms of effectiveness. Discussion via bulletin boards or forums was also considered more effective than other forms.

## Changes in teaching style

Teachers were asked to comment on the ways in which they had changed their teaching styles to accommodate online delivery.

Time management was regarded as a significant change made by teachers as they now did 'more at odd hours'. The hours spent in front of the computer was also a significant change.

A number commented that they had become more flexible and had learnt how to adapt online materials to the level and needs of the learner. Substantially more time was devoted to one-to-one interactions. Clear written communication skills were seen by other teachers as a change in the right direction. This was especially important where students came from a non-English-speaking background and relied on the printed word for directions, materials and support.

Other teachers commented that they had changed their 'mind-set' and had become more responsive and sensitive to student needs. They felt more creative with greater opportunities to experiment. A number mentioned that they had rethought how and why they teach. They had become 'advisors not instructors'.

Teachers felt that their levels of technological skills had changed as they moved to online teaching. Some teachers commented that their level of experience in online teaching did not allow them to monitor changes to practice. Others said that they were still in a process of change.

For those who did not feel that online delivery had changed their teaching practice, some had extensive experience with online delivery or had worked with information technology as their core business.

## Advice to new online teachers

The advice that participants offered to new online teachers focussed on a number of themes. The importance of personal qualities such as patience, flexibility and persistence appeared regularly in their discussions. They suggested that teachers start with a small amount of online delivery and gradually develop their skills.

Teachers also felt that feedback to students was crucial and there was a need to 'work very hard at relationships'. Several suggested that teachers should complete an online course so that they could 'put themselves at the other end of the screen and imagine how the learner feels'. The need to be exploratory and a 'bit of a risk taker' was also considered to be good advice for new online teachers.

Management skills such as planning, student tracking and time allocations to ensure teacher survival were other pieces of advice. A large number of teachers suggested that a mentor for a new teacher was helpful as was 'working with a buddy or an experienced tutor'.

The following teaching strategies were believed to be useful for new teachers:

- ✧ building in regular feedback comments
- ✧ avoiding large chat sessions
- ✧ customising courses

✧ blending online delivery with other methods

✧ increased communication.

The advice to new teachers was summarised by one participant in the following way:

Take time and prepare, take risks, enjoy the journey, share and communicate openly and give feedback. Persist, persevere and be patient with both the technology and the students.

# Appendix 4: Survey results – students

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The questionnaire was completed by 100 students.

Sixty-four per cent of these students were male and 36% were female; 60% of all students were studying full time and 40% part time; 37% were between 16 and 25 years of age and 43% between 31 and 50 years of age. Eighty-one per cent of the course modules being studied online were between Australian Qualifications Framework certificate 3 and advanced diploma levels. The courses and modules studied online were predominantly computer-related. Students relied most heavily on web-based course content and email to facilitate their online learning.

## Experience of online learning

Most students described themselves as competent and experienced computer users and were positive about these experiences. However, the transferability of this confidence to an online learning environment was not confirmed by responses to other questions.

Those students with relatively high levels of computer efficacy working at the upper limits of VET sector Australian Qualifications Framework were asked to comment on the extent to which the features of effective pedagogy constituted part of their online learning experiences.

**Table 4.1: My online course/learning:**

	<b>Seldom/ never %</b>	<b>Sometimes %</b>	<b>Usually %</b>	<b>Always %</b>
Creates a learner-centred environment	15	50	25	11
Uses questioning strategies	12	55	28	6
Attempts to build a relationship between students	42	38	17	4
Actively engages me in my own learning	13	40	37	10
Employs motivational strategies	34	44	20	3
Monitors my progress on a regular basis	16	39	33	13
Provides me with timely and constructive feedback	16	42	32	10
Encourages critical thinking	23	41	25	12
Facilitates my learning	12	40	42	7
Encourages student debate and discussion	36	39	23	3
Provides guidelines about assessment and work schedules	5	30	46	19
Efficiently and effectively transmits content to me	13	28	46	13
Develops my analytical skills	9	58	23	10
Creates a sense of community amongst the students	37	21	21	2
Matches learning materials to my needs and learning style	18	55	20	6

Table 4.1 shows that, in the majority of cases, these features of pedagogy are ‘sometimes’ characteristic of their learning. The most effective features from the student perspective appear to be:

- ✧ providing guidelines about assessment and work schedules
- ✧ the effective and efficient transmission of content to them
- ✧ facilitating learning
- ✧ actively engaging them in their own learning
- ✧ providing constructive and timely feedback.

It is significant that, in 42% of the cases reported students claimed that building relationships amongst the online cohort was ‘seldom or never’ part of their experience.

Students also felt that their online learning/course matched their learning styles ‘to some extent’ or fairly well in 84% of the cases.

Students provided the following explanations for their attitudes towards the match between online learning and their own knowledge of how they learn best.

**Table 4.2: Positive and negative aspects relating preferred learning styles to online learning approaches**

Positive responses	Negative responses
✧ facilitates flexibility	✧ materials are too lock-step
✧ challenge of new ways of learning	✧ preference for print based materials
✧ speed of feedback	✧ scarcity of different learning methods to satisfy a variety of learning styles
✧ questions answered quickly	✧ easily distracted from online learning
✧ convenience of home access	✧ technical difficulties particularly with ‘log ins’
✧ as a supplement to face-to-face [teaching] is an excellent way to learn	✧ learn best in a situation of class interaction
✧ opportunity for information to ‘sink in’	✧ have to have a lot of motivation
✧ efficient	✧ reliance on the screen is difficult
✧ reliable	✧ complex subjects difficult
✧ self-directed learning	✧ need to be ‘taught’
✧ take control of the process of learning	✧ no real interaction

Thirty-eight per cent of students maintained that online teaching is ‘fairly’ suitable to their subject area. They explained their responses to this question with comments similar to those given in table 4.2. The online environment provided convenience, access and flexibility. However, they also recognised that face-to-face classroom interaction was sadly lacking in computer-based learning and strongly advocated a blend of the two styles to gain maximum efficiency and learner satisfaction.

There was a convergence of the medium of delivery and content for those students enrolled in information technology courses: ‘When learning about computers—the best tool is a computer’. Students enrolled in other courses and modules had completely different attitudes to suitability, and commented that complex concepts were difficult to grasp online and that technological problems often caused blockages to their learning.

## Learner characteristics

### New skills

The students surveyed were more visual than auditory learners, with relatively high levels of learner independence and confidence. They felt that they needed limited levels of supervision and that they

were self-motivated. Their literacy and numeracy skills were, on balance, well-developed and they were technologically competent. They were team players who enjoyed the communicative dimensions of learning. Online learning had required them to learn some new skills in:

- ✧ written communication
- ✧ time management
- ✧ use of the technology
- ✧ relationships with teachers and students
- ✧ stress management
- ✧ research
- ✧ typing
- ✧ analysis
- ✧ anger management
- ✧ reflection.

## New roles

Students were asked to comment on their new roles as online learners. As table 4.3 indicates, their responses were both positive and negative.

**Table 4.3: Positive and negative affects on the online learner role**

Positive responses	Negative responses
✧ part of a cohesive group	✧ confused
✧ confident	✧ preference for more traditional roles
✧ positive	✧ frustrated
✧ able to take advantage of options	✧ sponge
✧ active	✧ lack of assistance
✧ enthusiastic	✧ difficult
	✧ lonely
	✧ passive
	✧ unmotivated

The variety of responses confirms that learners' conceptions of their new roles are located along a continuum. While the majority of students regarded themselves as being technologically competent, there were a significant number who were unimpressed by their new learner status. Students had adjusted to online learning by spending more time with the technology. Some compensated for the lack of face-to-face contact by increasing their use of the email and the phone. While they appreciated the increased flexibility created by online learning, their new roles included coping with sometimes unstable and frustrating technology. Some students felt more self-sufficient as learners while others had lost considerable amounts of their self-confidence.

## Advice to online students

The students surveyed provided the following advice to new online learners:

- ✧ be motivated and committed
- ✧ be organised about study and time



- ✧ ask questions
- ✧ build up skills
- ✧ be prepared to print material
- ✧ have regular contact with other students and the teacher
- ✧ have teenagers to help you
- ✧ remember your password.

Predominantly students were studying online for reasons of convenience, with the ultimate goal of increasing their employability.

## A competent online learner

Students were asked to describe the features of a good online learner. These included a learner who is:

- ✧ organised
- ✧ self-motivated
- ✧ positive
- ✧ focussed
- ✧ independent
- ✧ patient
- ✧ a problem-solver
- ✧ full of fun
- ✧ brave
- ✧ a good communicator
- ✧ flexible
- ✧ full of perseverance
- ✧ comfortable with the electronic medium
- ✧ willing to have a go
- ✧ ‘a passive doll with a photographic memory’
- ✧ literate.

The extent to which this matches the profile of VET students is a question worth asking and answering.

## Results—teacher and student questionnaires

The analysis of both the teacher and student questionnaire results can be summarised as follows.

Students and teachers agreed that web-based course content and email were used most often to facilitate learning.

Students felt that the features of effective pedagogy are ‘sometimes’ characteristic of their learning. Teachers felt much more strongly that these features characterised their online teaching behaviour, although the strategies they used did not always support this commitment.

Students and teachers disagreed about the extent to which building online relationships was part of their experience. Teachers maintained that the behaviours they used online did this far more effectively than students reported.

Teachers reported that they could cater for students' learning preferences and styles 'sometimes/usually'. The student responses confirmed this report.

The student and teacher free responses to questions related to the match between online learning and student learning styles, and preferences indicated that teachers clearly appreciated the range of opinions that students held about the suitability of the medium for effective learning.

Teachers and students agreed that online teaching is 'fairly suitable' to the subject area. The teacher and student issues raised to support the ranking showed a remarkable equivalence. Both groups surveyed recognised that, where content and delivery method were complementary, as with information technology, suitability increased. In the case of complex concepts or discussion-based and values-oriented content, face-to-face communication and interaction does not transfer well to an online environment.

Teachers and students agreed that online delivery had led to the acquisition of new skills. The teacher skills were more strongly clustered around using the technology than was the case with the students. Both survey groups recognised the importance of developing personal/affective skills to cope with the sometimes frustrating idiosyncrasies of the technology.

Students' descriptions of their new roles were both positive and negative. Teachers' responses were more focussed on the possibilities for facilitating, motivating, mentoring and guiding students' learning. However 'inexperienced' or 'average' teachers were decidedly less enthusiastic and expressed feelings of frustration at their apparently deprofessionalised status.

Both teachers and students agreed that a mixture of online and face-to-face teaching was the ideal as it allowed for both flexibility and communication.

# Appendix 5: Analysis of the online course filter

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## Introduction

A number of at-desk activities were carried out in conjunction with other data collection strategies in this project. These activities were designed to complement the information gathered from teachers and students via the questionnaires and focus groups. Research team members were asked to access a variety of online course sites. These sites were selected to ensure coverage of:

- ✧ Australian Qualifications Framework levels
- ✧ accredited/non-accredited courses
- ✧ content areas
- ✧ learner levels.

The team members came from a variety of backgrounds and all had expertise in both online delivery and online learning. They were briefed about the purpose of the activity and all were aware of the results of other phases of the project.

## The results

The courses were chosen to represent a variety of offerings at different levels (see table 5.1). Some courses were fully online while others were used primarily as a resource to supplement face-to-face teaching. The unifying feature of these courses was that students were expected to be learning using computer technology.

## The questions

The online course filter questions (appendix 8) were generated on the basis of what we wanted to know about a range of deliberately selected online courses. Online pedagogy is an interface between the teacher/facilitator, the student and the electronic course materials. It was therefore imperative to test an analysis of content and materials against the information about what constitutes sound online pedagogy gathered via the interviews and focus groups.

## Analysis

### Types of technology used to deliver content

Respondents were asked to place a percentage value beside each feature of technology delivery for the particular course they were analysing.

**Table 5.1: Online courses**

No.	Course title and description	Intended audience	Australian design		Accredited			AQF level
			Y	N	Y	N	U	
1	Virtual Independent Learning Centre Online resource for providers, schools and individuals	Adult Migrant Education Program students, non-English-speaking (NESB) students learning English at all levels	•			•		Not applicable
2	Beginning Indonesian Practice & review exercises for students	English-speaking students learning Indonesian at uni level		•		•		Not applicable
3	Online Office Computing—7365DD—Toolbox Database/spreadsheet Fundamentals/word processing	TAFE students	•		•			2
4	Guide to Children’s Behaviour Designed to help students enrolled in subject CHCIC2A	TAFE Diploma of Community Services students	•				•	5
5	Cybermall Shopping in English—language learning/ enrichment	NESB students learning English at advanced level	•			•		Not applicable
6	Building & Construction online Theory lessons to supplement face-to-face instruction	TAFE building & construction students	•		•			1
7	The World of Work Online resource designed to provide vocational skills—based on modules from Cert I in Work Education (Victoria)	Young adults (16+) with mild intellectual or psychiatric disabilities	•		•			1
8	Commercial Law Principles NAP750 is a core subject in most Business Studies courses	TAFE students in business studies, admin & mgt	•		•			A range of AQF levels
9	Virtual Campus Online Content—Building & Construction Six competencies from the general Construction Training Package, AQF 1 & 2	Apprentices, pre-apprentices	•		•			1–2
10	Train Small Groups Practical subject that develops skills & knowledge in workplace coaching or deliver training to small groups	Pilot program for 18–24 students in hospitality diploma during a nine-month work placement	•		•			Diploma Level 5
11	Masters Science (Library & Information Science) Theory & practice in LIS	Graduate tertiary students intending to work in libraries		•	•			Level 7/8

**Table 5.2: Types of technology used to deliver content (%)**

Course no.	Text	Graphics	Video	Sound	Email	Bulletin boards & forums	Hyper links	Cartoons	Virtual class rooms & libraries	Virtual work places
1	30	10		20	10			10	20	
2	50	50								
3	40	20	5	-	10	5	5	5	-	-
4	85	5			10					
5	55	20		20			5			
6	80	10					5			5
7	15	10		5			5	10		60
8	35	35		10		10	10			
9	45	10			5	20		15		5
10	60				15	5	5	15		
11	61					8			31	

The percentage scores for each feature were added together and then divided by 10 to give a weighting for each feature within the overall set of courses analysed.

**Table 5.3: Frequency of types of delivery**

Feature of delivery	Weighting	Ranking
Text	55.6	1
Email	7.0	2
Virtual workplaces	6.5	3
Cartoons	5.5	4
Chat rooms	5.5	4
Sound	5.5	4
Virtual classrooms & libraries	5.1	5
Bulletin boards & forums	4.8	6
Hyperlinks	3.5	7
Video	0.5	8

All courses relied heavily on text-based delivery with a relative weighting of 55.6. The remainder of the features of content delivery are clustered between the weightings of 0.5 and 7. Communication (email) and interaction (chat rooms, bulletin boards and forums) are located a relatively long distance from text-based delivery.

**Table 5.4: Level of self-management required by the learners**

Course no.	Comments
1	Designed for a continuum from teacher-assisted to completely self-directed
2	Total—no interactivity, automatically marked drill and practice exercises
3	Well designed—easy to use—linear and sequential
4	Very high
5	Total
6	Need to progress complete self-assessment and move on.
7	Given the target audience, the resource is mainly designed for teacher-led use. However, the ease of navigation and clear design structure should not present any difficulties if the resource were to be used in a learner-centred manner.
8	Learners are required to manage their own direction through the content but in terms of technical maintenance, the learner has no responsibility.
9	Some, by virtue of the fact that it is online.
10	Students were required to manage their studies independently; however, they had access to the teacher at all times. I would say that there was a high level of self management required this could be attributed to the fact that students didn't contact the lecturer often and failed to participate in many of the forums and chats.
11	Students would need to be good participants to manage the course. High level of organisation, time management and interactivity required.

All courses required some learner self-management. Three courses (1, 3 and 7) could be 'teacher-led' and this reduced the pressure on students to monitor their own progress. The remaining eight courses required mid-range to high levels of learner self-management. The learners in these courses needed to be organised, use time-management strategies, contend with the technology, engage in self-assessment tasks and participate in interactive exchanges with the teacher/lecturer.

**Table 5.5: Level of persistence required by learners**

Course no.	Low	Medium	High	Comments
1			•	Difficult to ascertain—full range.
2		•		After introductory unit all instructions are in Indonesian.
3			•	Students need to work through modules independently.
4			•	Because of 'double' set up, both CD-ROM and site to be mastered.
5	•			Student completely self-directed.
6				Student uses this as an adjunct to face-to-face.
7	•			The course has been designed to allow teachers or learners to use small 'chunks' for delivery of specific topics, or continuously work through larger sections in a 'storybook' fashion. Subsequently, the content flows together and persistence is not a major necessity.
8		•		This is not intended as a totally online course: if a learner were to approach it as such, their persistence would depend on their individual personality.
9	•			Has been designed to be used in a guided environment, and to be accessible.
10			•	
11			•	There is a wide range of web-based technologies the student needs to master; interactivity with lecturer & class level is high.

## Persistence

Three courses required low levels of learner persistence. The reasons given for the low level of persistence required were:

- ✧ Course 6 – materials used as an adjunct to face-to-face instruction
- ✧ Course 7 – a ‘teacher-led’ course
- ✧ Course 8 – designed specifically to be used in a guided environment.

Two courses required medium levels of learner persistence. The reasons given for the medium level of persistence required were:

- ✧ Course 3 – learner independence
- ✧ Course 9 – not a totally online course; teacher support available.

Five courses required high levels of learner persistence. The reasons given were:

- ✧ Course 2 – language difficulties
- ✧ Course 4 – two forms of technology to be mastered
- ✧ Course 5 – student completely self-directed
- ✧ Course 10 – independent study with access to teacher requires high level of self-management
- ✧ Course 11 – wide range of web technologies to be mastered; interactivity is high and consistent.

One course was difficult to rank in terms of learner persistence because of the range of students involved.

Courses which were an adjunct to face-to-face instruction or which were specifically designed to support students required lower levels of student persistence than those where the learning activities required higher degrees of learner independence.

High levels of learner persistence were required in courses displaying the following features:

- ✧ materials requiring high levels of self-management
- ✧ course utilising complex technologies
- ✧ language of instruction
- ✧ materials requiring student to be highly self-directed
- ✧ high levels of interactivity.

**Table 5.6: Levels of interactivity embedded in the course/content**

Course no.	Comments
1	Interactivity could be encouraged when it is used in a classroom context, but is not a feature per se.
2	Nil
3	Chat/forum/announcement sections are interactive; email available; facilitators highly available.
4	This seems limited (difficult to tell since access to website needed)
5	Nil
6	Virtually none
7	The majority of content is presented as scenarios that require the learner to identify the appropriate course of action or access further information about the particular situation. In addition, each chapter concludes with a 'games room', containing a variety of small interactive activities.
8	Quizzes (multiple choice, true/false, drag and drop), case book narrative tool; mouseovers, pop-ups, audio glossary, discussion starters.
9	Mouseovers, exploratory activities, quizzing.
10	The platform has many features that promote interactivity, in particular the discussion boards and virtual classroom; these features enable students to interact with each other and with the teacher. The program also provides facilities that teachers can use in course design such as web quests and video and audio clips and images.
11	High levels, chat on webboard, comments on other students' work, group work—weekly synchronous 2 hr.

## Interactivity

Email, chat rooms, bulletin boards and forums were weighted as 7.0, 5.5 and 4.8 respectively. By comparison to the 55.6 weighting for text-based delivery, these forms of interactivity are relatively limited. These results are confirmed, with 8 of the 11 courses reporting low, limited or game-based interactive activities. The three courses that reported higher levels of interactivity (3, 10 and 11) had active facilitators and assessment tasks organised around the interactions.

**Table 5.7: Level of self-monitoring embedded in the course**

Course no.	Low	Medium	High
1		•	
2			•
3		•	
4			•
5			•
6		•	
7	•		
8		•	
9		•	
10		•	
11			•

## Self-monitoring

Ten of the eleven courses analysed required medium-to-high levels of student self-monitoring.



**Table 5.8: Forms of assessment**

Course no.	Assessment forms
1	Not really the purpose of the Virtual ILC
2	Number of correct answers in exercises
3	Electronic assessment items & submission; cartoon & activity-based assessment items occur throughout the modules.
4	If participating as part of an accredited course assessment at worksite, otherwise through response to activities.
5	Comprehension style, short answer questions
6	Multiple-choice answers
7	The 'teacher-led' design implies that assessment would occur by observation of learners' progress through the resource. In addition, various games prompt learners to either participate in a classroom activity or submit an activity to their teachers.
8	Self-assessment occurs at the end of each major knowledge 'chunk' in the form of different quiz types.
9	Practical tasks suggested in the tutor guide.
10	Worksheets, online quizzes, discussion boards, oral presentation (videoed and submitted).
11	Report on observation, listserv report & monitoring, group development of a website that is peer evaluated online.

The forms of assessment in the courses analysed include:

- ✧ self-assessment
- ✧ activity-based assessment
- ✧ worksite assessment
- ✧ multiple-choice comprehension
- ✧ assessment via interaction.

Those courses with higher levels of interactivity and teacher-led design (3, 7, 10 and 11) reported more varied assessment items with high levels of teacher feedback. The remaining seven courses relied on embedded computer-marked, multiple-choice and comprehension questions with some opportunities for practical exercises to be carried out in the workplace.

**Table 5.9: Assumptions made about the learners**

Course no.	Assumptions
1	All levels catered for, although beginners will need more guidance.
2	Using it as a review/study for students enrolled in Indonesian language courses.
3	Follow lessons sequentially; reasonably competent IT users; have time and inclination to join in.
4	Highly technologically literate
5	That they can both read and write well in English.
6	Literate, enjoy 'lock-step' and have basic computing knowledge.
7	Learning occurs in a supportive environment; language/literacy level is relatively low; a variety of teaching strategies are employed.
8	That learners will be using this course primarily for revision, and that learners will have teacher support throughout.
9	Do not like reading, will have practical class time, will be assessed offline.
10	Several assumptions have been made about the learners in the course; these included the level of computer literacy of the learners, as students had completed a basic computer course at college and they had been exposed to Blackboard during their early training at the college. It became clearly evident during the early stages of the course that students didn't have the skills that they needed to carry out the work. The other big assumption was that of the learners' ability to be self-directed; students were not prepared for this and consequently many students dropped out of the course and in general found it difficult to manage their time effectively.
11	Highly motivated, high academic achievers, technologically 'switched on'.

The courses assumed that the participating online learners are:

- ✧ technologically competent (7)
- ✧ literate and numerate (8)
- ✧ using the course for revision (3)
- ✧ self-directed (5)
- ✧ low-level English language users (2).

**Table 5.10: Forms of feedback**

Course no.	Forms of feedback
1	Feedback is provided within classroom settings, not by the Virtual ILC itself.
2	Exercises are marked and numerical score is given.
3	Notes and conversational tone throughout and formative assessment items are immediately marked, email, forum, chat, ability to check progress at anytime.
4	Limited—set up with expectation of direct teacher support.
5	Nil
6	Computer-generated feedback
7	All quiz items, games and other situations requiring learners to make decisions provide appropriate feedback.
8	Feedback via quizzes
9	Verbose feedback in online quizzing, activities often require student/teacher interaction.
10	Emails were sent to the students every week and chat sessions were set up twice a week; found that students didn't tap into the communication channels that were set up for their benefit; therefore difficult to provide as much feedback as hoped; students emailed on a group basis and then on a personal level to check on their progress; students were also given written and verbal feedback on their course work.
11	Weekly chat sessions in webboard, between students, assessment task, reading journal activities contribute to class participation marks.

The forms of feedback that online learners receive in these courses varied from computer-generated responses to assessment items (7), to intensive teacher interaction via email, webboards, online quizzes and chat sessions (4).

The elements of sound pedagogical online practice were listed and the team members were asked to rank these on a scale of one to seven, where seven was the highest ranking and one the lowest ranking.

**Table 5.11: Rating of courses 1–6 in relation to the key pedagogical principles (PEIs)**

Pedagogical principles	Course number					
	1	2	3	4	5	6
	<i>Ranking (1–7)</i>					
1 The course creates a learner-centred environment.	7	1	4	2	1	2
2 The course uses constructivist approaches to teaching & learning.	7	1	3	2	1	2
3 The course is characterised by high-quality materials design.	7	4	5	1	1	3
4 The teaching and learning strategies used in the course foster the development of cognitive skills.	7	1	4	1	1	2
5 The course encourages high levels of interactivity among participants.	0	1	3	1	1	1
6 The course encourages an engagement with the online materials.	7	7	3	3	2	1
7 The learning experiences embedded in the course encourage synthesis and analysis.	4	1	2	2	1	1
8 The course creates opportunities for 'deep learning'.	5	1	1	2	1	1
9 The course provides consistent levels of feedback.	0	1	4	1	1	3
10 The course accommodates a diverse set of matches between materials, learning styles and learning contexts.	7	1	3	3	1	2
11 The course is designed using a model of delivery that includes thorough planning, monitoring, reviewing and evaluating of course materials and student progress.	7	1	4	1	1	2
12 The course provides a range of available navigational choices for students.	7	3	3	4	1	2
13 The course treats content differently and at various levels of sophistication depending on the prior knowledge of the learner.	7	1	2	2	1	2
14 The course provides appropriate feedback and opportunities for review and self-testing.	0	4	5	2	1	4
15 The course offers shortcuts for those who are time poor or already competent.	6	7	3	1	1	3

**Table 5.12: Rating of courses 7–11 in relation to the key pedagogical principles (PEIs)**

Pedagogical principles	Course number				
	7	8	9	10	11
	<i>Ranking (1-7)</i>				
1 The course creates a learner-centred environment.	7	5	4	4	7
2 The course uses constructivist approaches to teaching and learning.	1	1	5	3	6
3 The course is characterised by high quality materials design.	7	6	6	4	6
4 The teaching and learning strategies used in the course foster the development of cognitive skills.	2	4	6	4	6
5 The course encourages high levels of interactivity among participants.	5	5	6	3	7
6 The course encourages an engagement with the online materials.	7	5	6	5	7
7 The learning experiences embedded in the course encourage synthesis and analysis.	2	1	5	5	6
8 The course creates opportunities for 'deep learning'.	1	2	5	6	6
9 The course provides consistent levels of feedback.	7	5	6	6	6
10 The course accommodates a diverse set of matches between materials, learning styles and learning contexts.	5	3	5	4	6
11 The course is designed using a model of delivery that includes thorough planning, monitoring, reviewing and evaluating of course materials and student progress.	6	3	6	6	5
12 The course provides a range of available navigational choices for students.	1	7	4	3	4
13 The course treats content differently and at various levels of sophistication depending on the prior knowledge of the learner.	4	5	4	4	5
14 The course provides appropriate feedback and opportunities for review and self-testing.	6	6	6	5	4
15 The course offers shortcuts for those who are time poor or already competent.	7	5	6	2	4

## Pedagogical effectiveness indicators (PEIs)

The pedagogical effectiveness indicators were generated from the literature review, the interviews and the focus groups. The team members were asked to rate the courses on a scale from one to seven according to how well the course both displayed and embedded these indicators. The higher the overall rating of the course, the more pedagogically effective it was likely to be. The highest ranking possible where all indicators of pedagogical effectiveness were present was 105.

**Table 5.13: Ranking of courses according to indicators of pedagogical effectiveness**

Course no.	AQF level	PEI ranked score
1	-	78
2	-	32
3	2	49
4	5	28
5	-	16
6	1	31
7	1	68
8	a range	63
9	1/2	80
10	5	64
11	7/8	85

**Table 5.14: Ranking of course to show relationship between percentage of text online and pedagogical effectiveness**

Course no.	Text %	Pedagogical effectiveness ranking
1	30	78
2	50	32
3	40	49
4	85	28
5	55	16
6	80	31
7	15	68
8	35	63
9	45	80
10	60	64
11	61	85

## Summary

The courses analysed represent a range of online offerings designed for different audiences, Australian Qualifications Framework levels, and content areas. The general trends that emerge about the implicit pedagogies that underpin these courses include:

- ✧ Text is the predominant feature of online delivery.
- ✧ Communication and interactivity constitute a relatively small proportion of the total online activities required of the learner.
- ✧ Some degree of learner self-management is needed in all the courses, with medium-to-high levels being an important prerequisite for success.
- ✧ High and medium levels of student self-monitoring are required.
- ✧ Assessment is 'mechanical' in courses where there is limited teacher support and interaction.

- ✧ Courses assume technological competence and teacher support in a face-to-face or online environment.
- ✧ The type of feedback students receive is contingent on the level of teacher support.
- ✧ The indicators suggest that courses display a wide range of pedagogical effectiveness.

The characteristics of courses that suggest relatively higher levels of pedagogical effectiveness (ranking 65–105) include:

- ✧ designed for specific audiences with identifiable characteristics at both ends of the learning ability continuum
- ✧ high levels of feedback in a variety of forms
- ✧ high levels of teacher interaction and support
- ✧ a range of self-monitoring levels
- ✧ guidance levels high—students will need and receive support
- ✧ a range of activities to engage a variety of student learning styles and preferences
- ✧ developmental, active and formative assessment strategies.

The characteristics of courses that suggest relatively mid-range levels of pedagogical effectiveness (ranking 64–50):

- ✧ self-management levels relatively higher
- ✧ levels of learner persistence required medium to high
- ✧ interactivity in the form of games, quizzes, student to student, and student–teacher
- ✧ contact
- ✧ medium levels of self-monitoring

The characteristics of courses that suggest relatively low levels of pedagogical effectiveness (ranking 49–0) include:

- ✧ high levels of learner self-management
- ✧ higher levels of text-based delivery
- ✧ high levels of persistence where face-to-face teaching is involved
- ✧ interactivity absent in all but one course
- ✧ high-to-medium levels of self-monitoring
- ✧ restricted assessment strategies
- ✧ learners assumed to be technologically literate
- ✧ computer-generated feedback.

# Appendix 6: Applying the framework

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## Elements of productive pedagogies

The chapter entitled ‘A framework for online pedagogy’ in volume 1 of this report describes the development of the pedagogical effectiveness indicators (PEIs) for online learning and has listed the four dimensions of ‘productive pedagogies’ as: ‘intellectual quality, relevance, supportive classroom environment and recognition of difference’.<sup>1</sup>

The first of these establishes the principle ‘that a focus on high quality is necessary for all students to perform academically’.<sup>2</sup> Relevance refers to the way in which the knowledge that is presented is integrated or related to another body of knowledge or experience. The ideal of a supportive classroom environment is based on extensive research and introduces the concept ‘that students require a supportive classroom environment if they are to achieve what teachers ask of them’.<sup>3</sup> The fourth dimension of the productive pedagogies paradigm is concerned with the recognition of difference and how this difference is acknowledged through language, narrative and text type.

Each of the dimensions of effective pedagogy generates a set of questions that can be used to interrogate available data and current practice. These questions appear below. The answers reflect the relative strengths and weaknesses of online pedagogy in VET, and were used to inform questions used in the interviews, workshops and surveys.

### Intellectual quality

- ✧ *Higher-order thinking*: Is higher-order thinking occurring during the lesson? That is, is there evidence of conceptual depth, not merely content?
- ✧ *Deep knowledge*: Does the lesson cover operational field in any depth, detail or level of specificity?
- ✧ *Deep understanding*: Does the work and response of the students provide evidence of depth of understanding of concepts or ideas?
- ✧ *Substantive conversation*: Does classroom talk lead to sustained conversational dialogue between students, and between teachers and students, to create or negotiate understanding of subject matter?
- ✧ *Knowledge as problematic*: Are students critiquing and second-guessing texts, ideas and knowledge?
- ✧ *Meta-language*: Are aspects of language, grammar and technical vocabulary being foregrounded?

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<sup>1</sup> Ailwood, J, Grant, D, Gore, J, Hayes, D, Ladwig, J, Lingard, B, Luke, A, Mills, M & Warry, M 2000, ‘The four dimensions of productive pedagogies: Narratives and findings from the Queensland school reform longitudinal study’, paper presented to AERA Conference, New Orleans, 24–28 April.

<sup>2</sup> Ailwood et al. 2000, p.11.

<sup>3</sup> Ailwood et al. 2000, p.13.

## Relevance/connectedness

- ✧ *Knowledge integration*: Does the lesson integrate a range of subject areas?
- ✧ *Background knowledge*: Are links with students' background knowledge made explicit?
- ✧ *Connectedness to the world*: Is the lesson, activity, or task connected to competencies or concerns beyond the classroom?
- ✧ *Problem-based curriculum*: Is there a focus on identifying and solving intellectual and/or real-world problems?

## Supportive classroom environment

- ✧ *Student direction*: Do students determine specific activities or outcomes of the lesson?
- ✧ *Social support*: Is the classroom characterised by an atmosphere of mutual respect and support among teacher and students?
- ✧ *Academic engagement*: Are students engaged and on task during the lesson?
- ✧ *Explicit quality performance criteria*: Are the criteria for judging the range of student performance made explicit?
- ✧ *Self-regulation*: Is the direction of student behaviour implicit and self-regulatory?

## Recognition of difference

- ✧ *Cultural knowledges*: Are non-dominant cultural knowledges valued?
- ✧ *Inclusivity*: Are deliberate attempts made to increase the participation of the range of students?
- ✧ *Narrative*: Is the style of teaching principally narrative or is it expository?
- ✧ *Group identity*: Does the teaching build a sense of community and identity?
- ✧ *Active citizenship*: Are attempts made to encourage active citizenship within the classroom?

## Applying the productive pedagogies framework

The final set of results came from overlaying the productive pedagogies framework on the qualitative data collected. In summary *the presence of all within a lesson will contribute to the practice of a productive pedagogy*. The methodology for assessing the presence of these productive pedagogies online is explained in the chapter entitled 'A framework for online pedagogy' in volume 1 of this report. The question which this process addressed was:

To what extent does the data collected indicate that the dimensions and sub scales of productive pedagogies characterise the online delivery of VET?

The results of this process appear below.

## Interviews

**Table 6.1: Dimensions of productive pedagogies**

	Comments	
	R1	R2
<b>Intellectual quality</b>		
Dimensions—deep knowledge	X	XX
Deep understanding	X	X
Higher order thinking	X	X
Substantive conversation	X	X
Meta-language	X	X
Knowledge as problematic	X n/k	X
<b>Relevance</b>		
Dimensions—background knowledge	X	X
Problem-based curriculum	X	X
Connectedness	X	X
Knowledge integration	X n/k	X

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match;  
p/n = probably not conjecturing on evidence; n/k = not known from the evidence

	Comments	
	R1	R2
<b>Supportive classroom environment</b>		
Dimensions—student self-regulation	X	X
Social support	X n/k	X
Explicit criteria	X	XX
Student direction	X	
Academic engagement	XX	XX
<b>Recognition of difference</b>		
Dimensions—industry	n/k	n/k
Narrative	X n/k	X
Cultural knowledge	X n/k	X
Citizenship	X n/k	X
Group identity	XXX	XX

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match;  
p/n = probably not conjecturing on evidence; n/k = not known from the evidence



## Literature review

**Table 6.2: Dimensions of productive pedagogies**

	Comments	
	R1	R2
<b>Intellectual quality</b>		
Dimensions—deep knowledge	X	X
Deep understanding	X	X
Higher order thinking	X	X
Substantive conversation	X	X
Meta-language	n/k	X
Knowledge as problematic	p/n	X
<b>Relevance</b>		
Dimensions—background knowledge	X	X
Problem-based curriculum	n/k	X
Connectedness	n/k	n/k
Knowledge integration	n/k	n/k

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match; p/n = probably not conjecturing on evidence; n/k = not known from the evidence

	Comments	
	R1	R2
<b>Supportive classroom environment</b>		
Dimensions—student self-regulation	XX	XX
Social support	X	X
Explicit criteria	X	X
Student direction	X n/k	X
Academic engagement	XX	XX
<b>Recognition of difference</b>		
Dimensions—industry	X n/k	X
Narrative	X n/k	X
Cultural knowledge	X n/k	X
Citizenship	X n/k	X
Group identity	X n/k	X

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match; p/n = probably not conjecturing on evidence; n/k = not known from the evidence

## Workshops

**Table 6.3: Dimensions of productive pedagogies**

	Comments	
	R1	R2
<b>Intellectual quality</b>		
Dimensions—deep knowledge	XXX	XX
Deep understanding	XXX	XX
Higher order thinking	XXX	XX
Substantive conversation	XX	XX
Meta-language	X n/k	X
Knowledge as problematic	XX	X
<b>Relevance</b>		
Dimensions—background knowledge	X	X
Problem based curriculum	XXX	XX
Connectedness	X	X
Knowledge integration	X n/k	X

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match; p/n = probably not conjecturing on evidence; n/k = not known from the evidence

	Comments	
	R1	R2
<b>Supportive classroom environment</b>		
Dimensions—student self-regulation	X	X
Social support	XX	XX
Explicit criteria	X	XX
Student direction	XX	X
Academic engagement	XX	XX
<b>Recognition of difference</b>		
Dimensions—industry	XX	X
Narrative	X n/k	X
Cultural knowledge	X n/k	X
Citizenship	X n/k	X
Group identity	XXX	XX

Notes: X = limited match; XX = moderate match; XXX = strong match; XXXX = very strong match; p/n = probably not conjecturing on evidence; n/k = not known from the evidence

From the tables above, the qualitative data indicated that the characteristics of online pedagogy match the dimensions of productive pedagogies to the following extent.

### Intellectual quality

#### ✧ Higher-order thinking

There is limited-to-moderate evidence to support the assertion that conceptual depth, not merely content is being encouraged in the online environment.

#### ✧ Deep knowledge

The data show that deep knowledge where operational fields [are covered] in any depth or level of specificity varies between a limited and strong match.

- ✧ Deep understanding  
‘The work and response of students provides’ a limited to strong indication ‘of depth of understanding of concepts or ideas’.
- ✧ Substantive conversations  
The data indicate that online teaching and learning leads to limited or moderate opportunities for ‘sustained conversational dialogue between students and between teachers and students, to create or negotiate understanding of the subject matter’.
- ✧ Knowledge as problematic  
In an online environment students are ‘critiquing and second guessing texts, ideas and knowledge’ to a limited extent. The evidence is unclear on this issue.
- ✧ Meta-language  
The extent to which ‘aspects of language, grammar and technical vocabulary [are] being foregrounded’ in an online environment is either not known or limited.

## Relevance/connectedness

- ✧ Knowledge and integration  
Online pedagogy ‘integrates a range of subject areas’ to a limited extent.
- ✧ Problem-based curriculum  
The data show that online pedagogy focusses ‘on identifying and solving intellectual and/or real world problems’ in a limited to strong way.
- ✧ Connectedness  
Online pedagogy connects ‘to competencies or concerns beyond the classroom’ in either a limited way or in ways that have not yet been discussed or evaluated.
- ✧ Background knowledge  
The extent to which the data indicate that online pedagogy ‘links students’ background knowledge’ explicitly with new learning is limited.

## Supportive classroom environment

- ✧ Student direction  
The extent to which the evidence suggests that ‘students determine specific activities or outcomes of the lesson’ in an online environment is limited to moderate.
- ✧ Social support  
The data indicate that ‘the classroom is characterised by an atmosphere of mutual respect and support among teachers and students’ to a limited to moderate extent.
- ✧ Academic engagement  
Online pedagogy is characterised by ‘students engaged and on task during the lesson’ to a moderate degree.
- ✧ Explicit quality performance  
The extent to which ‘the criteria for judging the range of student performance [are] made explicit’ is in the limited to moderate range.
- ✧ Narrative  
The degree to which the pedagogy of online delivery is either ‘narrative or expository’ is either not evident from the data or limited.
- ✧ Group identity  
Online delivery ‘builds a sense of community and identity’ in some ‘strong’ ways.
- ✧ Active citizenship  
The extent to which the online environment encourages ‘active citizenship’ amongst the learners is either unclear or limited.

## Summary

In all instances there was a less than ‘very strong’ match between what the qualitative data suggested about online pedagogy and what the research indicates constitutes effective pedagogy.

Some dimensions of online pedagogy do demonstrate a ‘strong’ match with the features of productive pedagogies. These are in the areas of:

- ✧ deep knowledge acquisition
- ✧ deep understanding
- ✧ problem-based curriculum
- ✧ group identity.

However, it should be noted that these matches were not unequivocal, and the range of responses varied from ‘limited’ to ‘strong’.

The dimensions of online pedagogy which demonstrated a ‘moderate’ match with the dimensions of productive pedagogies are:

- ✧ higher conversations
- ✧ substantive direction
- ✧ student direction
- ✧ social support
- ✧ academic engagement
- ✧ explicit quality performance
- ✧ self-regulation.

Again it should be noted that the evidence suggests that these ‘moderately’ ranked dimensions are equivocal and are weighted more to the ‘limited’ end of the scale in all cases.

The following characteristics of productive pedagogies are either present in an unequivocally ‘limited’ way or ‘not known’ from the data:

- ✧ knowledge as problematic
- ✧ meta-language
- ✧ knowledge integration
- ✧ connectedness
- ✧ background knowledge
- ✧ cultural knowledges
- ✧ inclusivity
- ✧ narrative
- ✧ active citizenship.

The qualitative data analysis therefore suggests that if online pedagogy is to become more ‘productive’ and effective for VET students, all the dimensions of pedagogy need to be addressed in the design and delivery of online materials. In particular:

- ✧ The cultural dimensions of learning require attention.

- ✧ The capacity of the online environment to cater for and build on cultural difference in an inclusive way needs to be embedded into delivery.
- ✧ The online environment must develop pedagogies that value difference and that begin with valuing the student knowledge base.
- ✧ The transference of strategies to include students with disabilities in online learning is an issue that requires will and talent.
- ✧ The critical skills of information and functional literacy need to be accepted as integral parts of online pedagogy.
- ✧ The social dimensions of learning and the encouragement of democratic learning practices require detailed attention in this environment.

The evidence suggests that some innovative practices are working towards the creation of a productive pedagogical environment. The move from predominantly text-based delivery to more interactive forms of student engagement is a sound beginning. However, this trend must be supported by equivalent attention to the dimensions of pedagogy which are relatively underdeveloped or non-existent in this environment. The capacity of present technology to facilitate these changes is a contestable question.

In the VET context, communication skills and the key competencies are expected to be embedded in training packages. The evidence suggests that beyond 'conversation', very few communication skills have the opportunity to surface. Similarly, the key competency of 'using technology' is present in online delivery by definition. However, the other key competencies receive very little explicit or implicit attention.

# Appendix 7: Questionnaire consent and information forms

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**CHARLES STURT**  
UNIVERSITY



**Project Title:** One size doesn't fit all: Pedagogy in the online environment

## CONSENT FORM

- I have received information about this research project.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any time.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential. My organisation may be identified only with the consent of all parties.

This study has been approved by Charles Sturt University's Ethics in Human Research Committee.

I understand that if I have any complaints or concerns about this study, I can contact the Executive Officer whose address and phone number are shown on the Information Sheet I have been given.

Name of participant \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_

# CHARLES STURT UNIVERSITY



**Project Title:**            **One size doesn't fit all: Pedagogy in the online environment**

## INFORMATION SHEET

Thank you for helping with this research project. Your responses to the following questionnaire will help us to build up a picture of what effective online teaching is.

The focus on online delivery of VET in Australia is clearly supported by both policy and funding. As the use of this new training medium increases so too does the issue of emerging online pedagogy. How online materials are delivered; how teachers regard their roles; and how students learn in the online environment are the crucial research questions we are addressing in this particular project.

The first step of the study was to review relevant literature and then interview people working in the policy development and implementation of online delivery of VET in Australia about their responses to the issues raised in the literature. Based on the results of this review and subsequent interviews, the following questionnaire was developed in order to gain a clearer picture of teaching and learning online.

Participants in this stage of the project are asked to complete the questionnaire and consent form and return them to the researchers at:

**Att: Ros Brennan/Judy Geeves**  
**School of Education - Charles Sturt University**  
**PO Box 588**  
**WAGGA WAGGA NSW 2650**

All surveys and consent forms will be stored securely and separately and treated confidentially by Roslin Brennan, the Principal Researcher, and her contact details are (02) 6933 2740 or [rbrennan@csu.edu.au](mailto:rbrennan@csu.edu.au).

This project has been approved by Charles Sturt University's Ethics in Human Research Committee. If you have any complaints about the ethical conduct of this project, you may contact the Committee through the Executive Officer.

The Executive Officer  
Ethics in Human Research Committee  
The Grange  
Charles Sturt University  
BATHURST NSW 2795  
Phone: (02) 6338 4187  
Fax: (02) 6338 4833

# Appendix 8: Questions for the online course filter

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1. Site address .....
2. Access date .....
3. Course title .....
4. Course description .....
5. Intended audience for the course .....
6. Australian designed ..... Yes or No
7. If No to question 6 ..... Country of origin
8. Accredited or non accredited ..... Yes or No
9. If Yes to question 8 to what level in the AQF .....
10. Ease of access to the site ..... Please comment
11. Ease of navigation around the site ..... Please comment
12. Types of technology used to deliver content  
(please place a percentage value beside each category based on calculations that relate to the whole course):
  - text ..... bulletin boards and forums .....
  - graphics ..... links to other net based resources .....
  - video clips ..... cartoons .....
  - sound ..... virtual classrooms and libraries .....
  - email ..... virtual workplaces .....
  - chat .....
13. Level of self management required by the learners ..... Please comment
14. Level of persistence required by learners to proceed with the course ..... Please comment.
15. Forms of interactivity embedded into the course ..... Please specify
16. Level of self monitoring embedded into the course .....
17. Forms of assessment accompanying the course ..... Please list
18. Assumptions made about the nature of the learners by this course ..... Please list
19. Types of feedback provided to participants in the course .....



On a continuum of 1 to 7 (where 7 is the highest ranking and 1 is the lowest) rank this course in terms of the following statements:

- a) The course creates a learner centred environment
- b) The course uses constructivist approaches to teaching and learning
- c) The course is characterised by high quality materials design
- d) The teaching and learning strategies used in the course foster the development of cognitive skills
- e) The course encourages high levels of interactivity among participants
- f) The course encourages an engagement with the online materials
- g) The learning experiences embedded in the course encourage synthesis and analysis
- h) The course creates opportunities for 'deep learning'
- i) The course provides consistent levels of feedback
- j) The course accommodates a diverse set of matches between materials, learning styles and learning contexts
- k) The course is designed using a model of delivery that includes thorough planning, monitoring, reviewing and evaluating of course materials and student progress
- l) The course provides a range of available navigational choices for students
- m) The course treats content differently and at various levels of sophistication depending on the prior knowledge of the learner
- n) The course provides appropriate feedback and opportunities for review and self testing
- o) The course offers shortcuts for those who are time poor or already competent.

General comments:

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The National Centre for Vocational Education Research is Australia's primary research and development organisation in the field of vocational education and training.

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ISBN 1 74096 163 3 web edition