

Online support for VET clients: expectations and experiences

Sarojni Choy

Australian National Training Authority, Queensland

Cathy McNickle and Berwyn Clayton

Canberra Institute of Technology, Canberra

The integration of information technology has dramatically enhanced flexible delivery of vocational education and training (VET) by expanding and modernising capabilities to include the online medium. This has necessitated the expansion of learning services to meet the needs of more diverse groups of learners.

Though research activities are continuing to inform how innovative use of new technology could enhance the delivery of courses, little is known about the nature of support for online learning that learners expect. The nature and range of services for online learning remain diverse, as each provider attempts to meet the needs of its learners within the constraints of variables that include mainly infrastructure, skilled staff, and specifically designed materials for this mode of delivery. Within Australia, presently there are no minimum standards for online delivery or services to learners.

In view of the deficiency in research informing about services for online learners, a national study was conducted to explore the expectations and experiences of online learners in the Vocational Education and Training (VET) sector. This paper briefly reports the outcomes of the study.

Online learners enrolled with various Registered Training Organisations (RTOs) from the VET sector were contacted for their voluntary participation in a survey to explore their expectations of services for pre-enrolment/enrolment, learning and teaching and technical support. Altogether 201 complete, useable responses to the survey were received. The mean response for each item in the survey was examined to rank the services in order of most to least expected. Five most expected services in each category (pre-enrolment/enrolment, learning and teaching, and technical) are reported.

Background

The diversification of flexible delivery options, particularly since the introduction of the online mode, has prompted the National Flexible Delivery Taskforce and the Australian National Training Authority (ANTA) to initiate several new projects to enhance the learning needs of those pursuing studies through the flexible delivery modes. A review of the local literature on such projects indicates a greater focus on technical support and professional development for staff, as RTOs grapple with the transfer of learning from the traditional classroom mode to online. Much of the support services are based largely on the assumptions that the needs of online learners are similar to those of traditional distant education students using other

modes. There is very limited evidence of research on the nature of services that online learners expect from their providers.

Online learning requires 'the use of cyber systems such as Intranet and Internet for communication for the purpose of teaching and learning' (Warner et al 1998). It involves the correct use of technical as well as pedagogical skills and knowledge to successfully undertake learning by utilising the capacities of information technology. Indeed online education is seen to be evolving its own pedagogy (National Education Association 2000), therefore requiring considerable research to identify, develop and provide appropriate support.

Even with access to a wide network through the world wide web, learner support from the providers is critical for online learning. Salmon (1998) asserts that it is the responsibility of the provider to ensure the learner is sufficiently comfortable with technology so that it becomes an 'enabling device rather than a barrier'. A recent study by Cashion (2000) shows that despite the arguments for the benefits of the online environment, many learners are not taking full advantage of this technology. LeCornu (2000) supports that many learners have the basic skills in computing, but require training for more effective use for formal learning. Evaluations by Laurillard (1993), Bignum and Kenway (1998), Bennett et al (1999) and McKavanagh et al (1999) have stressed that online learners have three key requirements:

- contact with peers and teachers;
- well-developed information literacy skills; and
- stimulating online activities.

Carroll and McNickle (2000) advocate that all of the support services in place for traditional face-to-face students should also be made available to online students. Added to these, specific services to support online pedagogy should be considered. In any case, the presence of a tutor who is able to respond quickly to the learners is vital. Mitchell and Bluer (1996) assert that the tutor is often more significant than the learning technology. Harper et al (2000) allude to various challenges for facilitators and learners to achieve success through the online mode. They highlight nine critical issues to consider:

- maintaining motivation
- acceptance of the technology by teachers and students
- prior knowledge for participation in online learning
- attitudes towards technology
- content level
- degree of interactivity
- ability of facilitators and learners to use the technology
- accessibility to the systems supporting online learning
- communication skills.

The overall success in the transition between classroom and online education is a challenge being addressed by all RTOs. Clayton et al (2000) maintain that the success of online delivery in the VET sector will be significantly driven by the experiences and expectations of the learners. Without appropriate and adequate learner support, the promise of information technology to enhance flexible delivery will be difficult to

realise. It is therefore essential to investigate the limitations experienced by learners and adequately address specific needs for online learning. Hence this study was supported by the National Centre for Vocational Education and Research (NCVER) to explore the expectations and experiences of online VET learners in Australia.

Methodology

The purpose of the study with online learners was firstly to explore their level of expectation for a range of services relating to pre-enrolment, online learning and teaching, and technical assistance. A questionnaire was developed and respondents were asked to rate their level of expectation against each item. The items originated from a review of literature on student support services for pre-enrolment, online learning and teaching, and technical assistance. The questionnaire was structured into four sections. Section I was designed to collect background information about the respondents. The remaining three sections focused on pre-enrolment, online learning and teaching and technical support. There were 28 items to be rated for pre-enrolment; 34 items for online learning and teaching; and 16 items for technical support. Each item had a Likert-type scale ranging from 0 to 3 (0 = Not expected; 1 = Low; 2 = Moderate; 3 = High) to indicate the level of expectation.

At the end of Section IV, respondents were also provided space to write any comments regarding their expectations of services that were not mentioned in Sections II-IV. The questionnaire was reviewed by the members of the Project Reference Group and piloted with 22 online students before the main survey was conducted.

The second purpose of the study was to investigate online learners' evaluation of current online services. They were asked to indicate the essential services, those that are most beneficial, examples of best practice and any limitations in current support mechanisms. Data for the second purpose was collected through interviews in which 11 online learners participated. Data from both sources - survey and interviews - were collected using online technology, mainly emails.

Permission was sought from Directors of online VET RTOs to conduct the study with their students. A liaison person in each participating RTO was contacted to assist with the administration of the survey questionnaire and interview proforma to online students enrolled in the second semester of year 2000. The survey was sent individually to each student; mass emailing was avoided to maintain confidentiality.

The survey participants were requested to return their completed questionnaires directly to the project officer within a week. The project officer's contact details were provided to each participant in case they needed clarification about the study. Reminders were sent to those who had not responded within a two-week period. The main reason for not responding was due to limited time resulting from heavy work demands prior to the Christmas break.

Overall, it was found that the participants were very cooperative and open with their comments. An added advantage in using the email for the survey was that respondents could be accessed easily if they forgot to respond to any of the questions in the survey. Furthermore, it was possible to clarify any comments they wrote at

the end of the questionnaire. Thankyou notes were emailed to each individual who responded.

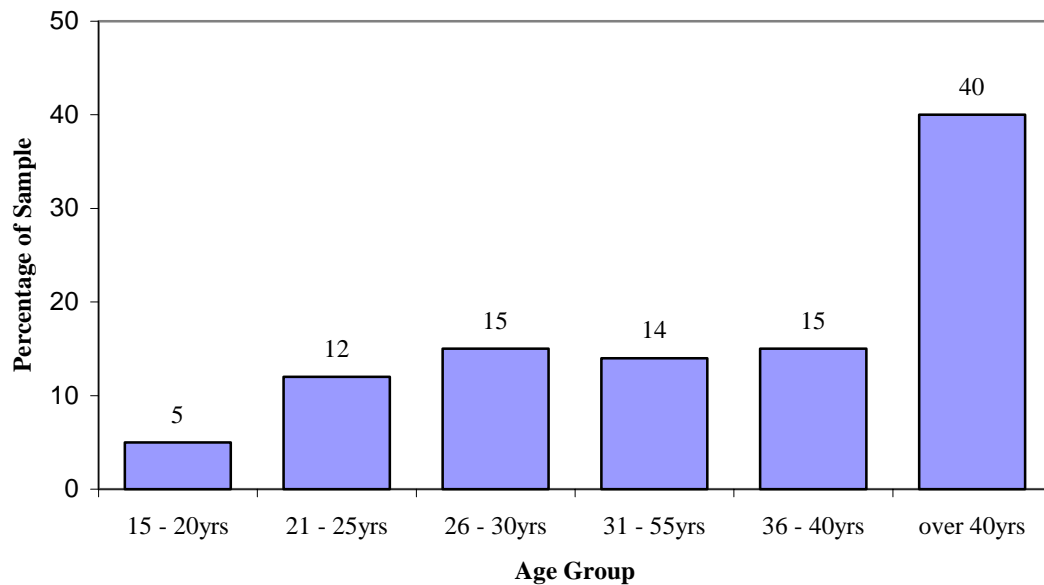
All quantitative data were analysed using the SPSS computer software. The response to each question was coded. The analyses of the survey data were mostly descriptive in nature.

The 201 completed survey responses were received from students who represented 23 public and private RTOs offering VET-type courses across Queensland, New South Wales, Australian Capital Territory, South Australia and Victoria. Before presenting the results, it is important to examine the profile of the online learner.

Online learners – a brief profile

There were 68% females and 32% males in the sample. A majority of the respondents (40%) were aged over 40 years. Only 5% were aged below 20 years and 12% were between the age of 21 and 25 years. Fifteen percent of the sample was aged 26-30 years, 14% was 31-35 years old and 15% was 36-40 years. The distribution of respondents within each age group is shown in Figure 1.

Figure 1: Distribution of sample within each age group



Of the total sample, only one student indicated that he was 'Disabled' and a majority (73%) did not belong to any of the other stated target groups (Aboriginal and Torres Strait Islander; culturally and linguistically diverse background; rural or regionally isolated). Only 3 students (2%) were of Aboriginal or Torres Strait Islander origin, 5.9% were from a culturally and linguistically diverse background and 19% were from rural or regionally isolated areas.

Online learners who participated in this study were studying courses at certificate and diploma levels. A majority of the learners in the sample (48%) undertaking online courses were studying for a Certificate III qualification. About 26% were pursuing a Certificate IV course, while 7% were completing courses for a Certificate II or III, and 5% were undertaking studies for a diploma and 6% for an advanced diploma. Subjects in information technology, business administration, accounting and government administration were the most common areas of study.

Among those pursuing studies through the online mode, a majority were beginners with this mode of study. About 66% said they were completing their first module at the time of the survey. About 31% had already completed between 1-5 modules through the online mode and 3% had completed over five modules using this medium.

The respondents were asked where most of their online learning took place. The sample's responses showed that most (42%) of them completed all their online learning from home. About 22% said all their online learning took place at work. Seventeen percent (17%) of the sample completed learning mostly at home and the rest at work, while 16% said they completed most of their online learning at work and the rest at home. Only 2% of the sample said they completed their online learning at the computer centre of their institute and 1% indicated their learning took place at a friend's house, because they did not own a computer.

A majority of online learners (64%) said they intend to complete the whole course via the online mode. About 17% of the sample plan to complete some modules/subjects online and the rest by other modes. Nineteen percent (19%) of the sample were not decided about future online learning.

A large proportion of the sample (94%) was employed while studying online. Among them, 7% were in part-time employment while 87% held full-time jobs. Online courses appear to be popular with full-time employees, most of whom seem to dedicate time outside their working hours to complete their studies.

The sample was asked to state their reasons for undertaking online courses. The three main reasons were: flexibility, change and lack of choice.

Of the total sample, 68.2% undertook online learning because of flexibility in terms of pace, time and place. Some examples of statements they wrote were:

Freedom – I can work at my own pace.

No time constrains, can work whenever I have time.

Due to geographical constraint. I live in the rural area.

About 12.2% said they enrolled in online courses to experience a change from traditional delivery systems.

Just wanted a change.

I have an interest in the internet systems.

I enrolled in a pilot course and wanted to test out the online system.

About 19.6% of the sample said they did not have a choice in the course they were studying online because it was offered only through this mode. Among them, a few said their employer who sponsored their study requested they completed the course online to participate in a pilot study.

Overall, the results show that the flexibility in time, place and pace are the key reasons why learners enrol in online courses.

In summary, the results of this study illustrate a profile of online VET learners that represents a set of common characteristics. Online VET learners appear to be represented mostly by:

- females;
- those aged over 30 years;
- individuals who do not belong to any specific target group (disabled, Aboriginal or Torres Strait Islander, culturally and linguistically diverse background, rural or regionally isolated);
- those mostly pursuing a Certificate III qualification in information technology;
- beginners using the online mode of delivery;
- learners who hold full-time employment and complete most of their learning in their own time, at home; and
- those who intend to complete the entire course via the online mode due to flexibility in time, place and pace.

Results

Level of expectation for pre-enrolment/enrolment services

The mean scores for the 28 pre-enrolment/enrolment support services listed in the questionnaire were examined to rank the level of expectation (0 = not expected, 1 = low, 2 = average, 3 = high). Table 1 ranks (from highest to lowest) the sample's expectations for each type of service for pre-enrolment and enrolment.

Table 1: Expectations for pre-enrolment/enrolment services

Expectation – highest to lowest	Mean
Detailed information about what is required to complete the module/course	2.80
Detailed information about the courses	2.78
Security of personal details on the institute's database	2.69
Instructions on whom to approach for help	2.59
Information on how to enrol	2.57
Instructions on how to seek help	2.55
The software and hardware requirements needed to do the course/module	2.46
Recommended library resources to support learning	2.37

A guide on minimum time required for online learning each week	2.28
Comprehensive information about the institution providing the online course	2.27
Enrolment via the internet	2.25

Ability to make changes to personal details through access by password	2.21
Electronic security measures and how to utilise them	2.12
Timetables for any workshop/orientation on using online technologies	2.06
Guide to effective learning strategies for independent learning	2.05
Option to complete the RPL via the internet	2.05
An assessment of my readiness for online learning	2.04
Advice about the level of self-motivation required for online learning	2.03
Assistance with the development of a personal learning plan	1.99
The total cost for completing each module/course	1.95
Suggestions on managing my learning	1.95
Access to student administration	1.93
Guide to institute provider's policies on using the internet for learning	1.89
Access to institute student services	1.86
Information about copyright obligations	1.69
Pre-enrolment counselling on my suitability for online learning	1.49
Payment of fees via the internet	1.31
A special deal with an internet service provider that is set up by the institution	1.25

The five most expected services for pre-enrolment/enrolment were:

- Detailed information about what is required to complete the module/course (m = 2.80)
- Detailed information about the courses (m = 2.78)
- Security of personal details on the institute's database (m = 2.69)
- Instructions on whom to approach for help (m = 2.59)
- Information on how to enrol (m = 2.57).

The lowest expectations for pre-enrolment/enrolment services were for:

- A special deal with an internet service provider that is set up by the institution (m = 1.25)
- Payment of fees via the internet (m = 1.31)
- Pre-enrolment counselling on my suitability for online learning (m = 1.49)
- Information about copyright obligations (m = 1.69)
- Access to institute student services (m = 1.86)

There was no significant difference in responses by age. There was a significant difference ($t = -2.21$, $p = 0.030$) in expectations by male and female learners for four services. Females had a higher expectation for *detailed information about what is required to complete the module/course* (m = 2.86) than males (m = 2.67). Females also had a higher expectation for *enrolment via the internet* ($t = -2.07$, $p = 0.040$) (m = 2.35) than males (m = 2.03). With regards to security of personal details on the institute's database, females expected this service more than males did ($t = -2.16$, $p = 0.030$) (m

for females = 2.77; m for males = 2.52). Males indicated lesser expectation for the *option to complete RPL via the internet*, than females ($t = -2.00$, $p = 0.045$) (m for males = 1.83; m for females = 2.15).

There was a significant difference between expectations of employed and unemployed online learners. The differences were in four types of services:

- the total cost for completing each module/course ($t = -8.42$, $p = 0.00$)
- the software and hardware requirements needed to do the course/module ($t = -6.26$, $p = 0.000$)
- security of personal details on the institute's database ($t = -4.46$, $p = 0.000$)
- access to institute's student services ($t = -2.44$, $p = 0.037$).

The unemployed online learners had higher means for these services (m = 3.00, 3.00, 3.00 and 2.43 respectively). Compared to those in full-time employment, learners who were in part-time employment had higher expectations for *the software and hardware required to complete the course/module* (m = 3.00); *detailed information about what is required to complete the module/course* (m = 3.00); and *an assessment of readiness for online learning* (m = 2.50). The difference in the expectations of the two groups was significant ($t = 5.88$, $p = 0.000$; $t = 2.95$, $p = 0.004$; $t = 2.82$, $p = 0.011$ respectively).

Level of expectation for learning and teaching

The sample's expectations for each type of service for online learning and teaching are ranked in Table 2.

Table 2: Expectations for learning and teaching

Expectation – highest to lowest	Mean
Clear statements of what I was expected to learn	2.69
Helpful feedback from teachers	2.67
Requirements for assessment	2.65
Communication with <u>teachers</u> using a variety of methods, eg email, online chat, face-to-face discussion	2.65
Timely feedback from teachers	2.60
Course outline and learning outcomes	2.54
Information on due dates for the different tasks	2.51
Information on the return time for assignments	2.49
Strategies for approaching assessment tasks	2.49
The way feedback is to be provided to me	2.41
Learning materials presented in small manageable amounts	2.37
How I could demonstrate my learning	2.36
Guide to composing assignments	2.27
Opportunities to practice skills that are being acquired	2.25
Regular encouragement by teachers	2.22
Guide on how to make my learning effective	2.21
Back-up support using telephone or faxes	2.16

Strategies for independent learning	2.07
Tips on how I would succeed in online learning	2.01
Bulletin board set up for each course	1.99
System to address student concerns	1.98
Access to frequently asked questions and responses about online learning	1.95
Web-board for discussion	1.85
Communication with <u>other students</u> using a variety of ways, eg email, online chat	1.84
Procedures for withdrawing from the course	1.82
Procedures for transferring from the course	1.70
Online chat room	1.66
Grievance and appeals procedures explained	1.67
Provision of suggestion box	1.64
Links to job vacancies	1.30
Working in groups	1.28
Strategies for job interviews	1.23
Access to the institute's student association	1.21
A guide to writing resumes	1.21

The five most expected services in the area of learning and teaching were:

- Clear statements of what I am expected to learn (m = 2.69)
- Helpful feedback from teachers (m = 2.67)
- Information on requirements for assessment (m = 2.65)
- Communication with teachers using a variety of ways, eg email, online chat, face-to-face discussion (m = 2.65)
- Timely feedback from teachers (m = 2.60)

The lowest expectations for learning and teaching services were for:

- A guide to writing resumes (m = 1.21)
- Access to the institute's student association (m = 1.21)
- Strategies for job interviews (m = 1.23)
- Working in groups (m = 1.28)
- Links to job vacancies (m = 1.30).

As a majority of online learners in the survey were already in full-time or part-time employment, a low level of expectation for these services was not surprising.

There was no significant difference in the responses by age group. However, significant differences were noted in the responses of males and females for the following services:

- *Communication with teachers using a variety of methods, eg email, online chat, face-to-face discussion* (t = -2.32, p = 0.023). The mean response for males was 2.47 and for females it was 2.73.
- *Helpful feedback from teachers* (t = -2.51, p = 0.014). The means of males and females were 2.49 and 2.75 respectively.

- *Presentation of learning materials in small manageable amounts* ($t = -2.59, p = 0.011$). Males had a mean of 2.13 and females 2.48.
- *Strategies for job interviews* ($t = -2.54, p = 0.012$). Females had a higher mean of 1.35 than males, who had a mean of 0.92.
- *Strategies for approaching assessment tasks* ($t = -2.21, p = 0.029$). The mean for males was 2.31 and for females it was 2.56.
- *Guide for composing assignments* ($t = -2.33, p = 0.022$). The mean for males was 2.05 and for females it was 2.37.
- *The way feedback is to be provided* ($t = -2.60, p = 0.011$). Females had a higher mean of 2.53 than males, who had a mean of 2.16.

Level of expectation for technical support

Table 3 contains the ranking (from highest to lowest) of the expectations for technical support.

Table 3: Expectation for technical support

Expectation – highest to lowest	Mean
Quick response to technical problems	2.34
Easy access to technical assistance	2.24
Provision of technical (IT) assistance throughout the course	2.17
Strategies for checking the accuracy/quality of information on the internet	2.09
Access to frequently asked questions and responses about technical issues	2.05
Tips on how to conduct online research	2.02
Provision of glossaries to inform me about technical online terms	1.96
Tips on how to access databases	1.90
Tips on how to use electronic reference material	1.87
Tips on how to download information	1.87
Code of Conduct for online users	1.78
Guide on how to use search engines	1.72
A guide on participating in a discussion group	1.67
Net etiquette	1.64
Tips on how to attach and send files by email	1.53

Guide to using email	1.49
----------------------	------

The five most expected technical services were:

- Quick response to technical problems (m = 2.34)
- Easy access to technical assistance (m = 2.24)
- Provision of technical (IT) assistance throughout the course (m = 2.17)
- Strategies for checking the accuracy/quality of information on the internet (m = 2.09)
- Access to frequently asked questions and responses about technical issues (m = 2.05).

The lowest expectations for technical services were for:

- Guide to using email (m = 1.49)
- Tips on how to attach and send files by email (m = 1.53)
- Net etiquette (m = 1.64)
- Guide on participating in a discussion group (m = 1.67)
- Guide on how to use search engines (m = 1.72).

There was no significant difference in the mean responses for technical support services by age, gender or employment status.

Evaluation of current online services

Online learners who participated in the online interviews cited three essential services for completion of their courses: regular contact with teachers/tutors, quick response from teachers/tutors and regular support for learning. They believed that regular communication with teachers/tutors as well as peers through emails or telephone was important to motivate and encourage them to continue with their learning. As the technologies that support online delivery are recognised for speedy communication, learners expect quick responses. Learners expect their teachers/tutors to provide them with direction, links to resources, clear navigation, and to establish networks to support their learning. They also suggested that teachers/tutors should initiate and schedule regular discussions through chat rooms.

Regular contact with teachers/tutors and hyperlinks to resources and other sites were identified as the most beneficial services for online learners. Among the services perceived as best practice examples, the interviewees listed: bulletin boards; enrolment information with links to application forms; course information including costs for each; and the option to complete the assessment online.

According to the interviewees there were two main limitations in the current online services that related to facilitation and technical systems. Many believed that teachers did not provide clear guidelines or explanations of their expectations from learners. The interviewees shared a common view that many teachers/tutors are not adequately trained for online delivery. Some learners identified limitations in technical knowledge (of teachers) in the use of online technology. A few interviewees stated disappointment with changes in teachers/tutors during the semester. Learners experienced difficulties because some materials were not

specifically designed for online delivery. They compared online learning materials that were offered by RTOs (mostly international) other than those they were enrolled with.

Limitations with the current technical systems related mostly to navigation problems that limited access to a set number of webpages at a specific time. This presented them with difficulties when they wanted to cross-reference a particular page or document while preparing notes or completing assessment tasks. According to a few online learners, they expected a lot more interactivity with the learning materials than was currently available. Access to technical support (eg log-in) after hours was of concern to a few online learners.

Summary

The results of this study suggest that there is a higher proportion of females than males undertaking VET online courses. A majority of online learners (68%) are aged over 40 years and are in full-time employment. A majority do not belong to any particular target group (eg disabled; Aboriginal or Torres Strait Islander; culturally and linguistically diverse background; rural or regionally isolated). A range of courses at the Australian Qualification Framework (AQF) levels is currently being offered online. These include courses for the Certificate I, II, III and IV and courses at the diploma and advanced diploma levels. Courses at the Certificate III level were most diverse and popular.

The survey responses indicate that most of the learning tasks are completed in the learners' own time at home. They explained that the flexibility in pace, time and place of learning were the key reasons for choosing the online mode. Most of the learners surveyed for this study planned to complete their entire course via the online mode.

The survey results show that online learners have high expectations of certain services during pre-enrolment/enrolment and learning and teaching. Five services that are most expected are:

- Detailed information about what is required to complete the module/course
- Detailed information about the courses
- Security of personal details on the institute's database
- Clear statements of what learners are expected to learn
- Helpful feedback from teachers.

The first three of these services are expected during pre-enrolment and enrolment and the remaining two relate to learning and teaching.

Although much of the learning that takes place through the online delivery systems requires self-directed learning approaches, the findings of this study indicate that online learners still prefer frequent communication and interaction with teachers/tutors. There appears to be much demand for pedagogical support such as that available in the traditional classroom settings. Comments from participants in this study suggest that many online learners have broad knowledge and understanding about interactive online materials. They have explored other materials on the world wide web and have experienced the capacities for

interactiveness and virtual reality through technology. Online learners have high expectations of online materials. They also expect their teachers/tutors to have expertise in and knowledge of online systems so as to provide better services to learners.

The key issues for RTOs to consider include:

- specific professional development for teachers/tutors who are involved in online delivery;
- allocation of dedicated staff to support online learners so that they are able to provide rapid response to enquiries;
- establishment of guidelines and directions for online learners and teachers/tutors; and
- establishment of the roles and responsibilities of learners as well as teachers/tutors.

The key issue of the national governing body such as ANTA is to set minimum standards for online delivery to ensure any specific groups of online VET learners are not disadvantaged.

Acknowledgments

The authors acknowledge the financial support provided by NCVET for the completion of the study reported in this paper. The support of VET online learners and staff who contributed to this study is gratefully appreciated.

References

Australian National Training Authority (1996) National Flexible Delivery Taskforce Final Report. Brisbane: Australian National Training Authority.

Baron J, Thiele D and Hintz E (1995) Following the yellow brick road. Adelaide: National Centre for Vocational Education Research.

Booker D (2000) Getting to grips with online delivery. Adelaide: National Centre for Vocational Education Research.

Boote J (1998) Learning to learn in vocational education and training: are students and teachers ready for it? Australian and New Zealand Journal of Vocational Education Research, vol 6, no 2, pp 59-86.

Brennan R (2000) All that glitters is not gold: online delivery of education and training. Adelaide: National Centre for Vocational Education Research.

Brookfield S (1984) Self-directed adult learning: a critical paradigm. Australian Education Quarterly, vol 35, no 2, pp 59-71.

Bruce D (1998). Building social capital and community learning networks in community internet access centres. Learning Communities, Regional Sustainability and the Learning Society.

- Candy P (1991) *Self-direction for lifelong learning*. San Francisco: Jossey-Bass.
- Carroll T and McNickle C (2000) *Online student services report*. Canberra: Canberra Institute of Technology.
- Cashion J (2000) *Research in on-line education*. Moving On-line Conference, Gold Coast, Southern Cross University.
- Choy S and Hill D (2000) *Managing a case study approach in VET research to address the funding agency's criteria*. Third National Conference of AVETRA, Canberra, National Centre for Vocational Education Research.
- Cochrane C (2000) *The reflections of a distance learner 1977-1997*. *Open Learning*, vol 15, no 1, pp 17-34.
- Cornu P L (2000) *Using online technology in a flexible learning centre*. Moving Online Conference, Gold Coast, Southern Cross University.
- Doherty M (2000) *Internet gap risk to quality of education*. Canberra Sunday Times, Canberra, p 17.
- Gee L (2000) *Log on to learn*. *Impulse - Inflight*, November-December, pp 20-22.
- George R (1995) *Flexible delivery: the new paradigm in higher education*. Access through open learning '95, Ballina, Southern Cross University.
- Harper B, Hedberg J, Bennet S and Lockyer L (2000) *The online experience: a review of the state of Australian online education and training practices*. Adelaide, National Centre for Vocational Education Research, p 40.
- James T (1998) *Literature review regarding student withdrawal and completion*. Sydney, OTEN.
- Killen R (1994) *Differences between students' and lecturers' perceptions of factors influencing students' academic success at university*. *Higher Education Research and Development*, vol 13, no 2, pp 199-211.
- LeCornu P (2000) *Using online technology in a flexible learning centre*. Moving Online Conference, Gold Coast, Southern Cross University.
- Low D, Drake V and Lynam P (2000) *Flexible initiatives in physics at ADFA*. Moving Online Conference, Grand Mercure, Gold Coast, Southern Cross University.
- McKavanagh C (1999) *Educational frameworks for the development and evaluation of web-based learning*. *Australian Vocational Education Review*, vol 6, no 1.
- McNickle C (1999a) *Flexible delivery: induction strategies and support for learner success*. Canberra: Canberra Institute of Technology, p 90.

McNickle C (1999b) Flexible delivery: induction strategies and support for learner success. What does the literature say? Canberra, Canberra Institute of Technology, p 52.

Mildon F (2000). Successful delivery of web based e-learning. Networking 2000, online.

Misko J (1999) Different modes of delivery - student outcomes and students' perspectives. Melbourne: AVETRA.

Misko J (2000) The effects of different modes of delivery: student outcomes and evaluations. Adelaide: National Centre for Vocational Education Research.

Mitchell J and Bluer R (1997) A planning model for innovation: new learning technologies. Melbourne: OTFE.

O'Connor P B (2000) E-learning and students with disabilities: from outer edge to leading edge. Networking 2000, online.

Peoples K (1999) Online learning: seven best practice principles. The Australian TAFE Teacher, vol 33, no 2, pp 10-11.

Pittman L (2000) Keeping quality in the picture. Campus Review, March 1-7, p 12.

Policy T (2000) Quality on the line benchmarks for success in internet-based distance education. Washington: National Education Society and Blackboard.

Postle G and Sturman A (2000) Models of learning as a factor in online education: an Australian case study. Society for Research in Higher Education Conference, Stirling, UK.

Robson R (1999). WWW-based course-support systems: the first generation. International Journal of Educational Telecommunications, vol 5, no 4, pp 271-282.

Salmon G (1998) Student induction and study preparation online. Telematics in Education Seminar, Joensuu, Finland.

Salmon G (2000) E-moderating the key to teaching and learning online. London: Kogan Page.

Scott W (2000) Cyber learning. Australian Training Review, October-December, no 36, p 9.

Smith P (2000) Flexible delivery and apprentice training: preferences, problems and challenges. Journal of Vocational Education and Training, vol 52, no 3, pp 483-503.

Stavaren L V, Beverley S and Bloch B (1999) Student support in flexible delivery. Sydney, New South Wales: Vocational Education and Assessment Centre.

Sturgill A, Martin W and Gay G (1999) Surviving technology: a study of student use of computer-mediated communication to support technology education. *International Journal of Educational Telecommunications*, vol 5, no 3, pp 239-259.

Warner D, Christie G and Choy S (1998) The readiness of the VET sector for flexible delivery including on-line learning. Brisbane: EdNa-VET Working Group, Australian National Training Authority.

Contact details

Sarojini Choy

Australian National Training Authority

PO Box 3120

Brisbane, Queensland 4001

Email: ChoyS@anta.gov.au