Open and Flexible TVET in Commonwealth Pacific Countries

Terry Neal
June 2011

Published by Open Polytechnic of New Zealand, June 2011

Contents

Acknowledgements ii
Glossary iii
Executive summary 1
Introduction 7
Research methodology 7
Section One: What is TVET and why is it important in the Pacific? 9
What is TVET? 9
Models of TVET 10
Why is TVET important? 11
Why is TVET important in the Pacific? 12
Section Two: What is open and flexible TVET and how does it add value? 14
What is open and flexible TVET? 14
Elements of an effective TVET system 16
Where open and flexible TVET adds value 18
Section Three: Pacific open and flexible TVET activity 19
Pan-Pacific open and flexible TVET activity 19
Government policies on open and flexible TVET 23
Relevant themes from implementation of all TVET 31
Current implementation of open and flexible TVET 32
Section Four: Possible roles for COL 37
1. Pacific relevant 37
2. Leadership and planning 38
3. Resource-based learning 45
4. ICT infrastructure and online learning 47
5. Capacity building 51
6. Work-based training 53
7. Status of open and flexible TVET 53
Conclusion 54
References 55
Appendix One: Interview guide 61
Appendix Two: Summary of TVET by country 62

Acknowledgements

This report would not have been possible without the support of the following people:

Jenny Neale, who conducted the phone interviews, and summarised the information from the questionnaires and phone interviews

Jo O'Regan and Kaye Farmer who contacted possible interviewees and persevered in identifying the right people for us to talk to

Individuals from Secretariat of the Pacific Community, Pacific Association of Technical and Vocational Education and Training, Fiji, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu who agreed to interviews and to complete our questionnaire, so that we could get a better understanding of the local situation.

Jenny Williams, who assisted scope the project, put us in touch with her Pacific network, and reviewed the draft report, correcting some errors and adding wise insights

The editor, Jonquil Brooks, who polished the draft report.

Alison Mead-Richardson, Commonwealth of Learning, who initiated the work, was supportive and trusting throughout the project, and gave valuable clarification and feedback along the way.

Glossary

AusAID	Australian Agency for International Development
CAP	Communication Action Plan
COL	Commonwealth of Learning
DFID	Department for International Development (UK)
DFL	Distance and flexible learning
FIT	Fiji Institute of Technology
ICT	Information and communication technology
KANGO	Kiribati Association of Non-Government Organisations
KIT	Kiribati Institute of Technology
LORN	Learning Object Repository Network
NGO	Non-government organisation
NUSIOT	National University of Samoa – Institute of Technology
NZAID	NZ Agency for International Development
ODL	Open and distance learning
OLPC	One Laptop Per Child
PacRICS	Satellite internet service for rural and remote areas of the Pacific
PATVET	Pacific Association of Technical and Vocational Education and Training
PFNet	People First Network
PIIP	Pacific Islands Information and Communications Technologies Policy and Strategic Plan
PRIDE	Pacific Regional Initiatives for the Delivery of Basic Education
SATVETI	Samoan Association for Technical and Vocational Education Training Institutes
SIARTC	Solomon Islands Association of Rural Training Centres
SICHE	Solomon Islands College of Higher Education
SQA	Samoa Qualifications Authority
SUNGO	Samoa Umbrella for Non-Governmental Organisations
TAFE	Technical and further education
TPAF	Training and Productive Authority of Fiji
TVET	Technical-vocational education and training
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USP	University of the South Pacific
VC	Vocational centres
VET	Vocational education and training
VIT	Vanuatu Institute of Technology

Executive summary

This report examines the current state of open and flexible technical-vocational education and training (TVET) in nine Pacific Commonwealth countries: Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. The Commonwealth of Learning (COL) has commissioned the Open Polytechnic to complete this report to assist COL understand where best to target its efforts in these countries.

The report defines open and flexible TVET as worthwhile learning offered in ways that give learners more choice of how they acquire knowledge and skills relevant for current employment and citizenship.

Globally, TVET is increasingly important in times of rapid economic, social and technological change; workers need more skills to participate in the knowledge economy and the skills they do have become outdated more quickly. In developing countries, as more people achieve competence in basic education, TVET offers the skills they need to gain employment, work and live in their communities, and adapt to ongoing changes. TVET is important in the Pacific not only for these reasons, but also because of its dependence on the informal economy, pockets of skills shortages in the formal economy, a trend for more skilled workers (including TVET) to remain overseas after study or to emigrate, an increase in female-led households due to growing health threats, and the need to provide a viable employment pathway for the growing numbers of disengaged youth.

Open and flexible TVET adds value to a TVET system in a number of ways. It can:

- increase choice for learners and employers about when, where and how much learners learn
- increase employer involvement through supporting work-based and on-the-job training with just-in-time, come-to-the-learner theoretical modules
- increase consistency, assure quality, and decrease dependence on availability of a trained teacher or subject expert through use of well-designed materials in which theory and pedagogy is embedded and there is online automated feedback
- increase access for those limited by geography or multiple demands on their time
- decrease dependence on tools and equipment through use of video demonstrations and simulations
- potentially increase efficiency through resource-based learning if the numbers are large enough.

Pan-Pacific activity

There are a number of regional policies related to open and flexible TVET, including:

- The Pacific Association of Technical and Vocational Education and Training (PATVET) recognises the need to build awareness of the potential of information and communication technology (ICT) and open and distance learning (ODL) to support TVET in remote locations, communicating existing good practice across their network, and finding potential partners to help develop ICT and ODL solutions.
- *The Pacific Plan for Strengthening Regional Cooperation and Integration* (Pacific Islands Forum Secretariat, 2007a) includes in its steps for immediate implementation a digital strategy that recognises the potential of an improved ICT infrastructure to support distance learning, including a regional study to understand needs and possible mechanisms.
- The *Skilling the Pacific Study* (Johanson, Brady, Gorham, & Voigt-Graf, 2008) proposed a project working with PATVET to extend the present Fiji Institute of Technology's (FIT) franchise programmes across the Pacific.

The Pacific Education Development Framework (Pacific Islands Forum Secretariat, 2009b) stresses the importance of TVET and of ODL and recognises the potential for ICT and ODL to support innovative teacher training to address the present teacher capability gap and provide lifelong learning for teachers.
The Pacific Regional Initiatives for the Delivery of Basic Education (PRIDE) project identified that ICT offers potential to add value to TVET in Pacific secondary schools, but will require new models.

However, there appears to be little activity in response to these policies. The Secretariat of the Pacific Community's (SPC) regional assessment of ODL TVET is underway and predicted to take several years; a regional ICT infrastructure project is continuing with support from the Secretariat of the Pacific Community; the One Laptop Per Pacific Child (OLPPC) project is into its fourth year; and a five-year project on rural TVET in the Solomon Islands is underway.

Government policies on open and flexible TVET
Eight of the nine countries (Kiribati being the exception), identified TVET as an important part of their most recent education strategies. All countries included open or flexible education in some way, with most mentioning ICT as a way to support this.

Kiribati, Tuvalu, Nauru and Fiji do not have clear open and flexible TVET policies, even though Fiji has an established distance education infrastructure through which it supports other Pacific countries. The plans of Tonga and Samoa included general open and flexible TVET elements. Vanuatu's plan did not include open and flexible TVET. However, as part of the PRIDE project, a clear, thought-through ODL policy had been developed at a similar time. Papua New Guinea and Solomon Islands have more detailed open and flexible TVET plans. However, Papua New Guinea has the challenge of how to move a traditional print-based distance provider to become the flexible innovator that the system needs and the plan outlined. Solomon Islands seems better placed by being able to build on three factors: earlier innovative projects using ICT to deliver distance learning; some relatively new coordinating mechanisms; and consultancy in 2009 from which a detailed and informed distance and flexible learning policy was developed.

Activities
Distance learning methods, including the use of ICT, appear to be frequently mentioned in policies and workshops but not yet consistently implemented. There are, however, some examples of open and flexible TVET.

Several formal TVET institutions offer open and flexible options. The Fiji Institute of Technology offers two flexible options that allow learners to choose to begin study towards a trade qualification in their home location then move to complete it at the institute. The first option is within local secondary schools, the second is via distance learning with workshop practice and some face-to-face support. The institute, now part of the University of the South Pacific (USP), also offers distance courses in business, engineering mathematics, and applied sciences. Maritime Colleges offer advanced training from the Australian Maritime College via ODL. Kiribati Institute of Technology experimented with offering online qualifications from Australia but the connection costs were prohibitive. The institute also converted a face-to-face programme for supervisors to be delivered by distance to the 33 atolls of Kiribati.

Several secondary schools also offer formal open and flexible TVET; namely, a high-speed network connecting Samoan schools, with supporting hardware, online learning materials and teacher training. Tuvalu is using the secondary and primary school infrastructure to use local expertise to offer TVET locally.

Several informal initiatives of open and flexible TVET also exist. In the Solomon Islands, a community-based network began in 2001 and ran for at least six years but appears to have stopped. A second project supported by donor funding began in 2004, providing the ICT infrastructure as well as distance learning centres attached to schools. The project was encouraged to offer other services to the community. However, this model has also struggled to be sustainable and presently relies on government funding to continue.

Several TVET providers and government departments offer mobile training in which trainers go to the remote islands to offer training, rather than relying on potential learners to come to the main centres. These are short courses and supply does not tend to meet demand. They may use a train-the-trainer approach. Vanuatu Maritime College ensured appropriate equipment by taking a specially outfitted boat from island to island to offer a mobile two-week training programme for rural fishermen. In the Solomon Islands, Don Bosco offer community TVET via radio.

Another model is the use of resources to upskill teachers to be able to offer face-to-face training, which has proved successful in assisting subsistence farmers in Papua New Guinea develop technical, business and livelihood skills. COL-funded materials have also supported the delivery of supervisory, business, tourism, trades, and literacy and numeracy courses.

Recommendations for COL

All of the benefits offered by open and flexible TVET are relevant to the Pacific. However, a number of Pacific-specific challenges exist that will require Pacific-specific solutions. The report discusses challenges facing implementation of open and flexible TVET in the Pacific and suggests possible actions COL might take to progress this important area. These possible actions arise from suggestions by those interviewed, analysis of the literature and the existing situation, and the author's research and experience in open and flexible TVET.

1. **Be Pacific relevant**

   Firstly, COL needs to develop Pacific-relevant solutions that recognise and work with the range of countries, languages and cultures represented by the single term 'Pacific'. However, there is a real tension between valuing and respecting each nation, culture, and language, and being sustainable. Resource-based learning can increase efficiency and extend access but only if large enough numbers use the resources. COL needs to work with the open and flexible TVET expertise that already exists while adding its value of linking the Pacific to 'global ways of knowing and doing' (Puamau, 2005, p. 14). COL needs to seek the right balance between the two extremes of 'local' and global' in the work that it does.

2. **Leadership and planning**

   The review of policy documents indicates that policymakers across the region have identified social and economic goals to which open and flexible TVET can contribute, but have a low understanding of this contribution or how they might implement such a strategy. These Pacific countries face the same challenges as every other country in seeking to implement the change; that is, understanding why open and flexible TVET is important, building buy-in to a shared vision, developing new ways of working, building new skills for teachers and learners, and keeping up with ever-changing technology. However, they also face unique challenges: defining appropriateness for each Pacific culture, working within hundreds of languages and low numbers of people spread across thousands of islands with large expanses of water in between, and having severely limited resources to invest.

   A possible role for COL is to work with PATVET and relevant donor agencies to build a shared vision for open and flexible TVET across the region. This will not be a quick activity but lessons

from Australia and New Zealand show that collaboration can add efficiency and effectiveness in changing from traditional, to resource-based, teaching and learning, particularly when using ICT.

Specifically, COL could facilitate conversations between institution decision-makers, government decision-makers, open and flexible TVET experts with the range of necessary expertise, and donor agencies. The purpose of these conversations would be to build understanding of the potential and challenges of open and flexible TVET and agree on:

- the links between open and flexible TVET and outcomes stated in the region's and countries' education, economic, labour, social, health and digital strategies
- the priorities for action
- a model for joint action; for example, centrally managed single network, single network with autonomous members, or network of networks
- who will lead the action
- who will fund the action
- length of commitment.

COL would have a number of important roles to play in the regional initiative, including:

a) initially driving the initiative and managing relationships across all the key stakeholders
b) part-funding the initiative
c) providing external experts, as appropriate, to inform the initial conversations, and also working with local experts who recognise the unique features of each island nation, in order to develop and implement a regional strategy.

3. Resource-based learning

Well designed learning resources in open and flexible TVET can increase consistency and assure quality, can cover gaps in teacher knowledge, and can increase access by decreasing or removing the need for face-to-face training and thus taking learning to where learners are and supporting part-time as well as full-time options.

However, resource-based learning risks being less responsive in a changing marketplace because of the lead time to develop materials. Also, the cost of designing and developing learning materials can only be recouped if the materials are used by enough learners, which is a greater challenge in the Pacific. Use of open education resources or other existing material can reduce the cost but makes it more difficult to respond to changing industry demands and meet national, community, or language-specific needs.

COL has several possible roles in developing resources:

a) Supporting decentralised materials development, building upon the work of existing multimedia centres, and COL's WikiEducator project, through training trainers and web hosting of locally created materials.
b) Supporting central materials development, by developing further open education resources for targeted curricula, especially as the Pacific Qualifications Framework develops.
c) Building capacity in open educational practices so that open education resources can better contribute to greater efficiency in the region. The proposed model is to use a blend of face-to-face and distance learning pedagogies to build capacity in licensing arrangements, finding and using existing materials, assessing an organisation's desired

and present position on the Open Educational Practice Maturity Matrix, facilitating the necessary changes within organisations.

4. ICT infrastructure and online learning

Pacific countries are very aware of the potential for ICT to tackle the education challenges they jointly face. There is also a focus on working together to be most efficient and increase the chances of succeeding. However, it has proven difficult to successfully implement the promise of ICT. Research shows these implementation challenges are not only technological and financial, but also the result of the need to change systems and processes, and build new skills for staff and students. Individual preferences and cultural and family factors also influence whether face-to-face, online or correspondence delivery is more effective.

However, Pacific countries risk falling further and further behind more developed countries in digital literacy and the related vocational skills, so if they embrace technology where possible they will minimise the difference. However, as they do this, they also risk losing touch with each country's cultural knowledge.

Solutions need to recognise the diverse range of ICT access and use non-ICT solutions to cater for the urgent open and flexible TVET needs of remote learners, while implementing ICT solutions to build a base from which the Pacific can be well-positioned to benefit from technology in the future. COL has several possible roles:

a) Building capacity in individuals to develop Pacific-appropriate ways of working and content that reflects the essence of each country while incorporating the best that is happening globally.
b) Hosting an open source learning management system that smaller institutions and non-government organisations could use to support basic online learning, including a local administrator to maintain the site and offer some helpdesk support.
c) Piloting more sophisticated use of technology in the Pacific (such as, use of radio and mobile technologies, simulations, automated assessment, alternative assessment using video and audio) and sharing the stories following the pilots.

5. Capacity building

Respondents agreed that the nine countries lack suitably qualified TVET instructors, and some noted the potential for open and flexible learning to fill skill gaps in other education sectors. COL has several possible roles:

a) Funding the design, development, piloting and evaluation of an open and flexible learning experience that develops teachers' capacity in TVET, including open and flexible approaches. The programme should use COL's existing resources where possible and provide both ICT-based and ICT-independent modules.
b) Building local expertise in instructional design for ODL through a mentoring model, building on learning from COL's earlier model used to develop the Pacific open education resources.
c) Maximising Pacific expertise and culturally relevant solutions by using locals where possible and external experts who respect the Pacific and can work closely with local people.
d) Piloting online mentoring and communities of practice to build capacity building.
e) Working with PATVET to further develop their website, with links to COL-hosted materials, and improve knowledge sharing.

f) Building capacity in using various online tools to enable Pacific practitioners to build their personal learning networks and better connect to the world for their ongoing professional development.

6. Work-based training

More flexible work-based delivery options offer the potential for more relevant TVET in which employers are more involved. However, in the Pacific this may be a challenge outside the urban areas. Remote areas, often the areas in need of innovative upskilling in TVET, may lack the economic infrastructure to provide jobs, or offer the full range of work opportunities necessary to achieve the full qualification. They also may not be keeping up with recent advances in their industry.

A possible role for COL could be to pilot industry training with a selected industry in remote areas in need of training, including evaluation and sharing of good practice.

7. Status of open and flexible TVET

Both TVET and ODL have traditionally been perceived in the Pacific as second-rate choices for learners. Such perceptions determine choices, and open and flexible TVET will only play an important part in workforce development in the Pacific if industry, communities, parents and learners believe that ODL approaches are valid and valuable.

A possible role for COL would be to work with PATVET, who have a goal to promote career opportunities for TVET, to develop marketing materials targeting schools, parents, communities and industry with a user's guide to assist PATVET members customise and use them effectively. These marketing materials can also include stories of how ODL opportunities are increasingly being used globally and how they have transformed individuals' lives.

Conclusion

In considering where COL might invest its limited resources, a number of competing priorities emerged:

- community, national or regional
- leadership and planning or practitioners
- people or learning materials
- ICT or print or other technologies
- capacity building or awareness raising or promotion
- TVET providers or industry or learners or communities
- small and instantly achievable or large and transformative system-wide.

These tensions exist because they are all important. Open and flexible TVET sits within complex education and labour systems, populated by a range of people with differing priorities, experiences and perspectives. As a result, this report does not prioritise the possible roles proposed, but puts them all forward within a context that aims to help COL and other readers understand how each action might add value. The hope is that COL and others will be inspired to act and together tackle the challenging, important and urgent task of better equipping the present and future workforce of the Pacific.

Introduction

This report examines the current state of open and flexible technical-vocational education and training (TVET) in selected Pacific Commonwealth countries. The Commonwealth of Learning (COL) has commissioned the Open Polytechnic to complete this report to assist COL understand where best to target its efforts in these countries. The nine countries of focus are:

- Fiji
- Kiribati
- Nauru
- Papua New Guinea
- Samoa
- Solomon Islands
- Tonga
- Tuvalu
- Vanuatu.

Given COL's focus on encouraging the development and sharing of open and distance learning (ODL) knowledge, resources and technologies, the report will primarily seek to understand open and flexible TVET. The report draws on examples of effective activities in Australia and New Zealand, the other two Pacific Commonwealth countries. However, the focus is on understanding those countries that COL anticipates actively supporting in the future.

Research methodology

The project consisted of three phases:

1. **Literature review**
   The literature review investigated publicly available information related to TVET in the Pacific and peer-reviewed work regarding the open and flexible TVET sector. For each country the main reports accessed were the 2007 technical-vocational skills development reports by the Asian Development Bank and countries' education strategies. The team assessed gaps in the available information before developing the interview questionnaire (Appendix One).

2. **Interviews or surveys with TVET representatives**
   The team sought to interview at least one TVET representative from each Pacific country.

   To identify possible interviewees, the team asked COL for suggestions of whom to approach, and also asked a former COL Pacific project manager who had worked extensively with COL in the Pacific. The team also looked on the Pacific Association of TVET (PATVET) and PRIDE websites for possible contacts. Suggested country representatives were emailed, regarding the scope of the project, with a copy of the interview questions, and asked to recommend the best person to represent their country. The team used a mixture of email and phone calls to follow up with each contact and their suggested contacts until each country agreed on the best person to provide information. These nine people were then given the opportunity to answer the interview questions by phone or by email, and were followed up by email and phone to request replies.

   Within the two months available for the information gathering part of the project, the team was able to gather information from Fiji, Papua New Guinea, Nauru, Solomon Islands, Samoa, Tonga, Tuvalu, and Vanuatu, as well as PATVET and the former COL Pacific project manager. Most people opted to reply by email. The advantage was that we gained some information. However, it meant

the team could not clarify the focus on open and flexible TVET or ask questions to gain a wider perspective, as was possible in telephone interviews.

3. Report writing

The team then prepared the final report based on the findings from the country reports, peer reviewed literature, and interviews and surveys.

Section One: What is TVET and why is it important in the Pacific?

What is TVET?

TVET is concerned with the acquisition of knowledge and skills for the world of work. UNESCO and ILO (2002, p.7) conclude that TVET is

> used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Technical and vocational education is further understood to be:
>
> a) an integral part of general education
> b) a means of preparing for occupational fields and for effective participation in the world of work
> c) an aspect of lifelong learning and a preparation for responsible citizenship
> d) an instrument for promoting environmentally sound sustainable development
> e) a method of facilitating poverty alleviation.

In a report focused on Pacific countries it is also important to consider Pacific cultural understandings of the term *education*, and similarities and differences across Pacific nations.

One could argue that the Tongan researcher Konai Helu-Thaman's definition of the term *education* is closer to the concept of TVET than more academic studies (cited in Koloto, Katoanga, & Tatila, 2006, p. 21). Helu-Thaman defined education as 'worthwhile learning', breaking it down into three interlinked concepts:

- *ako* (learning and searching) — also used to mean teaching; when schools were introduced in Tonga, the term *faiako* (making learning) was used to refer to the school teacher
- '*ilo* (knowledge) — denotes knowing, knowledge, or information; and implies learning or searching
- *poto* (wisdom) — before the introduction of schooling, simply meant knowing what to do and doing it well. In today's world, a person is considered *poto* if they use 'ilo gained through *ako* for the benefit of one's group. Although the meaning of *poto* has changed, the underlying value for learning remains: it is purposeful — one is considered a *poto* if they use the '*ilo* to become useful to their family and country.

Helu-Thaman also recognised both formal education (organised, institutionalised learning such as schools, colleges, and universities) and non-formal education (organised but not institutionalised learning). Samoan, Tuvalu and indigenous Fijian cultures also view education as something the learner acquires that is of value and uses in a beneficial way, although the benefits may not be economic (Koloto et al., 2006).

This 'worthwhile learning' is largely informal, contextualised, task-specific, practical, interactive, interpersonal, and lifelong. To survive and develop, individuals and their communities need traditional basic education, including the lifelong learning of essential values, knowledge, life skills,

and cultural literacy (Taufe'ulungaki, cited in Koloto et al., 2006). Again, this resonates with TVET approaches.

This report, therefore, defines TVET as worthwhile learning through which learners acquire knowledge and skills for employment and citizenship.

Models of TVET

TVET comprises three main models:

1. Technical or vocational subjects offered at junior or secondary school level through the formal education system.
2. Technical or vocational qualifications awarded through post-secondary training institutes and vocational schools.
3. Informal training, such as non-accredited short courses and traditional apprenticeship training often provided on the basis of family ties (Hartl, 2009).

A worldwide statistical analysis of formal TVET programmes (UNESCO, 2006) showed that 84% of the countries for whom data was available offered TVET at upper secondary, 50% at post-secondary non-tertiary, and 70% at tertiary. The same study showed a correlation between gross enrolment ratio in secondary schools and percentage in upper secondary TVET. However, the nine Pacific countries that are the focus of this report tended to be countries for which there was little or no data.

Many developing countries are focusing on the first model because their number of learners attending secondary schools increases and they can use the existing infrastructure. However, this model has a number of risks. For example, the TVET may be reduced to theory only because schools cannot afford, or do not prioritise, the necessary equipment, and the vocational subjects may be devalued next to the academic options also available. Some research suggests that specialised vocational, rather than vocationalised, schools are more effective in helping students find employment (Joo, 2011).

Public specialist vocational training centres (the second model) tend to work well if they have close links to industry, which may also be helping fund them. However, they tend to be less accessible, financially and physically, than secondary schools. They also tend to not meet the needs of the informal deregistered industries well. In developing countries, the institutes struggle to maintain industry-relevant equipment (DFID, 2007).

Traditional apprenticeships and informal training approaches (the third model) vary considerably. This training tends to be most relevant to the world of work and more accessible financially and physically. Trainees tend to be more mature, more motivated and can build up skills gradually, including soft skills. However, the master craftspersons may not be up-to-date with recent developments and often lack teaching skills so the quality varies considerably and skills may not be portable. It has proved difficult to formalise the informal sector and appears more successful to informalise the formal sector (DFID, 2007).

Three different TVET models make decision-making more complex than for other levels of education, even before tackling the challenge of being open and flexible.

A further level of complexity is the involvement of public, private and non-governmental organisations. Private provision reduces the demand on public funding and can be of high quality. However, it is limited to those who can afford and access it, and is variable in quality. Non-

governmental organisations and community programmes reach those who may not otherwise be able to participate and can trial new approaches, but tend to be hard to scale up or transfer to other contexts in which staff may not be so committed (DFID, 2007).

The economy of the country in which the TVET skills are being developed has a major influence upon the likelihood of students being able to get jobs and makes it more difficult to assess the relative merits of different TVET delivery models (DFID, 2007).

Why is TVET important?

TVET is increasingly important in times of rapid economic, social and technological change. Workers need more skills to participate in the knowledge economy and the skills they have become outdated more quickly. There is a need for more learning and lifelong learning and TVET skills fill the gap (UNESCO and ILO, 2002).

Johanson, Brady, Gorham, & Voigt-Graf (2008, page 2) give seven reasons why TVET is important from an economic perspective:

- Productivity – at individual, enterprise and country level, whether waged or self-employed.
- Skills and poverty reduction – greater skills 'are essential for the poor to access decent work or add value to existing subsistence employment', and help make informal economic activities more sustainable e.g. by increasing awareness of impact on the environment.
- Skills-physical capital complementarities – greater human productivity raises the rate of return on investment in physical infrastructure so it becomes worth making the investment. This then enables economic growth.
- Technological and structural change – 'acceleration of technological change requires higher skilled workers' and workers with these skills enable enterprises to then respond to further technological changes.
- Changes in work organisation – a move from assembly lines with each individual needing only minimal skills and experience for their one role to 'self-managed work teams, multiskilling, job rotation, and cross training with devolution of decision-making'.
- Trade openness, competition and foreign direct investment – a skilled workforce encourages foreign investment. 'Thus the skill level and quality of the workforce will increasingly provide the cutting edge for successful international competition'.
- Effect of skills shortages on productivity and wages –an enterprise is less productive if it is difficult to fill vacancies or needs to use an unskilled worker, and it is more likely to lose skilled workers.

However, a focus in the 1980s on basic, especially primary, education resulted in a decreased focus on TVET by donor agencies, although not necessarily by policymakers or the private sector. The UN Millennium Development Goals exemplify this emphasis with the exclusion of TVET (DFID, 2007). This in turn led to general neglect of TVET in many countries, and to short-term uncoordinated training solutions that are well-intentioned but do not produce the desired results (Hartl, 2009).

Since the early 2000s, TVET is becoming a priority again as policymakers have rethought what people need in order to be able to work and live in the twenty-first century. As more people achieve basic education, they then need to achieve employment skills beyond basic literacy and numeracy to be able to work and live in their communities, as well as to adapt to ongoing changes. Also, TVET is increasingly recognised as a key to a nation's success in the global economy. Countries are developing TVET plans but they still have limited resources. The challenge is to develop new affordable TVET solutions to achieve the desired outcomes (UNESCO, 2008).

Why is TVET important in the Pacific?

The Asian Development Bank funded a review of the TVET status of 13 Pacific countries, including the nine countries that are the focus of this report. The six publicly available individual country reports (Boeha, Brady, Gorham, & Johanson, 2007; Brady, Ereata, & Gorham, 2007; Brady, Gorham, Johanson, & Naisele, 2007; Brady, Gorham, Johanson, & Vira, 2007; Grundler, 2007; and Lene, 2007) and the overall Pacific report (Johanson et al., 2008) have provided valuable information for this study.

Johanson et al. (2008) classify the Pacific countries into three categories and describe their TVET status within those categories:

- land-rich, low income countries (Papua New Guinea, Solomon Islands and Vanuatu) which have low social and economic indices but positive agricultural potential
- small, vulnerable island states (Kiribati, Nauru, Tuvalu) which face severe economic constraints, and have few economic prospects and issues of sustainability
- 'advanced' island states (Fiji, Samoa, Tonga) which have relatively good prospects from tourism, remittances from overseas and emigration.

Generally, the nine Pacific countries have limited jobs available in the formal economy and those entering the workforce are more likely to find jobs in the informal economy. This is

> largely limited to the processing and merchandising of primary produce; providing services such as carpentry and mechanical repair, transport and small scale vending; and producing and selling handicraft and sewn materials. Skills gaps occur in all these activities. (Johanson et al., 2008. P. 19)

The opportunities are primarily small-scale fishing and primary production in the vulnerable island states, and larger-scale agricultural production in the land-rich states. Also, there are pockets of skills shortages in the formal economy. In all nine countries, TVET is essential for supplying these skill gaps. At present, the system is not producing enough graduates for the formal and informal sectors, and those they are producing may not have the necessary skills when they graduate. Industry has adjusted by employing lesser-skilled staff and providing internal training. Two other factors also contribute to the skills shortages: emigration, and sector-specific economic growth such as mining (Papua New Guinea), and tourism, especially hospitality and construction (Fiji, Samoa, Tonga, and Vanuatu). Emigration exacerbates the skills shortages because skilled workers can more easily find jobs elsewhere, but the remittances as a result of the same emigration support the economy (Johanson et al., 2008).

The PATVET 2007-2011 Strategic Plan (PATVET, 2007) identifies key areas which make it important to strengthen TVET delivery in the Pacific. Firstly, the changing global economic environment has created a 'brawn drain' (page 4) drain. Historically, remote Pacific islands have experienced a brain drain as those who seek formal academic education have needed to move to study and not returned. Now the value of vocational skills internationally means this is happening for TVET learners.

Secondly, growing health threats (HIV in Papua New Guinea and non-communicable diseases across the region) are leading to an increase in female-headed households and the resulting changes to household economies. A TVET solution

> feeds the household economy by reducing community reliance on a cash economy for essential works, decreasing the unemployment levels via

> entrepreneurialism, and increasing potential levels of remittance (a major contributor to household economies in the Pacific) by providing emigrants with in-demand vocational skills. (PATVET, 2007, p. 4)

Thirdly, TVET offers more hope than higher education for Pacific youth who have disengaged from learning, often because of lack of local opportunities for learning linked to employment.

> Unfortunately, TVET infrastructure does not have the capacity to manage the host of social problems, let alone the sheer volume, of its entrants. NGOs, churches and private providers share the responsibility and the burden of remedial education for school drop-outs and push-outs with the government, as they enter the TVET system. In comparison to the secure and well-funded academic education being provided at primary, secondary and university level, TVET providers offer to transform the lives of **all** Pacific youth by offering them an entry to employment. (p. 5).

The strategy concludes on a positive note that TVET has moved to becoming a priority for the Pacific and that government ministers recognise the need to work regionally to design and implement formal and informal TVET solutions to meet the specific challenges the Pacific faces.

Section Two: What is open and flexible TVET and how does it add value?

What is open and flexible TVET?

Any attempt to define the terms *open* and *flexible* can lead to long and interesting discussions. COL (www.col.org/resources/Pages/default.aspx) define the two terms as below:

> Open education – policies and practices that permit entry to learning with no or minimum barriers with respect to age, gender, or time constraints and with recognition of prior learning. These policies need not be part of a distance education system but are complementary to it.
>
> Flexible education – the provision of learning opportunities that can be accessed at any place and time. Flexible learning relates more to the scheduling of activities than to any particular delivery mode. (Commonwealth of Learning, n.d.)

Another understanding of flexible education is *education approaches that increase choice for learners* (that is, choice of who they learn with, as well as where, when, and what they learn). Figure 1 illustrates many of the options within the term *flexible education*. The options that give more choice of 'where' are the distance education subset. The green text indicates e-learning because ICT enables those flexible options. Online learning is the subset of e-learning that uses the internet to connect learners to resources, the teacher or one another. The term *education* is used to recognise the role of teacher and learner in the process rather than imply a focus on the role of learner, as the term *learning* may.

In the TVET literature, the term *flexible* is primarily used to describe *responsiveness to the changing needs of industry*. Many of the examples in Figure 1 are also relevant through making learning opportunities more accessible for learners and designing curricula to give more choices. This flexibility requires tertiary providers to understand industry needs and modify their curricula and their delivery approaches. Two examples of this type of flexibility are short modular courses in which one part can be more easily changed without affecting the rest of the programme, and using work-based assessment to benefit from changes within the workplace, such as updating equipment or technology.

We can therefore define open and flexible TVET as worthwhile learning offered in ways that give learners more choice of how they acquire knowledge and skills relevant for current employment and citizenship.

ODL institutions have offered open and flexible TVET for decades. For example, in 1946, the Technical Correspondence School (later to become the Open Polytechnic) was established to provide resettlement training for returned servicemen and women following World War II. It built upon distance learning courses that New Zealand defence forces had studied while overseas. Offering national distance learning meant that all apprentices, wherever they were in the country, could study technical courses and sit examinations (Abbott, 2000).

Open and flexible TVET began in Australia at the beginning of the twentieth century. In 1910, the first correspondence course was offered in Sydney to train health inspectors during a bubonic plague outbreak. A 1913 report for South Australia recommended delivery of technical correspondence courses to meet growing skills demands (Goozee, 2001). As in New Zealand, the provision of distance learning increased markedly during and after the Second World War with expansion in New

South Wales, and the establishment of a new Technical Correspondence School in Brisbane. See
www.oten.edu.au/oten/core/showpage.htm?pg=flwhohistory
www.tafe.qld.gov.au/about_tafe/overview/history.html

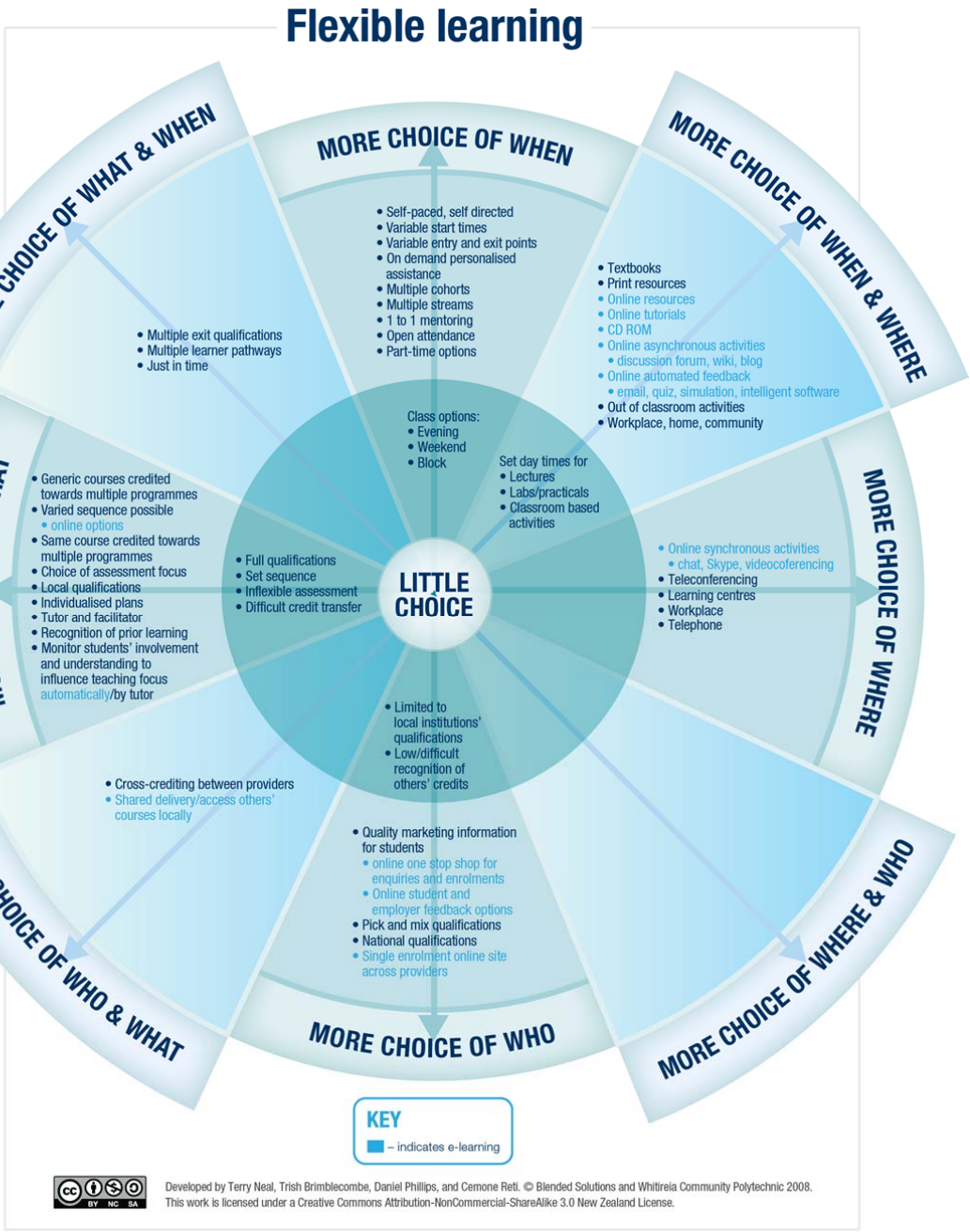

Figure 1: Flexible learning

In 2000, the Australian state technical and further education (TAFE) systems agreed to collaborate to systematically and efficiently embrace the potential of technology to offer flexible TAFE more widely across the country. They saw this as meeting the skills development needs of the Australian knowledge economy. The Australian Flexible Learning Framework has had three phases:

1. Build awareness of the potential of e-learning and build the capacity of the TAFE system to offer quality e-learning (2000-2004).
2. Build demand for e-learning (2005-2007).
3. Embed the change (2008-2011).
   (Flexible Learning Advisory Group, 2007)

Various ICT tools have become available, each supporting different potential activities, each with associated benefits for education. To meet the needs of their diverse learners, educators now need skills in selecting a range of activities from the online and face-to-face options, whilst also considering the specific learning objectives in their programmes. The options continue to increase and it is a challenge for involved educators to keep up with what tools are available, as well as understand how they might add value to learning experiences. Many are yet to actively participate. To provide the wide range of skills necessary to respond to these ICT opportunities, tertiary institutions are creating specialist roles in learning design, multimedia development, learning management system administration and project management. ICT offers some benefits to all learning, such as:

- access to a wealth of online resources, including multimedia resources that can explain some concepts better than text or a person
- automated feedback that allows students to learn through as much practice as they determine it takes for them to master something
- embedded upskilling in use of technology, within the learning experience, to better prepare all learners for work and citizenship.

However, other benefits from ICT are different if the starting point is classroom-based learning or ODL. For the former, using ICT offers increased flexibility, especially choice of when and where. For ODL, the benefits are increased connection to other learners and tutors, but this may decrease flexibility if activities are synchronous or rely on cohorts of students moving through together. As educators design blended approaches to try and get the best of both worlds, the boundaries are blurring between the two models.

Technology can improve learning and decrease costs, where the overall design considers how technology can add value in these ways and there are large enough numbers of learners (Twigg, 2005). In the Pacific, reducing costs through careful use of technology would require cross-country solutions.

Using ICT to enhance TVET relies on adequate infrastructure and ‘the cost of developing this infrastructure would inhibit its use in supporting programme delivery in many developing countries (and especially in rural areas) in the short term’ (DFID, 2007, p. 11). However, the same authors also note the rapid spread of mobile phones with internet access and low-cost computers. They conclude that the ‘new ICT systems may provide a valuable supplement for the theoretical aspects of the particular competency, but not for its hands-on implementation and assessment’(p. 11).

Elements of an effective TVET system

As discussed above, TVET systems are complex. They include TVET in the school sector, specialised vocational institutes and informal TVET. The learning can range from beginning training through to

long-term career development for the workforce. Responsibility for formal and informal TVET systems often sits across the education, labour, and social government agencies. Public, private or non-government organisations may offer TVET and may use one of a diverse range of delivery methods. The aim is to reliably produce work-ready graduates who can continue to learn in a changing environment. Generally, each option achieves part of that well but sacrifices other parts in doing so.

In discussing the strengths and weaknesses of the various TVET systems in the Pacific, Johanson et al. (2008) assess against the five criteria below. Analysing their comments, we can describe sub-elements for each criterion as being integral to an effective TVET system:

1. Economic relevance
    a) employer involvement
        i. apex governing organisations, with appropriate industry representation and influence
        ii. workplace attachments, on-the-job training
    b) evidence based decision-making, through information such as
        i. labour market information that link training with supply and demand
        ii. TVET graduate tracer studies which identify approaches that achieve formal or informal employment
    c) training system responsiveness
        i. work with industry to understand demand
        ii. delivery driven by demand e.g. up-to-date curricula, competency-based, short and long courses, modular, full-time and part-time
2. Quality
    a) defined occupational standards – focused on outputs i.e. competencies, not inputs i.e. courses
    b) clear and attainable objectives
    c) adequately prepared students on entry
    d) trained instructors
    e) appropriate training content with definition of associated learning outcomes
    f) availability of tools, equipment and supplies
    g) assessment of performance against training objectives and standards
    h) strong management of the training process
    i) continuous improvement systems
3. Accessibility
    a) raised status of TVET
    b) affordability
    c) wide coverage geographically
    d) gender equality
4. Organisational and management effectiveness
    a) recognition of the complexity and resulting challenges within TVET
    b) clear mandate, within and between government agencies
    c) coordinated approach
    d) adequate resources
    e) accountability
    f) informed decision-making
5. Finance and internal efficiency
    a) diversified revenue i.e. between public, private, donor and parent sources
    b) increased internal efficiency
    c) use of financial transfer mechanisms.

Where open and flexible TVET adds value

Within the above framework, open and flexible TVET can add value to the following sub-elements:

1. Enabling greater employer involvement through workplace attachments and on-the-job training. Flexible delivery methods can supplement work-based training by covering theoretical components through learning materials and distance support or block courses. Also, open and flexible approaches can include formative and summative assessment methods that use real work settings as much as possible. Programme design that assumes resource-based learning can ask trainees to use the materials for just-in-time learning to solve real work problems.
2. Enabling greater delivery driven by demand; for example, up-to-date curricula, competency-based, short and long courses, modular, full-time and part-time. Open TVET can increase learner and employer choice in delivery options, through offering full-time and part-time options, and lends itself to modular options. However, resource-based learning risks being less responsive in a changing marketplace because of the lead time to develop materials.
3. Defined occupational standards are relevant to resource-based open and flexible methods. Embedding the standards in learning materials ensures consistency across various learning experiences, and so can contribute to quality assurance. However, the cost of the design and development of learning materials can only be recouped if the materials are used by enough learners.
4. Trained instructors. Open and flexible learning may be useful for training the necessary number of instructors; in particular, allowing them to learn where they are based, and as they are working. It is essential to train instructors using open and flexible learning, if they will be teaching using open and flexible methods themselves. Resource-based approaches can decrease the dependence on a subject-matter expert facilitating a learning experience, or can fill gaps in a trainer's skill level if they lack the full range of experience.
5. Appropriate training content with definition of associated learning outcomes. Well designed learning materials ensure consistency across programmes and reduce variability due to the human element. Instructional designers begin with the learning outcomes and use them to select appropriate activities, tools and content. ICT-based delivery offers the benefit of developing digital literacy as part of the learning experience.
6. Availability of tools, equipment and supplies. Video demonstrations and online simulations cannot fully replace the benefits of working with actual equipment and tools. However, they can show how to do something, provide cost-effective practice with feedback, and thus decrease the time necessary to work with the real thing. Distance learning also supports learning in workplaces where the equipment is being used, and ICT can enable learners and workplace assessors to demonstrate competence using various techniques, such as online interviews, audio or video recordings, and scanned signed checklists.
7. Accessibility. Distance TVET can take learning to where learners are rather than insisting they move to a different city or island. Modular options support learning part-time while working or caring for families. Both these situations make learning more affordable.
8. Increased internal efficiency. Resource-based learning offers increased efficiency when the number of learners warrants the fixed costs of developing the materials, especially if this includes automated assessment. Use of open education resources or other existing material could provide some efficiency gains. However, this is likely to cut across the ability to respond to changing industry demands and meet community- or national-specific needs.

Section Three: Pacific open and flexible TVET activity

Pan-Pacific open and flexible TVET activity

Policy documents

PATVET

PATVET's mandate is to advocate for the overall development of the TVET sector in the Pacific and, as such, influence TVET policy formulation and resource mobilization. COL was instrumental in establishing PATVET, providing external expertise for the development of the constitution and providing initial secretarial support. PATVET has a regular slot at Education Ministers' meetings, raising the profile of ODL and TVET, which in turn informs national education policy development (Jenny Williams, personal communication).
One of the six outcomes in the PATVET 2007-2011 Strategic Plan (PATVET, 2007) focuses on open and flexible TVET. The focus is on building awareness of the potential of ICT and ODL to support TVET in remote locations, communicating existing good practice across their network, and finding potential partners to help develop ICT and ODL solutions.

> TVET is mode of learning that values traditional skills transferral, and promotes learning through seeing and doing. Remote areas and people of the Pacific do not need to be educationally disadvantaged by a lack of access to formal resources. An important role of the Association will be to highlight and prompt creativity and a marriage of the traditional and modern in an attempt to bridge this divide. Publicising opportunities and facilitating partnerships in ICT and ODL will be a priority for remote TVET development in the coming years. The PATVET forum will provide examples of and opportunities for outreach/mobile training in remote areas. Pacific experts will be promoted to international stakeholders as people with local knowledge of the TVET sector, and a responsibility to engage remote people and areas in development work.
>
> To achieve this output, PATVET will use its communications strategy to raise awareness of the use of enabling technology to make TVET accessible, and the responsibility of the sector to meet remote needs. PATVET will develop its inventory resource to better reflect remote TVET provision; and supplement this with web-based illustrations of remote training. Network members will be surveyed and promoted to external stakeholders as resources and representatives of the region. (PATVET, 2007, pp. 7-8)

PATVET is currently working on a range of activities, including:

- draft generic TVET provisions for potential inclusion in Pacific Education Acts
- ensuring they are an inclusive and representative organisation with an effective communication strategy
- setting standards on the delivery and recognition of TVET; that is, progressing on an operational Pacific TVET qualification register, in partnership with the Secretariat of the Pacific Board for Educational Assessment
- data collection: a reverse tracer study on a sample of TVET providers in each country
- promotion of TVET career opportunities for the Pacific
- sharing of TVET good practice.

However, there was no evidence of open and flexible or ICT-focused activity at this stage.

Pacific Plan for Strengthening Regional Cooperation and Integration

The Pacific Plan for Strengthening Regional Cooperation and Integration (Pacific Islands Forum Secretariat, 2007a) includes in its steps for immediate implementation:

- a digital strategy that recognises the potential of an improved ICT infrastructure to support distance learning
- investigation of the potential to expand TVET regionally. However, the focus of the expansion seems to be campus delivery, including establishing an Australian Pacific Islands Technical College in the Pacific region.

However, the greater detail in the *Pacific Regional Digital Strategy* (Pacific Islands Forum Secretariat, 2007b) states that TVET will be a focus for 'a regional study on the needs and mechanisms to satisfy the huge and increasing gap in Human Resources available to support ICTs in the Pacific', and aims to identify common solutions such as 'distance education over the internet' (p. 10). The strategy suggests that the private sector has an important role to play in ensuring a reliable ICT infrastructure. The strategy also recognises the existing ICT infrastructure, including the Japan International Cooperation Agency funded ICT centre at the University of the South Pacific (USP), the recent appointment of a Pacific Islands Telecommunications Association regional training coordinator, and various donor agency and commercial initiatives in ICT.

Skilling the Pacific Study

After analysing the TVET systems and the needs of 13 Pacific countries, as part of the *Skilling the Pacific Study*, Johanson et al. (2008) put forward five project proposals:

1. Strengthen TVET organisation and management.
2. Create a capital development and innovation fund.
3. Expand service delivery though ODL using ICT.
4. Strengthen TVET programmes in rural areas.
5. Develop outreach training in atoll economies.

In discussing the third project, the authors point out that TVET is increasingly taught using ICT in 'advanced regions'. They recognise the existing capability in Fiji Institute of Technology's Learning Centre and the sustainability of the Fiji Institute of Technology's franchise programmes in contrast to other ODL pilot initiatives in the region. They, therefore, propose using this centre, working closely with PATVET, as the implementation base. The proposed project would focus on extending the existing Fiji Institute of Technology programmes to other countries using a similar model to that already being used in Fiji. They identify the following challenges in implementing the project:

- high development and maintenance costs
- language differences
- communication difficulties
- lack of design specialists
- lack of ICT infrastructure.
-

Suggestions for dealing with some of these challenges are:

- assess demand for such programmes
- tap into existing ODL expertise, including that of COL
- explore collaboration with the University of the South Pacific (USP), particularly its existing network
- train tutorial staff

- include quality assurance procedures
- evaluate pilot delivery.

The 2009 Forum Education Ministers' Meeting tasked the Secretariat of the Pacific Community with seeking funding from the 10th European Development Fund to be able to act upon the recommendations from the *Skilling the Pacific Study* (Pacific Islands Forum Secretariat, 2009a). The Secretariat is presently scoping a project to map all the formal and informal TVET offered across the Pacific, identify the priority gaps to fill, and recommend priority actions. This is anticipated to be a 3- to 4-year project starting in 2012 (Lia Maka, personal communication).

Pacific Education Development Framework

The Pacific Education Development Framework (PEDF) 2009-2015 (Pacific Islands Forum Secretariat, 2009b) includes TVET under its mandate, acknowledging historical neglect of this sector but also recognising its importance in contributing to economic growth and its significance in relation to the large number of young people across the Pacific. It acknowledges and seeks to build upon the TVET analysis in the various *Skilling the Pacific* reports. The PEDF stresses the importance of ODL for those who have not been able to access formal schooling in the past. The PEDF also recognises the potential for ICT and ODL to support innovative teacher training to address the present teacher capability gap and provide lifelong learning for teachers. It goes on to highlight specific benefits that others have observed from ICT:

> Research conducted by development partners in other regions in utilisation of ICTs in education has produced encouraging results with students more interested and motivated, absenteeism reduced, learning as measured on test scores improved, collaboration and teamwork enhanced, and communication and computational skills improved. Some preliminary results of trials of the OLPC [One Laptop Per Child] initiative are also consistent with this research. There is now a potential for Pacific countries to move beyond incrementalism and with assistance of ICTs make a quantum leap forward in realising goals of access, quality and equity in education. (p. 19)

PRIDE

A number of the publications developed through the PRIDE project identified that ICT offers potential to add value to TVET in Pacific secondary schools. For example:

> ICT is for all, not just for developed countries. The challenge is to use the internet, computers and satellite communications in cost-effective ways. UNESCO-UNIVOC is constantly seeking ways to assist disadvantaged communities to access ICTs. For example, a remote village in Bangladesh has been equipped with a shared satellite phone and a Botswana village has been given a computer through which students can log on and undertake distance learning. In the south of Africa, even the poorest countries can share TVET best practices via ICT. (Maclean, 2009, p. 38)

However, this will require Pacific nations to develop new models to overcome specific distance challenges.

> It is vital that all students seeking vocational education do not have to come to the urban areas to receive training about urban contexts. Rural locations, villages and remote islands need vocational training programmes that suit their needs and that are, ideally, provided on site. Vocational educators may need to

> be mobile to provide appropriate training for Pacific Islanders who are often disadvantaged by distance. (Edmond, Logha, Thomas, & Hageleisa, 2009, p. 121)

Natau, Borja, Pangelinan, & Lafolua (2009) suggest ICT as part of the solution to inadequate access, building on existing Pacific-wide open and flexible systems.

> For students in remote islands and those unable to access the urban-based TVET learning opportunities, modern technology through the distance-learning mode can be utilised. Already there are Pacific-wide systems in place that enable students to access distance and flexible learning, open distance learning and interactive distance learning. Improvements to this already existing system would certainly improve TVET access. (p. 159).

Activities

A recent summary of current reforms in TVET under bilateral and regional assistance identified 21 projects (Secretariat of the Pacific Community, personal communication). Activities include: developing governance structures, physical infrastructure, and qualifications frameworks; improving links with industry and the focus on employability; curriculum design; pilot projects for specific TVET courses; and capability building.

Rural TVET in Solomon Islands

Just one of these 21 projects includes open and flexible TVET. NZAID and the European Union are funding a project focused on sustainable rural development in the Solomon Islands. The project runs from 2008-2013. One goal is to develop relevant modular training materials. However, initial activity is on developing relevant curricula. It is not clear how much the project will move towards open and flexible delivery. Other project goals are diversifying TVET training programmes, and building the capability of TVET instructors, planning and monitoring authorities, and the Solomon Islands Association of Rural Training Centres. Curriculum development was included in the first phase of the project, and this was completed for the four core course subjects by 2011 – agriculture, carpentry, home economics (life skills) and mechanics. The second phase is geared towards teacher training, including management and capacity building.

One Laptop Per Pacific Child

The One Laptop per Pacific Child joint project between the Secretariat of the Pacific Community and the One Laptop per Child Foundation began in 2007. The project focused on basic education but learning from the project may be relevant to this study as we consider the available ICT infrastructure in the Pacific and the challenges of introducing new education. By 2010, the project had distributed 5000 laptops to children in 41 schools across 11 Pacific countries, and was running seven country pilots and two country trials (Hutak & Thomson, 2010). A 2010 external evaluation of the Solomon Islands pilot concluded that the project had improved learning for students, despite some technical challenges. Examples were: assisting teachers to plan lessons, present more effectively, and use the speaking function of the laptop to help students pronounce English words correctly, and the calculator function to better support mathematics; students being able to research, explore, discover and create; and learning how to use technology. Other examples of benefits were students learning to share, higher attendance at school and family interaction over learning. Key suggestions for improvement were extending training to all teachers (pedagogical and technical) and having instructions and curriculum materials in Solomon Islands Pidgin as well as English. The report also recommended ongoing monitoring and evaluation (Australian Council for Educational Research, 2010).

PacRICS

In 2007, with AusAID support, PacRICS was launched. This is a satellite internet service designed especially for rural and remote areas of the Pacific (see http://www.pacrics.net). The project provides the infrastructure and fully funds 'public good sites'. In December 2009, Kiribati had eight sites, Papua New Guinea two, and Samoa three. Papua New Guinea had indicated interest in 40 other units, Tonga 10 and Vanuatu 15-20. AusAID support ceased at the end of 2009, and in 2010, the existing telecommunications provider and the Secretariat of the Pacific Community agreed coverage for another year.

Government policies on open and flexible TVET

Our analysis of national education strategies in order to understand their open and flexible TVET policies uncovered a range of combinations as in Table 1. The four countries in the righthand column clearly linked mention of openness and flexibility to TVET.

Table 1: Categorisation of open and flexible and TVET emphases within national education strategies

Country	TVET emphasis	Open and flexible emphasis	Open and flexible TVET emphasis
Fiji	Strong	Some	
Kiribati	Limited	Some	
Nauru	Strong	Some	
Papua New Guinea			Detailed
Samoa			General
Solomon Islands			Detailed
Tonga			General
Tuvalu	Strong	Some	
Vanuatu		Detailed	

Eight of the nine countries, Kiribati being the exception, identified TVET as an important part of their most recent education strategies. All countries included open or flexible education in some way, with most mentioning ICT as a way to support this.

Kiribati, Tuvalu, Nauru and Fiji do not have clear open and flexible TVET policies, even though Fiji has an established distance education infrastructure through which it supports other Pacific countries. The plans of Tonga and Samoa included general open and flexible TVET elements. Vanuatu's plan did not include open and flexible TVET. However, as part of the PRIDE project, a clear, thought-through ODL policy had been developed at a similar time. Papua New Guinea and Solomon Islands have more detailed open and flexible TVET plans. However, Papua New Guinea has the challenge of how to move a traditional print-based distance provider to become the flexible innovator that the system needs and the plan outlined. Solomon Islands seems better placed by being able to build on three factors: earlier innovative projects using ICT to deliver distance learning; some relatively new coordinating mechanisms; and consultancy in 2009 from which a detailed and informed distance and flexible learning policy was developed.

Limited TVET, some open and flexible policy

Kiribati

Kiribati's 2008 strategy prioritised improving primary and secondary schooling and did not include specific TVET goals (Kiribati Ministry of Education, 2008). The first goal to develop a national curriculum recognised the need to set 'linked learning pathways between primary, junior secondary,

senior secondary, TVET and employment and village life' (p. 7). AusAid has invested in strengthening Kiribati's TVET system. In 2008, AusAID assisted in the assessment and prioritisation of training needs, supported the development of competency-based teacher and training assessment, upgraded equipment at the Marine Training School, and, through the Australia Pacific Technical College, trained 20 TVET teachers and gave scholarships to 60 learners to study carpentry, mechanics, electronics, cookery and hospitality operations (AusAID, 2009). There appear to be no plans for open or flexible TVET in Kiribati at present.

However, the Kiribati education strategy does identify the potential of ICT and media resources to support the newly defined curriculum, and the need to develop people capability and infrastructure to enable this. The strategy also suggests a need to ensure that Kiribati Teachers' College programmes include updated curriculum content, pedagogy and assessment methods, new technology and flexible learning methods.

Strong TVET emphasis, some open and flexible policy

Tuvalu

Tuvalu's 2006 strategic plan for education aimed to strengthen the TVET system in five ways:

1. Create a specialist TVET role in the Ministry of Education and second a TVET-qualified teacher for the role.
2. Include TVET in its planned review of the secondary curriculum.
3. Investigate trade accreditations with off-shore institutions, such as a Fiji Institute of Technology franchise arrangement.
4. Investigate the potential for regional vocational centres and community centres to deliver vocational and life skills training. It was unclear which of these centres already existed and which were being proposed.
5. Investigate regional national qualifications framework initiatives.
   (Tuvalu Department of Education, 2006).

A Fiji Institute of Technology franchise for Tuvalu could add openness and flexibility as the institute does some distance learning, and regional or community centres could potentially develop open or flexible approaches. The Plan also proposed re-introducing a school broadcasting programme through the Fiji Ministry of Education's School Broadcast Unit, which could also add openness and flexibility, depending on how it is used.

Nauru

Nauru's 2008 education plan identified universal access to primary education as a key goal (Nauru Department of Education and Training, 2008). However, it also recognised TVET as important, and proposed the following:

- Increased TVET delivery through secondary schools, in the hope that this would encourage more students to continue to Year 12. The plan identified a need for vocational guidance advice for students entering upper secondary school and to promote TVET as a valued pathway.
- New TVET and trade training facilities on the Nauru Secondary School site.
- Partnerships with universities and trade course providers outside Nauru.
- Adult and community education classes using the new Nauru Secondary School site after hours.

Other general education sector actions proposed were to establish national authorities to review curricula and qualifications, and establish 'rich tasks' as part of the pedagogy for all teaching.

Open and flexible TVET was not discussed specifically. However, ICT was proposed to enhance learning experiences. To achieve this, Nauru recognised it needed to:

- develop teachers' skills in using ICT effectively
- have an efficient ICT service provider
- equip libraries at Nauru Secondary School, Nauru College, Kayser, Aiwo and Yaren with affordable ICT technology
- consider increasing efficiency of the TVET budget by use of ICT to deliver some skills training.

Fiji

Fiji also identified TVET as one of five foci in its 2009-2011 education plan, recognising TVET's link to employment opportunities and meeting Fiji's skills and productivity needs (Fiji Ministry for Education, National Heritage, Culture, Arts, Youth and Sport, 2009). Priority TVET actions were to:

- improve the effectiveness, responsiveness and relevance of TVET programmes to meet the changing demands of the labour market and students with special needs
- develop cultural technology to enhance indigenous knowledge systems and creative industries
- improve levels of skill, competency and qualification of TVET teachers
- improve effectiveness of the TVET advocacy programme
- increase collaborative learning and training for community and industry networks and partnerships (local, regional and international) for excellence in TVET
- improve access to ICT in TVET delivery
- establish and expand TVET quality vocational centres
- establish quality assurance mechanisms for TVET.

In an appendix, the 2009-2011 plan included progress against the 2006-2008 plan. Open and flexible TVET relevant activities were:

- A 2007 distance education pilot for class 3 in two remote schools, which also built capacity in the Central Distance Unit to further develop curriculum, but faltered due to lack of funding.
- Upgrading of nine vocational centres to meet requirements for Fiji Institute of Technology franchise courses.
- Seventy eight franchise programmes offered from vocational centres: 50 from the Fiji Institute of Technology and 28 from the Training Productivity Authority of Fiji. Vocational students are also able to sit the Class 3 Trade Tests at the end of Year 2 from the Training Productivity Authority of Fiji.

While Fiji has established distance education provision, there appears to be no open and flexible TVET policy beyond the 'improve access to ICT' bullet point above.

General open and flexible TVET policy

Tonga

In 2004, Tonga identified appropriate delivery of TVET as one of its highest priorities in its planning for the next 15 years (Tonga Ministry of Education, 2004). Specifically, they intended to:

- ensure national training plans were informed by good information through ongoing data collection, beginning with a survey of public and private employers
- increase choice for potential TVET learners through offering public funding for TVET options outside secondary schools for school-age learners
- upgrade the Tonga Institute of Science and Technology's existing technical and engineering certificate courses to a diploma level (New Zealand Standard)
- increase the efficiency and flexibility of the TVET system by moving from funding inputs to funding outputs, establishing a national qualifications framework for Tonga, and investigating using short courses to meet the mix of skill needs.

The *Tonga Education Policy Framework 2004-2019* (Tonga Ministry of Education, 2004) recognised the potential for a national qualifications framework to 'better accommodate emerging opportunities for distance education' (p. 55) and that a variety of delivery modes could be used for the short courses. In discussing the need to improve education administration, the framework identified the importance of building ICT skills in the workforce and the potential of ICT to enhance planning, management, and the delivery of educational services, including ICT-based distance education.

Samoa

Similarly, Samoa's 2006 nine-year education plan recognised the importance of distance learning in making TVET affordable and flexible enough to meet everyone's needs (Samoa Ministry of Education, Sport and Culture, 2006). One of the six key goals recognised the importance of lifelong learning. The plan considered four education sectors: early childhood, primary, secondary, and post-secondary education and training. The last category is further split into tertiary, teacher education, TVET and non-formal. An overall goal for post-secondary education and training was increased use of technology; that is, ODL, websites to support research, expanded satellite coverage, and improved networking for information sharing. Generally, the post-secondary sector needed to be more coordinated, better informed about the informal sector, have more standards, and be open to external agencies developing relevant institutions.

The plan identified specific problems for TVET as being:

- access – distance of provider institutions from potential students, affordability, suitable pathways
- capital investment required – use overseas distance learning to reach as many as possible
- a risk that as the Institute of Technology had joined the National University of Samoa, TVET courses 'may lose their identity and vigour' (p. 27). The plan suggests developing appropriate policies at the university to manage this risk.

The plan committed to strengthening links between secondary schools, non-formal providers, technical institutes and the Institute of Technology to meet the labour needs of the country, and supporting all Samoan Association for Technical and Vocational Education Training Institutes members.

The plan described non-formal education as being second-chance learning, education for social justice, personal development activities, professional training, community enhancement and cultural continuity, and supplementary education. Challenges for this sector included being seen as legitimate, assuring quality, being more efficient, and better coordinating activities. To help develop the non-formal sector, the plan committed to: supporting quality provision of non-formal education; consulting to clarify the relationships between the formal and non-formal sectors; establishing

standards, mechanisms, funding and effective information systems to better understand and monitor the non-formal sector.

The plan devoted a section to ICT in education, but this was focused on the school sectors.

A 2007 progress report mentions three things indirectly related to open and flexible TVET (Samoa Ministry of Education, Sport and Culture, 2007). Firstly, ICT in education initiatives have enabled some teacher training in using ICT, and computer courses at secondary and tertiary level. Schools have limited access to telephone, computers, radio and television. The Asian Development Bank has funded the Samoa SchoolNet and Community Access project. This has put learning centres, with various technologies and internet access, in schools for school use during the day and community access after school hours.

Secondly, primary and secondary teachers have received professional development through overseas distance learning. This does not appear to have been offered to tertiary teaching staff.

Finally, under post-secondary education and training, the Samoa Qualifications Framework has been involved in Pacific-wide Qualifications Framework discussions led by the South Pacific Board for Educational Assessment.

Vanuatu

A survey of provinces to inform Vanuatu's 2007 education strategy identified strengthening TVET as a felt need in every province (Vanuatu Ministry of Education, 2006b). Respondents recognised that the present TVET delivery would not meet the economic needs of the country, and was weighted towards urban rather than rural, and male rather than female, learners. The strategy sought to build on three existing donor programmes, funded separately by AusAID, European Commission and France. TVET priorities, to be completed by 2009, sought to:

- improve monitoring of quality by the Vanuatu National Training Council by making registration of providers and accreditation of courses compulsory
- strengthen industry linkages with training providers by working with the Vanuatu Human Resource Development Task Force to establish Vanuatu Scholarships Boards
- make tertiary institutions more sustainable through
    - merging providers to form larger institutions with provincial campuses
    - strengthening the University of the South Pacific provincial centres and using their library, classrooms and online network
    - working with regional associations and models
- increase diploma programmes and strengthen trade testing, beginning with tourism and hospitality, business and ICT, trades, and agriculture
- improve quality through TVET teacher training.

As part of the PRIDE project, Vanuatu developed a policy for ODL stating that distance learning would be a primary strategy for increasing access to formal and non-formal education opportunities in Vanuatu (Vanuatu Ministry of Education, 2006a). This policy recognised the potential for distance learning to increase access for geographically and physically disadvantaged learners, as well as lifelong learning.

The policy identified challenges Vanuatu would face, such as poor perception of distance learning at ministry level, establishing the necessary ICT infrastructure, building the necessary capability, sustaining a distance learning initiative's long-term needs, and building buy-in at the community level. The policy proposed establishing an ODL mechanism immediately. It identified the need to

develop the necessary ICT and academic infrastructures, and to build the parents', teachers' and communities' capability and buy-in. It also suggested learning from others in comparable situations and evaluating Vanuatu's experience, and recommended use of open educational resources where possible.

However, the actions are high level and do not indicate a full understanding of the size of the task, even before adding in challenges specific to Vanuatu of different language needs and lack of resources. The most concerning aspect of the policy is that, while it was developed in the same year as the above strategy, the strategy does not mention distance learning or the ODL policy.

Detailed open and flexible TVET policy

Papua New Guinea

Papua New Guinea's 2005 education plan has TVET as its second priority, below universal primary education, but ahead of secondary and tertiary education (Papua New Guinea Department of Education, 2005). Proposed actions to develop the TVET sector include stronger linkages between vocational centres and other parts of the system, greater private sector involvement, more flexible curricula (such as shorter and more modular courses), improved teacher training, and decentralised management.

A further key TVET strategy was increasing opportunities for flexible, open and distance education to provide alternative and comparable pathways for students and adults to complete their education. An immediate proposed action was to review the College of Distance Education in 2005, including allowing for better articulation of distance programmes into the formal system.

In assessing the flexible, open and distance education situation, the plan expressed concern that predicted increased enrolments for the College of Distance Education had not happened, despite growing numbers of students and lack of access to secondary and higher education. Contributing factors were poor public perception of distance education, limited opportunities for students to move into the conventional stream, print-only materials that are expensive to produce centrally and to deliver in a timely fashion, and poor administration of marking student work.

The vision for the review of the College of Distance Education was to:

- Provide an institution with flexible, open and distance modes of delivery that has the facilities to enrol 25 per cent of Grade 10 graduates and 10 per cent of Grade 12 graduates who are unable, or do not wish, to continue in the formal education system.
- Increase the number of distance education providers, using vocational centres and private providers.
- Adapt the reformed curriculum in the upper primary, lower secondary and upper secondary grades for use in distance education mode.
- Develop and deliver other programmes such as adult literacy and other short modular courses.
- Utilise ICT as it becomes feasible.
- Review current materials production and distribution systems for distance education.
- Improve the capacity of college staff to produce curriculum and assessment materials for distance education, and in the design and preparation of non-print distance education materials.
- Establish a standards and monitoring system.
- Strengthen the capacity of the Board of Studies for flexible, open and distance education.

The plan also identified the contribution ICT might make to education, specifically:

- Investigate the use of ICT for delivering teaching programmes and supporting learning and assessment in schools.
- Support the national media centre and distance education modes using ICT as it becomes available and is affordable and sustainable.
- Establish a broadcasting system to support curriculum and more effective communications.
- Enhance records management and archiving of information.
- Establish a fully developed education management information system unit at the national and local levels.
- Use a full range of media to raise awareness of education opportunities and to reach the whole country, even the remotest parts.

Solomon Islands

The second goal of the Solomon Islands' 2007 education strategic framework is 'to provide access to community, technical, vocational and tertiary education that will meet individual, regional and national needs for a knowledgeable, skilled and competent people' (Solomon Islands Ministry of Education and Human Resources Development, 2007a, p. 6). Key challenges to address were:

- potential costs and inefficiencies in delivering TVET to the large number of small, isolated rural communities
- lack of resources
- poor quality
- a supply orientation by TVET providers, which means limited numbers of TVET graduates have the necessary skills for economic advancement of communities, regions or the nation.

The framework recognised the relative strength of the informal TVET sector and the role of the new Solomon Islands Association of Rural Training Centres to coordinate across its 40 members. The emphasis was therefore on strengthening the formal TVET sector and integrating this with the informal sector by:

- providing a range of qualitative and relevant programmes through skill training centres
- enhancing the quality and relevance of instructor training
- building the capacity of planning and implementing authorities
- developing relevant curricula in practical subjects in the formal school system.

At the same time, the framework recognised the need to expand the concept of learning to informal settings – such as community-based and non-formal short courses – and expand the use of distance education and ICT. The framework referred to the existing Distance Learning Centre Project as the basis for future ICT initiatives (see below – p. 34).

The framework also recognised the potential role of ICT in supporting the new direction for education – in planning, management, and the delivery of educational services, and in being some of the core skills necessary for the Solomon Islands economy. The framework's suggestions for how ICT might be used indicated experience with technology and what it might add, such as, multigrade teaching, distance education, assessment and remediation, and meeting special needs. Under 'curriculum', the framework identified the need to seek donor assistance to develop, produce and disseminate distance flexible learning materials for pre- and in-service teacher training programmes, TVET courses and for non-formal education and adult and community education and lifelong learning activities. This suggests that a benefit from projects such as the Distance Learning Centre Project, beyond the direct project objectives, can be more informed policy.

The Ministry of Education and Human Resources Development also developed a three-year plan to implement the first phases of the framework (Solomon Islands Ministry of Education and Human Resources Development, 2007b).

The plan outlined suggested actions from a 2006 workshop, such as developing a TVET action plan, amending the Education Act to give a clear mandate for TVET, establishing national qualifications and curriculum frameworks, linking more to industry, increasing access to TVET, gathering better information, and enhancing the quality of the infrastructure and teachers. However, the plan did not commit to any of these actions.

The plan indicated that the Solomon Islands College of Higher Education (SICHE) has a Distance Education Centre, but did not consider how this might support the implementation of the framework or suggested actions from the workshop.

The plan suggested rationalisation of TVET programmes through central development of curricula. The Curriculum Development Centre would produce modules, for existing and new programmes. Centres could then choose the ones relevant to their community, rather than developing their own curriculum, as they had been. However, Curriculum Development Centre staff would need to build their capability in TVET, and TVET instructors would need to learn how to use the new curriculum materials.

In 2009, the Ministry of Education and Human Resources Development, in conjunction with the Teacher Training Division and the TVET Division, developed a draft *Distance and Flexible Learning Policy Statement and Strategic Framework*. This policy and framework is yet to be finalised and put to Cabinet for approval. The proposed policy covers the whole education sector. The following parts are relevant to TVET:

- that those advising the Solomon Islands Government on education have distance and flexible learning expertise, and that the Ministry of Education and Human Resources Development establish a senior role within the Ministry to lead distance and flexible learning in the Solomon Islands. Both these suggestions recognise the need for someone to lead the change if the Solomon Islands is to successfully implement distance and flexible learning
- work with COL and other potential partners to develop and deliver a distance programme to build education officials' capacity in understanding distance and flexible learning, including the different costing models
- redirection of finite national teacher training resources to development and delivery of a
- distance TVET teacher training programme, using text and radio, targeting the TVET teachers in vocational rural training centres. This would simultaneously upskill the TVET experts in teaching and distance and flexible approaches
- increase efficiency through Solomon Islanders studying for qualifications on-shore by distance and using the existing infrastructure, e.g. school buildings, where possible, to support distance learning
- increasing the likelihood of a sustainable model for national ICT provision by using the existing distance learning centres for as many different uses as possible as well as for distance learning.

The associated document detailing background and issues notes that TVET is the 'area where use of DFL methodologies is likely to be consistent with development partner funding priorities' (Mead-Richardson and Rumble, 2009, p. 8).

Relevant themes from implementation of all TVET

Before focusing on open and flexible TVET initiatives in the nine countries, it is helpful to understand the wider TVET context (Appendix Two gives a brief summary of the overall TVET provision). Themes relevant to consideration of open and flexible delivery include:

- In each of the nine countries, the present TVET system is inadequate to meet the country's workforce and economic needs.
- TVET tends to be focused on youth rather than retraining adults or second-chance learners.
- Small numbers of learners – with concentrated numbers in a few places and the rest spread over large geographical areas, usually with water in between – make it difficult to offer cost-effective TVET. Pacific countries face major logistical challenges in getting the equipment necessary for quality TVET to remote locations. It is enough of a challenge to get learning materials to many of these locations.
- TVET courses need to be continually reviewed and updated to respond to changes in the workplace, especially technology developments. Most of the nine countries are in the process of establishing effective mechanisms to involve industry to define their changing requirements. However, even when the new competencies are defined, the costs of updating equipment, reviewing curricula, redeveloping materials, and recruiting and training skilled teaching staff, discourage providers from responding. Providers are often struggling to stay financially viable themselves. The Pacific needs different TVET approaches to those that may be cost-effective in larger, less distributed, land-based systems.
- Many of the countries have more than one language – in some cases large numbers of languages – in which they seek to offer education and training, particularly to better engage less able or less motivated learners. This makes it challenging to find skilled staff and translate learning materials.
- Tracer studies indicate that TVET students who have moved to capital cities to study tend to stay in urban areas once they graduate.
- Effective rural training programmes recognise that learners are not unemployed as previously assumed, but are busy doing multiple activities to contribute to household incomes and, therefore, use part-time, flexible approaches (Lene, 2007).
- Funding of TVET is 4 to 6 per cent of countries' overall education budgets, much of which are focused on universal basic education. Funding tends to be spread across multiple government ministries and donor agencies, making it hard to coordinate a cost-effective approach.
- Pacific practitioners support a focus on strengthening TVET in secondary schools (Teasdale, 2009). However, Johanson et al. (2008) suggest that finite resources are better invested into specialist, and informal, TVET delivery linked directly to employment.
- There is a tension between the opportunity to use existing curricula and learning materials developed in another country or region to decrease costs and increase responsiveness to change, and the benefits of developing local curricula, materials and teaching methods.
- All nine countries exhibit strengths and weaknesses in their present TVET systems, so can benefit from sharing their knowledge and experiences through the Pacific Association of TVET.
- Female participation in TVET is lower overall than for males, sometimes significantly so (see Table 2). Attitudes are changing but gender stereotypes still drive many TVET choices; for example, females tend to study home economics, secretarial work and hospitality, and males tend to study fishing, agriculture, carpentry, metalwork and automotive.

Table 2: Female TVET participation (Source: Johanson et al., 2008)

Country	TVET formal (%)	TVET informal (%)	Detail
Fiji		5	Training and Productivity Authority of Fiji (carpentry, automotive, metalwork)
		46	Vocational centres
	37		Fiji Institute of Technology
Kiribati	55		Tarawa Technical Institute
Nauru			No information from source
Papua New Guinea		26	Vocational centres
	50		Business colleges
	19		Training centres
Samoa	31		Institute of Technology
Solomon Islands		26	Vocational rural training centres
	32		Solomon Islands College of Higher Education
Tonga	1		Tonga Institute of Science and Technology
		61	Community Development and Training Centres
Tuvalu			No information from source
Vanuatu		20	Rural training centres
	42		Vanuatu Institute of Technology

Note: The table is limited to the TVET statistics available from Johanson et al., 2008. However, it gives an indication of participation by gender.

Current implementation of open and flexible TVET

The countries studied tend to offer TVET through face-to-face programmes that assume classroom attendance, full-time study and use traditional assessment. Distance learning methods, including use of ICT to support them, appear to be frequently mentioned in policies and workshops but not yet consistently implemented. There are, however, some examples of open and flexible TVET.

Formal – specialist institutions

The Fiji Institute of Technology offers two flexible options that allow learners to choose to begin study towards a trade qualification in their home location then move to complete it at the institute:

1. Secondary school franchise arrangements that permit students to study at selected secondary schools. In 2007, 48 Fijian secondary schools had taken up this franchise option. Fiji Institute of Technology does assess secondary schools before agreeing to franchise but Brady, Gorham, Johanson, & Naisele (2007) expressed concern about assurance of quality across the system. Franchising is an important source of income for the institute.

   The Fiji Institute of Technology has established a franchise centre in Vanuatu (Natau, Naisele, & Rabici, 2009).

2. Distance learning for the same part of the carpentry/joinery, plant maintenance and plumbing courses as in the franchised option. The institute identifies partners where the trainees can do workshop practice and have some face-to-face support; for example, franchise or satellite centres. There does not appear to be a culture of seeking industry support for appropriate workshop practice or support. Print and CD learning packages support these practical components. However, challenges have included communication difficulties – such as irregular mail meaning a reliance on expensive couriers to deliver the learning packages – and lack of design specialists to design and develop quality learning materials. Three satellite centres started with 30 students each in 2004, had increased to 200 students each by 2006 and, in 2007, were aiming to enrol 5,000 trainees across the country by 2009. On average, 60 per cent of enrolled students were passing the courses, suggesting the blended approach was proving successful as a distance model. Learning Centre management saw other Pacific countries as a potential market for this model. Nauru was considering this in their 2008 plan.

In 2007, the Learning Centre at the Fiji Institute of Technology had established capability in technical training via distance learning and appeared to be increasing its distance options. The institute was offering a fully distant diploma in business, and some distance courses in business, engineering mathematics, and applied sciences (Brady, Gorham, Johanson, & Naisele, 2007). COL established the Learning Centre and hoped it would play a key role in enabling open and flexible TVET in the region. However, this project was not able to find out details of its present activity.

Brady, Gorham, Johanson, & Naisele (2007) refer to 21 e-learning centres that the Ministry of Education established in Fiji in 2005. The reference describes use of the internet and computer-based training materials. However, we have not been able to find any other reference to these centres.

Kiribati Institute of Technology experimented with offering an online diploma in business from Box Hill College in Melbourne, Australia, and a second online Australian course funded by AusAID. However, the telecommunications charges made this option too expensive. In 2007, with decreasing telecommunication charges, the institute was seeking aid support to pilot such an approach again (Brady, Ereata, & Gorham, 2007).

Maritime Colleges play an important part in TVET in the Pacific. Maritime Colleges in Fiji, Papua New Guinea, Kiribati, Samoa, Tonga and Vanuatu operate to an international curriculum and offer advanced training from the Australian Maritime College via ODL.

COL and the United Kingdom Department for International Development (DFID) sponsored the conversion of a face-to-face programme for supervisors at the then Tarawa Technical Institute. This meant it could be delivered by distance to the 33 atolls of Kiribati, rather than the more expensive and disruptive approach of bringing the trainees to Tarawa for months of study. A Kiribati instructional designer spent one month in New Zealand where he was teamed up with an instructional designer at the Open Polytechnic to do the conversion. He then returned to Kiribati and the New Zealand instructional designer travelled to Kiribati to ensure the training was suitable for local conditions and to further develop the local capability. The supervision course was later adapted for use by the Fiji Institute of Technology Learning Centre, which has since franchised it (Jenny Williams, personal communication).

Formal – secondary schools

The Samoa School Net and Community Access project, due for completion in 2012, aims to connect all secondary schools to a high-speed network, provide each school with a computer centre, develop digital learning materials and train teachers in using ICT in teaching (Hutak & Thomson, 2010).

In Tuvalu, the Department of Education obtains one hard copy version of learning materials, such as COL material, copies them at the central office, then sends sets to the single secondary school by boat. DVDs are less useful because of the possibility of transmitting or catching computer viruses. COL piloted secondary school mathematics and English by ODL from the Open Polytechnic in New Zealand. However, this was stopped due to lack of funding (Jenny Williams, personal communication).

Starting in 2009, Tuvalu has worked to strengthen TVET with the re-establishment of community learning. Secondary school vocational streams use local experts to offer skills-based training, such as sewing, cooking, language and enterprise. The Department of Education is working with the local governments of each island to facilitate this, and the local governments are now looking at paying the local deliverers for their contact hours.

Informal

Solomon Islands PFNet

The People First Network (PFNet) began in 2001, as an activity of the Rural Development Volunteers Association, a partner agency of the Department of Provincial Government and Constituency Development. It was a community-based non-profit network of some 30 or more rural 'email stations' run by the communities, using shortwave (HF) radios with modems to exchange emails with the base station in Honiara and outward to the internet. Various information-sharing services operated over the network (Lemming, 2007). The University of the South Pacific piloted the use of PFNet to offer distance programmes in 2002. However, in 2011, the project appears to have stopped, as the PFNet website is no longer operational.

Solomon Islands Distance Learning Centre Project

The Distance Learning Centre Project began in 2004 as part of the Education Sector Investment and Reform Programme funded by the European Union and NZAid. The overall programme had TVET, including literacy and livelihoods training, as its third priority. The centres were seen as being able to support rural TVET provision (Lemming, 2007). The project built on successful PFNet trials in 2002 with 10 students, and their two supervisors, using email to support university study. The distance learning centres (nine by 2007) were special buildings attached to schools. Each had the necessary hardware to generate electricity using solar panels, access the internet using very small aperture terminals (VSATs), pick up radio signals, print out materials sent from city-based education providers, and scan materials. A supervisor maintained the equipment and supported learners to use the technologies, including online communication tools.

An evaluation (Day, 2008) concluded that the project had been well set up and was adding value. However, the report recommended that use of the centres move beyond its present focus on distance learning to include other services, in the hope of making the centres sustainable. Day noted that sustainability would require identification of each community's needs that a centre might meet, a relevant business model and strategy, capacity building in management and ICT, and an integrated National Information Society Strategy.

Centres struggled to be commercially viable, even though they were also operating as internet cafes and seeking partnerships that contributed to their educational operations, for example, a bank branch in a distance learning centre would perform electronic funds transfers over the internet (thereby avoiding electronic funds transfers using phone calls) and also be involved in financial training. Another barrier to sustainability was the uncertain commitment from the monopoly

provider of the telecommunications, who realised the centres may erode its distance phone call business (ICT Regulation Toolkit, 2011).
Day (2008) and Hutak and Thomson (2010) noted that the Ministry of Education and Human Resources Development had not developed distance learning programmes to make good use of the centres , which meant they did not attract enough students to make them sustainable. At present, the centres have been unable to prove sustainable and require funding from the Ministry of Education and Human Resources Development to continue.

Mobile training

Kiribati Institute of Technology, Vanuatu Institute of Technology, and Vanuatu Maritime College offer mobile training opportunities in the outlying islands. In this context, the term mobile does not mean use of mobile technologies. Rather it is going to the remote islands to offer training, rather than relying on potential learners to come to the main centres for training. These are short courses and supply does not tend to meet demand. Across the Pacific, informal TVET providers and government departments offering training tend to use similar models. Some challenges in offering such TVET are finding skilled teachers and appropriate equipment.

Vanuatu Institute of Technology uses a train-the-trainer approach for rural outreach programmes in solar installation and repair, small business management, and hospitality. Institute staff run workshops to train the trainers who then run five-day workshops. Ministry of Co-operatives and Ni-Vanuatu Business used a similar train-the-trainers approach with 262 village co-operative societies to offer two-week courses in business management subjects. However, the per person costs (Vt1000) for such programmes need to cover central staff and attendees' travel and accommodation and are quite high. They also still only offer limited coverage (Brady, Gorham, Johanson, & Vira, 2007).

Vanuatu Maritime College ensured appropriate equipment by taking a specially outfitted boat from island to island to offer a mobile two-week training programme for rural fishermen. This meant they could still use institute equipment, but reach remote coastal villages. This was also expensive, costing Vt 2000 per person (Brady, Gorham, Johanson, & Vira, 2007).

Community radio

Don Bosco is an international Catholic aid agency specialising in TVET in the Pacific, including Fiji, Samoa, Solomon Islands and Tonga. In Honiara, the Don Bosco school offers a community radio programme that delivers community TVET in subjects such as how to treat your goat and what is the best taro to plant, and through public health messages.

Move to resource-based learning

In Papua New Guinea, an informal TVET model proved successful in assisting subsistence farmers to develop technical, business and livelihood skills. It was essentially a traditional model using face-to-face delivery of 12 two-day workshops, with supporting workbooks to achieve 12 training modules, tapping into local groups for ongoing support between training. It proved successful but recommendations to improve the programme acknowledged the limitations of what can be achieved in a two-day workshop and recommended improving the supporting resources by using the local language in the workbook and creating visual aids, such as pictures and posters with key messages, for participants to take home (Boeha et al. 2007). This case study illustrates both the challenges and opportunities when considering moving to a more resource-based learning approach such as ODL.

COL open education resources

Lene (2007) was the only author of the studies funded by the Asian Development Board to highlight the work COL has been doing in the Pacific. He described five projects in which COL had funded development of materials that could be used by PATVET members across the Pacific:

1. Supervisory skills certificate – as mentioned above, Tarawa Technical Institute adapted an existing face-to-face course, which was then adapted by Fiji Institute of Technology and delivered to learners in Fiji.
2. Learning about small business – requested by education ministers. Samoa Polytechnic adapted and translated the material. Tracer studies showed positive results for learners in Samoa and Papua New Guinea, including improved knowledge of how businesses operate, greater financial and time management skills, improved self-esteem and learning to learn with others in their communities. Samoan Women in Business have adopted it as their core programme.
3. Tourism – three community level courses, co-developed by representatives from Tonga, Samoa and Vanuatu. Again, COL developed local capability by sponsoring two people to visit the Open Polytechnic to work on the project with their instructional designers.
4. Basic trades for small islands – requested by Nauru, Tuvalu, Kiribati, Cook Islands, Niue and Tokelau. COL contracted the Open Polytechnic to produce tutor and student workbooks, and videos, covering the three trade areas – working with timber, concrete, and small engines. In this model, the learners study at the same physical location (not necessarily a classroom), but the resources enable tutors to learn by distance what to teach and how to teach it. This means tutors do not need to be subject-matter experts or trained teachers to be able to offer the courses. In response to feedback on earlier projects, the packages were produced in English and assumed locals would use them as they were, rather than customise them.
5. Literacy and numeracy within basic trades – COL contracted the Open Polytechnic to take the outputs of a subsequent Pacific literacy and numeracy workshop and embed the literacy and numeracy in the basic trades courses. The literacy and numeracy materials have been piloted in Papua New Guinea, Solomon Islands, Tuvalu, and Vanuatu and will be piloted in Samoa in July 2011. An evaluation workshop in Wellington June 13-20, 2011, concluded that the materials had effectively supported educators to develop the literacy and numeracy of the students involved in the four pilots. The workshop participants also worked together to improve the materials, including strengthening the guidance for potential tutors.

Other COL-funded activities to build the ODL capacity of the Pacific included workshops, sponsored attachment to the Open Polytechnic, staff development by distance, and establishing multimedia centres in Kiribati, Samoa, Fiji and Vanuatu, through funding equipment and training staff (Lene, 2007).

Section Four: Possible roles for COL

This report identifies the importance of TVET in the Pacific (p. 12) and the role that open and flexible TVET can play in an effective TVET system (p. 18). All of the benefits offered by open and flexible TVET are relevant to the Pacific. However, a number of Pacific-specific challenges exist that will require Pacific-specific solutions. The rest of the report discusses challenges facing implementation of open and flexible TVET in the Pacific and suggests possible actions COL might take to progress this important area. These possible actions arise from suggestions by those interviewed, analysis of the literature and the existing situation, and the author's research and experience in open and flexible TVET.

1. Pacific relevant

Any solution in the Pacific needs to recognise and work with the range of countries, languages and cultures represented by that single term. *The Pacific Education Development Framework* (Pacific Islands Forum Secretariat, 2009b) outlines a number of guiding principles and values, including diversity:

> mutual respect and valuing of the differences within and between Pacific societies cultures and values. (p. 5)

and harmonization:

> a shared commitment between countries and development partners to align development activities with partner countries' national priorities; and giving importance to the national leadership role in coordinating development assistance with a focus on managing for results. (p. 5)

Similarly, Puamau (2005) describes a holistic approach to educational reform in the Pacific:

> A better balance in academic, technical, vocational, life skills and lifelong learning ... with more effective articulation between each level. (p. 13)
>
> A culturally inclusive curriculum where cultural and linguistic literacy is part of what is offered. (p. 14)
>
> ... to be cognisant of indigenous concerns, and to blend both local and global ways of knowing and doing … in order to adopt the best of both. (p. 14)

Underpinning each solution will be 'traditional Pacific core values such as respect and reciprocity as well as emerging global values such as sustainability and accountability' (Fua, 2005, p. 113).

However, there is a real tension between valuing and respecting each nation, culture, and language, and sustainability. Moves to resource-based learning can increase efficiency and extend access but only if large enough numbers use the resources. Hard decisions need to be made to allocate finite funding, while seeking to respect the differences within and between Pacific societies. This includes developing a range of models to meet the diverse Pacific needs, and having criteria to assess which models are and are not appropriate to use to meet the needs of different groups. For example, a group in which only a small number speak a language would not use a traditional distance resource-based model. However, an individual who is fluent in English and the local language may benefit from open education resources and technologies that allow self-development of materials to create local relevant versions.

> It is important that any work that COL does recognises the diverse cultures within the Pacific and works as much as possible with the Pacific open and flexible TVET expertise that already exists. However, COL's added value is also to link the Pacific to 'global ways of knowing and doing' (Puamau, 2005, p. 14) and COL needs to seek the right balance between the two extremes of 'local' and 'global' in the work that it does.

2. Leadership and planning

The review of policy documents indicates that policymakers in only two out of the nine countries have a strong understanding of both the potential of open and flexible TVET to contribute to their education strategies and how they might implement such a strategy. Similarly, PATVET and the PRIDE project mentioned the potential of ICT and the importance of TVET but did not illustrate this with good examples or implementation plans. The Solomon Islands drafted a strong distance and flexible learning policy with associated actions two years ago, but this is still waiting on final government approval.

The *Skilling the Pacific* team found little evidence of existing open and flexible TVET models, despite seeing this approach as crucial to future cost-effectiveness:

> Prudent allocation must also be made of scarce existing resources in TVET. Unfortunately, the review found few examples of sustained TVET via distance teaching, except FIT's superb franchise program and USP, which uses ICT to deliver distance programs by traditional lecture methods (Johanson et al., 2008, p. 133).

The nine Pacific countries in this study urgently need innovative approaches to TVET to meet their social and economic goals – now and in the future. Open and flexible TVET can be an important part of the solution. These Pacific countries face the same challenges as every other country in seeking to implement the change; that is, understanding why open and flexible TVET is important, building buy-in to a shared vision, developing new ways of working, building new skills for teachers and learners, and keeping up with ever-changing technology. However, they also face unique challenges of defining appropriateness for each Pacific culture, working within hundreds of languages, low numbers of people spread across thousands of islands with large expanses of water in between, and severely limited resources to invest.

Research into national e-learning policy in 10 countries identified the following steps as important in implementing the necessary change, and noted that they tended to happen in two phases:

- Phase 1
  - develop technology infrastructure and staff
  - build leaders
  - support learners
  - create content
- Phase 2
  - develop collaboration
  - build demand
  - support research
  - align policy.

  (Anderson, Brown, Murray, Simpson, and Mentis, 2006)

While the context for these steps is ICT-based learning solutions, these steps are relevant to resource-based learning, where a new way of working is necessary and working together can lead to

increased efficiency and better learning and knowledge sharing. Australia and New Zealand have used quite different approaches to build open and flexible TVET systems, as discussed briefly below.

Australian Flexible Learning Framework

In 2000, the CEOs of Australia's eight state and territory funding agencies and the CEO of the federal funding agency launched the Australian Flexible Learning Framework – a national change management strategy to embed flexible TVET. Each state and territory agreed to forego a proportion of the expenditure they had earmarked for physical infrastructure, reasoning that if they used technology more, the demand for physical spaces would decrease as students studied off campus. They agreed to pool these funds together to achieve their shared vision – a total of AUS$15 million per year. During its first five years, the framework focused on building the supply of formal and informal, and public and private, TVET providers.

In 2004, the CEOs agreed to work together for four more years, continuing to build supply but also beginning to work with industry and communities to build demand. They also started measuring whether students and employers believed students were gaining work-relevant skills through using technology to learn. In 2007, the nine CEOs agreed to work together for four more years to embed the change from the eight previous years (Flexible Learning Advisory Group, 2007). The 2008-2011 strategy noted the impact of the previous 11 years:

> By pooling expert knowledge, being aware of different client bases, and sharing ideas and experiences the Framework has accelerated learning on the effective use of ICT across the VET system. By combining and leveraging resources, developing a single flexible solution to meet the needs of all states and territories, and targeting strategic responses, it has delivered returns that multiply over and again the value of investment by the Australian and all state and territory governments. (p. 20)

Since 2000, an annual business plan has been developed detailing the projects being undertaken in support of the implementation of the framework. Each plan includes a short description of a programme of projects, and of each project, along with information about the project manager and funding allocation. A secretariat oversees national collaboration with management of each project distributed across all the states and territories, which means that capability is built across the country. Selection of who manages what is based on relevance and existing capability. Over the years, the framework has stopped projects and started new ones, informed by ongoing evaluation against its clearly articulated agreed goals and hard decision-making by the Flexible Learning Advisory Group who steer the framework.

As a result, the Australian TVET system has provided direct funding and support to more than 20,000 TVET practitioners and produced approximately 500 e-learning tools, more than 18,000 resources shared through a repository of repositories, and hundreds of tools to support this. In addition, the Australian TVET system has produced evaluated pilot and ongoing projects – working with communities and industry to offer quality, relevant flexible TVET – a world-class knowledgebase sharing the lessons learned over 11 years of coordinated investment, and several years of data showing that students and industry believe that these approaches prepare learners for a modern economy.

Example projects

A few projects within the 11-year activities of the framework are worthy of special mention:

- Toolboxes – since the framework began in 2000, the programme has included the development of high-quality multimedia learning resources to support prioritised national

qualifications. From 2003, industry has been actively involved in the prioritisation process. Initially, the Toolboxes were whole packages, but they have increasingly moved to a learning object approach.

The learning objects are available free via a searchable repository of 1800 learning objects, connected to the national repository LORN (Learning Object Repository Network, see below). In 2003, the Toolbox champion role was created to support educators and technologists in their use of the resources. Since this time, each state has one full-time equivalent funded through the framework. Because the role has an educational and a technical component, it is often performed by two people. Other support includes a Toolbox helpdesk and a website. Toolbox development is contracted to registered training organisations, who provide the subject-matter expertise and project management and may develop the resources themselves or work with a private company. Thus, staff capability is built in the registered training organisations. The framework has conducted multiple evaluations of the Toolboxes; for example, on development, rework, use, uptake and impact on e-learning.

- LearnScope (1998–2007) – LearnScope was a key professional development programme funded through the framework and administered by states and territories. Thousands of practitioners have enhanced the skills and understanding that underpin e-learning and e-business. LearnScope funded work-based professional development projects, and encouraged both individuals and teams to model sustainable practices in their own learning through a range of strategies. The strategies were informed by a report *Professional Development for the Future* also funded through the framework.

- A 2006 evaluation of the eight years of LearnScope concluded that the programme had significantly or highly significantly changed the way 70 per cent of those involved implemented e-learning choices for clients. Examples included practitioners' ability to experiment with creating flexible options for individual learners, and give students greater employment prospects through enhanced computer skills, catering for smaller classes, fast-tracking programmes, and offering more on-the-job training. The evaluation concluded that LearnScope had increased staff receptivity to and acceptance of use of technologies to assist the teaching and learning process. In 2008, LearnScope was replaced with a client-focused outcomes business activity where professional development might occur, but was not the focus.

- Benchmarking – in 2004, 12 e-learning indicators were agreed. Six indicators demonstrate the uptake and outcome of e-learning in the TVET system; three indicators are related to the uptake and impact of e-business; and three indicators are related to the uptake, use and outcomes of e-learning on TVET teachers and trainers. Survey results for six years are now available via the framework website and quantify the progress across the Australian TVET sector.

- Learning Object Repository Network (LORN) – LORN allows teachers and trainers to find and use, share and sell, online training resources from across the Australian TVET sector, linking separate state repositories. The project had to select standards and then modify the existing repositories to use these standards.

- E-learning for industry – started in 2005 as part of the 'building demand for e-learning' phase, the framework funded 40 Australian businesses to develop industry applications of e-

learning for workforce development. The integration focus of the 2008-11 strategy continued these industry projects, with more emphasis on embedding across a sector.

- Community engagement – was a series of projects within the 2004-07 strategy, focused on fostering and embedding e-learning within some of Australia's most disadvantaged communities and strengthening the foundation of workforce skills. The projects aimed to support economic and regional development and sustainability by creating close partnerships within training organisations and adult and community education providers. Target groups were indigenous Australians, mature-age workers, 15- to 19-year-olds and isolated communities.

Benefits of collaboration

While dated, the 2004 evaluation of the Australian framework devoted one of five chapters to the case for collaboration, identifying logical and financial cases for collaboration as well as the added value observed from collaboration (Phillips, Aspin, Hull, & Oxley, 2004). These are outlined below with a discussion of their relevance in the Pacific context.

Logical case for collaboration

The logical case for collaboration outlined four reasons for a national and collaborative approach to investment in the use of technologies in TVET in Australia:

1. The national TVET system and strategy – while TVET is delivered at a state and territory level, it is a national system. Registered training organisations are registered nationally, Australia has a set of nationally agreed arrangements to ensure quality, training packages are nationally endorsed standards and qualifications – often developed through national industry advisory bodies – and there is a national government strategy for TVET.

2. Interoperability – TVET providers and clients in different states and territories use different delivery platforms. Working together to improve information management and increase adoption of consistent technical standards can ensure that these technologies can work together seamlessly. The sector needs a coherent interoperability framework.

3. Access and equity – students, businesses, curriculum, technology, and especially access and equity issues do not stop at state borders. Only state funding does.

4. Use of limited resources – there is no sense in duplicating the development of online learning resources and research into the effective application of learning technologies.

   > Even if there was an unlimited pool of financial and human resources in the Australian VET sector, which there is not, it would be a blatant waste of those resources to require each state and territory to individually work through the processes required to develop their own and potentially conflicting approaches to the use of technologies in VET. The money and time and effort of Australia's best and brightest could be better spent improving the quality of teaching and learning outcomes for learners, businesses and communities (Phillips, Aspin, Hull, & Oxley, 2004, p. 25).

The first two points are less relevant for the Pacific, although could be considered for future-proofing. The region is moving towards a shared TVET system with a shared qualifications framework, but this is still in development. Interoperability is important for ICT-based initiatives but, given the lack of ICT infrastructure, less important in the Pacific right now. However, the last two are relevant arguments for the Pacific region now; that is, maximising use of limited resources and tackling similar access and equity issues together.

Financial case for collaboration

The financial case for collaboration began with a discussion of the state of Queensland which, in 2003, contributed AUS$2.7 million of the AUS$15.3 million, from its infrastructure budget. Queensland had no programme management responsibilities in 2003, so did not derive related capability development or direct funding benefits. However, all the learning and outputs for those projects are available to Queensland. Queensland can purchase Toolboxes, and every TVET teacher in Queensland can access the online community. Recognising the local nature of some professional development initiatives, the report removes AUS$4.4 million and suggests that Queensland is still left with the benefit of AUS$10.9 million, an annual return of 403 per cent.

The evaluation report calculates the return for each state and acknowledges that the benefits are not 'fairly' distributed. The annual returns per state range from 253 per cent to 2047 per cent. So, it is not even, but everyone gets good returns, consistently over five years. The report also discusses what might have been achieved if each state had spent their contribution of that money individually, pointing out that the Toolboxes alone are worth more than every state except Victoria had put in over the five years of the framework at that time.

The report also compares the investment of AUS$15 million per annum with physical infrastructure funding, using a AUS$16 million fit-out in just one TAFE that delivers benefits to only one institution, with the range of benefits delivered across the whole TVET system. Finally, the report points out that, while a large sum of money, AUS$15 million is 'only a fraction of 1%' of the full spend on VET each year' (p. 26).

The financial argument is highly relevant for the Pacific region, whether considering individual country or donor agency investment. The up-front costs of getting buy-in to a collaborative effort can be reaped many-fold down the track, as well as ensure enduring results from a coordinated planned approach. PATVET has made progress in this direction through bringing experts together, having a voice at Education Ministers meetings and an action plan. However, the present focus is on information gathering, rather than building a shared vision and mandate for change with long-term commitment and strategy, annual business plans and adequate investment. The financial case is also relevant in contrasting the impact of investment in ODL versus in physical infrastructure.

Added value from collaboration

The report suggests that over the four years being evaluated, the framework was an action-research project for collaborative effort, which has demonstrated tangible benefits such as Toolboxes, participation in professional development programmes, and flexible learning policies and guidelines, plus the less tangible benefits of collaboration, such as:

1. legitimising action and investment at state, territory and training organisation level to support flexible learning initiatives because the existence of a national framework demonstrated the importance of flexible learning in TVET
2. creation of powerful problem-solving networks that provide quick access to a substantial body of knowledge, experience and creativity

3. leveraging investment across framework projects and programmes and the complementary use of framework, state, territory and training organisation funds in professional and resource development to provide practical on-the-ground support to organisations and teachers to implement flexible learning
4. consistency in the approach taken to flexible learning in TVET policy and standards development at a national, state and territory level
5. fostering a culture of competitive collaboration that has encouraged sharing within and outside the framework, but at the same time encouraging competition to improve outcomes.

In the Pacific, all five of these benefits from collaboration are relevant. A Pacific regional strategy, with associated investment, could legitimise activity at different levels of the system, in different countries; coordinated effort with active, appropriate and ongoing knowledge sharing could create the network needed to solve the region's unique problems; shared materials and people development could accelerate implementation of open and flexible TVET; and consistency in approaches and building a culture of competitive collaboration could minimise reinventing the wheel and build a platform for greater effectiveness across the region in the future.

New Zealand E-learning Collaborative Development Fund

In 2001, New Zealand established a group to advise on the way forward for e-learning in NZ. Like their colleagues around the world, the group identified that to move forward in e-learning, New Zealand needed a national strategy (E-Learning Advisory Group, 2002).

> In developing our strategy for e-learning, the Advisory Group found it very useful to consider the impact of e-learning on all aspects of the teaching and learning process. The three underpinning requirements in this educational value chain are effective leadership, high standards of quality assurance and sufficient capability in terms of systems, people and infrastructure. (p. 6)

The third 'underpinning requirement' was then the focus of implementation, with a four-year investment of NZD$7 million per year to build capability in e-learning. In contrast to the Australian approach, this was not implemented as a change initiative. Instead, ad hoc projects were developed bottom-up by clusters of institutions and the recommendations for leadership and quality assurance were ignored.

Between 2004 and 2007, the e-learning Collaborative Development Fund enabled a significant amount of capability building across the sector. A key aim was to gain greater efficiency across the system through not duplicating effort.

The 2007 evaluation identified two lasting capability outcomes:

- raised profile of e-learning
- creation of an active community of practice across the university and institute of technology and polytechnic sectors.

The evaluation noted that capability building was greatest in regard to defining standards, developing individuals and institutions already actively involved in e-learning, and open source software development; and least with regard to staff development (Ham and Wenmoth, 2007).

The evaluation also raised concerns about sustainability, which, four years on, has been confirmed as a valid concern. The significant investment in Moodle has led to its adoption across most of the tertiary sector in New Zealand and capability remains in various individuals through the Flexible

Learning Leaders project or who grew because of opportunities within projects. Pockets of activity which were kick-started during this time are maintained by individual institutions, but many across the sector are minimally involved and the NZD$28 million investment is hard to find unless you know where to look.

New Zealand institutions have continued to develop capability in flexible learning but the system as a whole has not benefited from the efficiency of collaboration as in Australia.

Facilitate shared vision building

A possible role for COL is to work with PATVET and relevant donor agencies to build a shared vision for open and flexible TVET across the region. This will not be a quick activity but the Australian and New Zealand stories suggest that building this coalition at the beginning means future investment will reap greater, more enduring rewards. The various policy documents and interviews within this report suggest there is a need for decision-makers in each country to better understand the steps and long-term commitment necessary for permanent change and, from there, build a shared vision for the Pacific.

Change literature increasingly recognises that conversational approaches are important to enable people and institutions to operate in new ways. Principles behind these conversational approaches are that:

- the process is as important as the outcome because people need to have shared understanding to work together if change is to happen
- the complexity of the problem requires the thinking of many people
- it is more effective long-term to build buy-in and shared understandings. (Holman, Devane, & Cady, 2007)

An investigation of 22 regional or national e-learning collaborations identified three critical success factors as being leadership, government involvement and expert advice (Neal, 2008). Therefore, the conversations need to occur between institution decision-makers, government decision-makers and open and flexible TVET experts with the range of necessary expertise. In the Pacific, donor agencies also need to be involved. The purpose of these conversations would be to build understanding of the potential and challenges of open and flexible TVET and agree on the following:

- the links between open and flexible TVET and outcomes stated in the region's and countries' education, economic, labour, social, health and digital strategies
- the priorities for action
- a model for joint action; for example, centrally managed single network, single network with autonomous members, or network of networks
- who will lead the action
- who will fund the action
- length of commitment.

COL has already developed resources for those leading and planning ODL initiatives that would add value to the conversations above, namely:

Planning and Implementing Open and Distance Learning Systems: A Handbook for Decision Makers (http://www.col.org/SiteCollectionDocuments/odlplanningHB.pdf)

Planning and Management of Open and Distance Learning: Training Toolkit (http://www.col.org/SiteCollectionDocuments/pub_Planning_Management_03_web.pdf)

Costing ODL CD Rom (Available from http://www.col.org/resources/publications/trainingresources/Pages/handbooks.aspx)

Supporting Distance Education Through Policy Development (http://www.col.org/resources/crsMaterials/Pages/DistanceEd.aspx).

Other useful resources and activities would be exploring case studies from other countries seeking to collaborate for flexible learning, and managing the related change. Once the vision and mandate for change is established, with long-term commitment and adequate investment, PATVET could lead the strategy development, develop annual business plans and manage the various collaborative activities, preferably with some being led by each country to build local capacity.

COL would have several important roles to play:

(a) initially driving the initiative and managing relationships across all the key stakeholders
(b) part-funding the initiative
(c) providing external experts, as appropriate, to inform the initial conversations, and also working with local experts who recognise the unique features of each island nation, in order to develop and implement a regional strategy.

3. Resource-based learning

Well-designed learning resources in open and flexible TVET support consistent use of defined occupational standards across various delivery providers, decrease variability due to different teacher capability, and can cover gaps in teacher knowledge of the full range of standards defined by industry or in teaching and learning. Resources can also increase access by decreasing or removing the need for face-to-face training and thus taking learning to where learners are and supporting part-time as well as full-time options.

However, resource-based learning risks being less responsive in a changing marketplace because of the lead time to develop materials. Also, the cost of designing and developing learning materials can only be recouped if the materials are used by enough learners, which is a greater challenge in the Pacific.

Use of open education resources or other existing material can reduce the cost but makes it more difficult to respond to changing industry demands and to meet national, community, or language-specific needs. This report also indicates that there is limited uptake of existing open education resources, but it is not clear why. One respondent suggested there is low awareness of the materials and, for those who are aware, little time to become confident in their use.

Generally, Pacific staff and students complain that textbooks and other learning materials have been developed for use in other countries, so the examples and metaphors are not culturally relevant. Robbins (2006) gives examples of how staff and students can develop culturally relevant educational multimedia: '... *decentralized* methods that enable students and teachers to customise educational multimedia themselves, and *dialogic* methods that provide local context through conversation-like interfaces … educational tools include a virtual peer, wiki, self-test, digital scrapbook, and three-tier file structure' (pp. 202-3).

Pre-developed materials and customised or locally produced materials offer different benefits. The former offer the advantages of being developed by experienced educators and subject matter experts, and being immediately available to use by practitioners with multiple demands on their time who may or may not have the expertise of the original development team. However, locally

developed materials offer the advantages of cultural fit, communication in the learner's first language, and relevant learning activities and content that match the local setting. Pursuing only one approach has risks. COL can support both approaches simultaneously.

Support decentralised materials development

COL has established multimedia centres in four countries that can potentially support decentralised materials development such as Robbins proposes, to produce culturally and context-relevant non-English resources. However, there appears to be low awareness or use of these centres. A possible role for COL is to expand the influence of these centres through workshop activities that build awareness and capacity to customise soft copies of print materials and develop multimedia. The workshops could also train participants to train others to do this, where other infrastructure is available to them. COL can further support this work by hosting the print and multimedia resources on their website, promoting them through their networks and sharing the story of their development to inspire others.

COL is the founder, and now ongoing supporter, of WikiEducator, an online tool that supports local development and sharing of learning materials (see http://wikieducator.org/). This report found no mention of the use of WikiEducator in the Pacific. A possible role for COL is to promote this tool and train educators in how to use it.

Support central materials development

At the same time, COL has had some success with funding central development of open education resources. COL may focus on developing further open education resources for targeted curricula, especially as the Pacific Qualifications Framework develops. Those interviewed suggested COL develop:

- materials in simple English with lots of pictures, to reduce the need to be fluent in English to learn, and that can be customised for each country, such as the trades materials
- TVET specific teacher training.

Print and electronic materials are necessary to meet the full range of needs during the transitional times when some have access to the internet, others have access to computers and others have limited access to electricity. Thus the region can develop the ability to use technology where the infrastructure exists, but relevant TVET can take place everywhere, whether technology exists or not. Examples of the range required are print materials, DVDs, online learning experiences and open software on memory sticks or downloaded from the web.

Maintenance of materials is another challenge facing any resource-based approach. COL needs to consider this in any project. Hosting the materials on COL's site, whether centrally developed or customised, is a simple way to at least maintain the URL. This may also support use of the resources beyond the country and region.

Build capacity in open educational practices

Open educational resources are part of the solution for the Pacific. The finite resources of the region need to be invested in location-dependent activities (such as physical infrastructure, on-the-ground support), and culture-dependent activities (such as models, pedagogies, processes and supports that reflect the different Pacific cultures). Open educational resources offer the potential for Pacific TVET instructors to invest less time in the development of curricula and learning materials for open and flexible TVET and more time in local support and hands-on training and assessment in practical and soft skills.

Within the Pacific Plan, PATVET members met to discuss regional developments and job creation (PATVET, 2009). The meeting concluded with over 20 actions, including seeking permission from COL to use the online resources available through the Virtual Universities for Smaller Commonwealth States. While it is positive that the regional TVET leaders consider this existing material can be part of their solution, it indicates a lack of awareness of the openness of open educational resources. A possible action for COL could be to build PATVET members awareness of open educational resources and associated open educational practices.

A possible activity is to facilitate a capability building experience for PATVET members, which models use of existing resources, within a blended approach that uses face-to-face and distance learning pedagogies. Suggested topics are licensing arrangements, a list of existing sites, how to search for open education resources, and assessing an organisation's desired and present position on the Open Educational Practice Maturity Matrix (see http://opal.innovationpros.net/wp-content/uploads/2011/03/OPAL-OEP-guidelines.pdf).

This capability building would be relevant for the Pacific, for other developing countries and for more developed countries. The potential of open educational resources has been talked about for a long time but most organisations are still working out how to respond to the opportunities and threats they present. The specific challenges the Pacific faces make appropriate use of open educational resources more urgent and important, and they may be able to lead the world in this area.

However, existence of open educational resources alone will not bring about the necessary new ways of working. Pacific practitioners need to be supported to change, by understanding the potential of the new model, buying into the vision, and then being supported to change their practice by being given new skills and new organisational processes that enable them to use their new skills in a way that fits their contexts. Creating learning material is relatively easy. Changing people's practice is a greater challenge but the key to success.

4. ICT infrastructure and online learning

Pacific countries are very aware of the potential for ICT to tackle education challenges they jointly face. There is also a focus on working together to be most efficient and increase the chances of succeeding.

> The Pacific has problems caused by large distances, small scale and scattered populations and markets, and a low level of investments in telecommunications and human resources. All these problems can be addressed and the development of ICTs accelerated, by selection of appropriate mechanisms for cooperation, market integration and provision of services on a regional basis. (Pacific Islands Forum Secretariat, 2007b, p. 1)

However, it has proven difficult to successfully implement the promise of ICT.

> Numerous studies have highlighted both the potential of, and impediments to, 'ICTs for every Pacific Islander'. The Communication Action Plan (CAP) and Pacific Islands Information and Communications Technologies Policy and Strategic Plan (PIIPP) have recently made clear recommendations on actions required for ICTs to reach potential in the region. However, countries have been less than successful in following these recommendations due to challenges such as scale, institutional capacity and isolation. (Pacific Islands Forum Secretariat, 2007b, p. 2)

Pacific research

The confused message of ICT offering potential for education but proving challenging to implement is repeated across other research. Implementation challenges are technological and financial, but also the result of the need to change systems and processes, and build new skills for staff and students. Individual preferences and cultural and family factors also influence whether face-to-face, online or correspondence delivery is more effective.

A 2007 survey of educational technologists by the Pacific eLearning Observatory at the University of the South Pacific showed 70% tertiary level access to ICT across the region, but between 1 and 11% access for primary and secondary students, with overall access estimated to be 17% (Whelan, 2008). The survey showed a digital divide between urban and rural Pacific populations. All respondents (n=60) saw benefits from ICT for students in the Pacific, but only 15% said ICT was well integrated into their country's education system. The most commonly perceived challenges, identified by more than 90% of the respondents, were lack of adequate financing, lack of skilled personnel, poor access to infrastructure and ICT equipment, low connectivity speeds, and lack of integration of ICT into the curriculum.

Whelan (2008) discussed the survey results in terms of distance education provision using Muilenburg and Berge's (2005) eight barriers to students learning online as a conceptual framework. His comments are summarised below for each of the barriers.

1. '"Barriers that administrators control, such as study materials not being delivered on time, lack of sufficient academic advisors, lack of timely feedback from the instructor"' (p. 65). Use of ICT can, at least in theory, make learning materials, instructor access and timely feedback more accessible. However, this further excludes rural students with lower ICT access.
2. 'Social interaction; it relates to the barriers that "students perceive as being caused by lack of interaction with peers or the instructor, such as the lack of student collaboration online, the lack of social context clues, or their being afraid of feeling isolated in online courses"' (p. 65). Use of ICT requires instructional designers and teaching staff to understand how to improve interactivity and facilitate more relevant and effective collaborative learning experiences.
3. 'Students' perceived "lack of academic skills in such areas as writing, reading or communication"' (p. 66). This is a high barrier to use of ICT in Pacific learning. The more than 13,000 languages in the Pacific region means that English is often the second or third language used by distance students, and needs to be factored into learning design. This also leads to increased plagiarism by University of the South Pacific students. Specific suggestions are forming local, national and regional networks to develop local content using online tools to support collaboration, and translating the learning management system's interface into local languages.
4. 'Their "lack of technical skills such as fearing new tools for online learning, lack of software skills, or their unfamiliarity with online learning"' (p. 66). Survey respondents identified this as a major barrier, especially rural students. Induction and clear interface designs could decrease this barrier.
5. 'Learner engagement in online learning, including the tendency to "procrastinate, choose easier aspects of an assignment to complete, or feel the online learning environment is not inherently motivating"' (p. 66). Whelan suggests that this barrier can be overcome by programme-wide engaging instructional design, noting that the survey suggested ICT may be inherently motivating for Pacific students.
6. 'Support for studies, and "whether a lack of time or support from family, friends, or people in the workplace causes barriers to their online learning"' (p. 67). Mentoring, facilitating and coaching support services can assist overcome this barrier.
7. 'Cost and access to ICT' (p. 67). Solutions involve 'systemic change, top-down policy support, and financial support and planning on a regional basis'. Whelan suggests that the financial benefits in

rural areas are reduced professional development costs and the ability to share higher quality learning materials.

8. 'Technical problems' (p. 67), a factor frequently raised by survey respondents.

Koloto et al. (2006) interviewed New Zealand-based Pacific e-learners to identify critical success factors for, and barriers to, their learning. Critical success factors were:

- access to and knowing how to use computers and the internet
- help from tutors and class members in an environment that is supportive of information technology (IT) use
- attending class and handing in assignments on time
- access to information, learning centres, and other resources
- motivation and self-confidence
- understanding e-learning and course content
- family support
- funds for tuition fees
- individual learning
- time to work on the course online
- good command of English.

(p. 4).

Barriers were:

- lack of understanding of technology and course content
- lack of self-confidence and motivation
- cost and finance
- lack of access to computers
- lack of time management skills
- personal reasons and family commitments
- lack of writing, communication, and English language skills
- lack of physical interaction with and support from tutors.

(page 5).

Hogan (2009) studied effectiveness of distance learning modes used by the University of the South Pacific. Some students preferred correspondence courses and resisted online delivery because they:

- had poor typing skills, especially older learners. However, face-to-face coaching of just 15 minutes led to much greater online interaction
- felt discomfort in interacting with other cultures, but growing comfort as they found that the online forums allowed them to consider their responses
- experienced technical problems; for example, log on, internet speed (even at University of South Pacific campuses in some countries) access outside urban areas, internet costs for personal access
- preferred '*Fiji Time*, which refers to a very slow way of doing things … students said they preferred to take correspondence courses, even when the subject was available in face-to-face or online mode … *Fiji Time* effect is most evident in older students .... This cultural abhorrence toward deadlines, preference to work alone, and reluctance to participate in online discussions are challenges that must be addressed in order to provide quality online courses' (p. 1068)
- preferred to work alone. It was more common for Indian students to prefer to work alone and for indigenous learners to prefer to work in groups.

However, online delivery offered significant advantages over correspondence in delivery time and the time it took to get feedback on assignments. Remote correspondence students were not receiving their course materials until six weeks into the course, and did not get feedback on assignments until the course was over. Online delivery transformed these turnaround times.

Online and correspondence course students both varied in the level of contact they had with their tutors, often because of budgetary constraints. They had lower pass rates than campus-based students. Students in Vanuatu, Tonga and Solomon Islands said it was difficult to study at home with their extended families present.

As well as the implementation challenges above, a further factor for consideration is the general skills that learners develop as they use ICT for education. If these systems are not in place, or those that are in place are not used as much as possible, Pacific countries risk falling further behind in digital literacy and the related vocational skills. However, a challenge in seeking to embrace all that technology offers, is how to maintain each country's culture(s).

> Communication and language changes have occurred because of rapid changes in ICT. There is increased global connectivity but the media are creating a 'cartography of difference' in the Pacific. There are increasing disparities in education; some have access to ICT, while some do not. The question to ask is: How do we handle this 'digital divide'? A more pertinent question for us, however, is: 'How do we decrease the disparities in education in the Pacific that ICT will increasingly create?' Perhaps the most critical issue is what do we have to do to ensure that Pacific children excel in computer or ICT skills while not losing touch with the cultural knowledges of their own people? (Nabobo-Baba, 2007, p. 201)

Meet needs now and build for the future

ICT contexts in the nine Pacific countries that are the focus of this report range from large urban centres with pockets of reliable high speed connectivity, high specification computers and skilled practitioners, through to remote villages with unreliable electricity, no internet access or computers, and little interest in what technology might offer. The Solomon Islands pilot distance learning centres show that significant investment and thinking has not yet come up with a sustainable model for ICT in remote low-population areas of the Pacific. As a consequence, solutions need to recognise this diverse range for the foreseeable future – using non-ICT solutions to cater for the urgent open and flexible TVET needs of remote learners, while implementing ICT solutions to build a base from which the Pacific can be well-positioned to benefit from technology in the future.

Some individuals in each country need to be developing skills in the use of technology. The hope is that, as the infrastructure becomes more affordable and spreads, these pioneers will have developed Pacific-appropriate ways of working, and content that reflects the essence of each country, while incorporating the best that is happening globally. COL can enable this by supporting these individuals through the capacity building activities suggested below.

Where ICT infrastructure is present it needs to be used, especially to deal with postal challenges that hamper the effectiveness of correspondence courses. A possible role for COL is to host an open source learning management system that smaller institutions and non-government organisations could use to support basic online learning. Funding a local administrator to maintain the site and offer some helpdesk support would enable some capacity building for that individual and others.

Existing ICT-based open and flexible TVET in the Pacific appears to be focused on the use of technology to deliver text and image materials, receive assignments and text-based interaction in discussion forums. These are all important uses of the technology. However, ICT's promise of increased efficiency and effectiveness for TVET includes:

- decreased dependence on actual tools and equipment through computer simulations, preferably online to enable tracking by distance so teachers can see how a student is doing
- automated assessment where possible to give formative feedback to learners through their learning experience and to decrease dependence on qualified teachers to mark summative assessments
- support for local, relevant assessment; for example, a video captured on a mobile phone or simple video recorder, showing an apprentice completing a task, which is validated, and sent to an assessor. Similarly, audio recordings or audio discussion forums can enable oral assessment that assesses knowledge rather than ability to write essays.

A possible role for COL is to source or design and develop these types of learning experiences and work with practitioners to include them in their delivery, and learn together so that Pacific practitioners grow in their understanding of how they can be useful in their context. Once an effective model is up and running, COL can work with those on the ground to share the stories.

Two technologies that are relatively widespread in the Pacific are radio and mobile phones. A possible role for COL is to fund a pilot project for a priority TVET subject in remote areas. The project would design, develop, deliver, evaluate and improve a distance learning experience using these two technologies and print materials.

5. Capacity building

Respondents agreed that the nine countries lack suitably qualified TVET instructors, and some noted the potential for open and flexible learning to fill skill gaps in other education sectors. Advantages are that teachers can learn on-the-job where they are based, and learn through good modelling how to teach and learn using open and flexible methods. If ICT tools are used, learners can become confident with the tools and understand their potential as they work with them to learn. As discussed elsewhere, resource-based approaches can enable a small number of skilled individuals to have an impact on a wider group. This is further amplified when ICT is used to support tutor-learner and peer-peer interaction over distance, and to capture these group interactions so that others can also learn from them.

Open and flexible TVET training

COL has existing open education resources that support someone to facilitate workshops to build capacity in TVET (http://www.col.org/resources/crsMaterials/Pages/TVET.aspx) and in ODL (http://www.col.org/resources/crsMaterials/VUSSCcrsMat/Pages/TrainEd.aspx; http://www.col.org/SiteCollectionDocuments/Introducing_Distance_Education.pdf). Similarly, the National University of Samoa has an established face-to-face programme for training TVET teachers, and in-house capability in distance learning. A possible role for COL is to fund the design, development, piloting and evaluation of an open and flexible learning experience that develops teachers' capacity in TVET, including open and flexible approaches. Much of the content will be available from the above three resources, or the existing programme, with the focus being on using distance learning.

The project would need to decide how much to use ICT. As discussed above, ICT offers significantly enhanced distance learning for the Pacific and there is a desire to better understand its potential. However, a reliable ICT infrastructure is unavailable to many who would benefit from the programme and to their learners. An appropriate balance for COL could be to design three modules:

TVET, ODL, and ICT-enabled TVET. The first two would not require ICT access, but the third one could model good use of various ICT tools. Individuals could self-select to do the third module if they had access to reliable ICT infrastructure, so the region as a whole is not held back while acknowledging the reality of technological limitations for many. These resources would also be available beyond the Pacific.

COL has a pilot model for developing expertise in instructional design for open and flexible TVET. The basic trades courses were developed using a mentoring model in which experienced instructional designers from the Open Polytechnic worked in the Pacific with local educators to carry out a needs analysis. The Pacific educators then visited New Zealand for a couple of weeks to work with the instructional designers on design and development of the materials. Finally, the pairs reunited in the Pacific to confirm suitability of their materials for the local setting and finish the capability building. Attendees at the June 2011Wellington workshop reviewing the literacy and numeracy pilots of the trades resources thought this could be a good model for developing ODL expertise in their countries. It would be useful to interview the Pacific educators involved in the previous project and understand how much those trained then used their skills or passed them on, and build on the learning from that project for future capability building.

Maximise Pacific expertise

COL has been working to develop open and flexible TVET capacity in the Pacific for many years. As a result there are a number of people in the Pacific with relevant expertise. As much as possible, COL should work with these people so that:

- solutions recognise Pacific culture, values, languages and context
- the existing Pacific expertise is valued and honoured and celebrated
- the existing Pacific expertise is increased through cross-pollination of ideas and building a strong network of practitioners who are focused on building expertise in others
- a culture of knowledge sharing and locals building one another's capacity develops, rather than waiting for the expert to return and run another workshop.

Where COL and the local expert(s) believe an external person would add value, the external people should be chosen on the basis of their expertise and respect for the Pacific and work closely with the local people to achieve the same benefits as above.

Mentoring and communities of practice

For TVET experts with access to ICT, various online tools can support effective distance mentoring and online communities of practice. COL could consider supplementing their present capacity building activities – open education resources, workshops, and an online Pacific TVET community on Basecamp – with online mentoring and targeted community of practice pilots. These activities are only as good as the time individuals are willing or able to contribute. However, in the author's experience, both models have proved successful when building on an initial face-to-face meeting, focused on a felt need for an agreed period of time, and when staff time is paid for.

Mentor/mentee partnerships could link two practitioners in the same country or in different Pacific countries or bring in targeted external expertise. Mentoring arrangements in which the 'expert' is 'hidden' helps promote local expertise while ensuring individuals feel adequately supported and can still benefit from outside advice as and when they want it.

Local capacity building approaches mean skills are more likely to remain in the Pacific, rather than be lost as can happen when individuals leave to study in another country and choose to stay there. Distance learning plus a short internship or study tour can expose learners to new ways of doing

things without becoming too settled in the new country. COL's experience in seconding Pacific individuals to work alongside an expert, for example in New Zealand, has proven successful.

Support PATVET website

This report has suggested hosting materials on the COL website to link to the global community COL serves and hopefully maximise their use. However, there are advantages in having a local website with a Pacific flavour and increased ownership. COL could work with PATVET to further develop their website, with links to COL-hosted materials, and better share knowledge. Several interview respondents commented on lack of knowledge of what was happening elsewhere. Although websites alone will not achieve this, they can, however, better inform a connected community through having material available and being able to share links.

Global connections

Technology offers the potential to decrease isolation for Pacific practitioners. Social networking tools, such as RSS readers, Twitter, Facebook, Flickr, SlideShare, Delicious and Google Translate, mean that any person with internet access can connect to experts anywhere in the world. This takes time and new ways of working by individuals. However, COL could build capacity in using these tools to enable Pacific practitioners to build their personal learning networks and think about how to connect to the world for their ongoing professional development.

6. Work-based training

More flexible work-based delivery options offer the potential for greater employer involvement through workplace attachments and on-the-job training. Also, these can be more up-to-date and relevant because the learner is in a workplace. However, in the Pacific this may be a challenge outside the urban areas. Remote areas, often the areas in need of innovative upskilling in TVET, may lack the economic infrastructure to provide jobs, or offer the full range of work opportunities necessary to achieve the full qualification. They also may not be keeping up with recent advances in their industry.

A possible role for COL could be to pilot industry training with a selected industry in remote areas in need of training. The pilot would work with industry to define the standards, and the programme design would assume on-the-job training, supported by well-designed learning materials to teach selected parts of the programme, appropriate academic and learning support, relevant assessment methods, and mentoring for employers to understand the model and work within it to train the trainee. Where relevant (for example, in fishing) the pilot can build on proven face-to-face programmes that the Secretariat of the Pacific Community already offer (Jenny Williams, personal communication). Such a pilot would then be able to be evaluated and good practice shared across the Pacific to build wider understanding of work-based training and further develop models that would work in the Pacific.

7. Status of open and flexible TVET

TVET has traditionally been perceived in the Pacific as a second-rate choice for learners, rather than as giving a crucial set of skills to make a learner employable in the twenty-first century knowledge economy. Government policy is now acknowledging the importance of TVET but it takes longer to change the community and individual perception.

Similarly, ODL has traditionally been viewed as second-rate, in part because of perceived increased opportunities for fraud, and in part because of lower success or satisfaction rates for learners in some studies, such as Whelan (2008) quoted above. However, research suggests that when compared to campus-based experiences, distance learning is not significantly different (Russell, 1999; also see http://www.nosignificantdifference.org/). Other factors, such as, learning design,

learner motivation and academic and pastoral support are more influential than the mode of delivery.

However, perceptions determine choices, and open and flexible TVET will only play an important part in workforce development in the Pacific if industry, communities, parents and learners believe that ODL approaches are valid and valuable.

A possible role for COL would be to work with PATVET, who have a goal to promote career opportunities for TVET, to develop marketing materials targeting schools, parents, communities and industry with a user's guide to assist PATVET members customise and use them effectively. These marketing materials can also include stories of how ODL opportunities are increasingly being used globally and how they have transformed individuals' lives.

Conclusion

In considering where COL might invest its limited resources, a number of competing priorities emerged:

- community, national or regional
- leadership and planning or practitioners
- people or learning materials
- ICT or print or other technologies
- capacity building or awareness raising or promotion
- TVET providers or industry or learners or communities
- small and instantly achievable or large and transformative system-wide.

These tensions exist because they are all important. Open and flexible TVET sits within complex education and labour systems, populated by a range of people with differing priorities, experiences and perspectives. As a result, this report does not prioritise the possible roles proposed, but puts them all forward within a context that aims to help COL and other readers understand how each action might add value. The hope is that COL and others will be inspired to act and together tackle the challenging, important and urgent task of better equipping the present and future workforce of the Pacific.

References

All online references downloaded May 2011

Abbott, M. (2000). The development of vocational education and training in New Zealand. Education Research and Perspectives, 27(1).

Anderson, B., Brown, M., Murray, F., Simpson, M., & Mentis, M. (2006). *Global picture, local lessons: E-learning policy and accessibility.* Retrieved from http://cms.steo.govt.nz/NR/rdonlyres/C1EBB9EB-9122-4F82-94BB-A713CDEE9D02/0/AndersonFinalReport.pdf

AusAID. (2009). *Annual program performance report: Republic of Kiribati 2008.* Retrieved from http://www.ausaid.gov.au/publications/pdf/appr-08-kiribati.pdf

Australian Council for Educational Research. (2010). *Evaluation of One Laptop Per Child (OLPC): Trial project in the Solomon Islands.* Retrieved from http://wiki.laptop.org/images/0/0b/SolomonIslandsOLPCTrialsEvaluationByACER2010.pdf

Boeha, B., Brady, P., Gorham, A., & Johanson, R. (2007). *Technical-vocational skills development in Papua New Guinea.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=36

Brady, P., Ereata, T., & Gorham, A. (2007). *Technical-vocational skills development in Kiribati.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=39

Brady, P., Gorham, A., Johanson, R., & Naisele, E. T. (2007). *Technical-vocational skills development in Fiji.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=35

Brady, P., Gorham, A., Johanson, R., & Vira, H. (2007). *Technical-vocational skills development in Vanuatu.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=40

Commonwealth of Learning. (n.d.). *Defining open and distance learning.* Retrieved from http://www.col.org/resources/Pages/default.aspx

Day, B. (2008). *Evaluation of DLC Project: Final Report Version 2.0*. Unpublished manuscript.

DFID. (2007). Technical and vocational skills development: a DFID practice paper. Retrieved from http://www.unevoc.net/fileadmin/user_upload/docs/technical-vocationalDFID.pdf

Edmond, E., Logha, J., Thomas, V., & Hageleisa, P. (2009). TVET for self-sufficiency, self-reliance and self employment. In E. Tokai and J. Teasdale (Eds.), *Pacific Education Series No. 7, The role of TVET in Pacific secondary schools: New visions, new pathways.* Suva, Fiji: Institute of Education, University of the South Pacific. Retrieved from http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Workplans_and_Reports/Paper_and_publications/TVETbook.pdf

E-Learning Advisory Group. (2002). Highways and pathways: Exploring New Zealand's e-learning opportunities. Wellington: Ministry of Education. Retrieved from http://cms.steo.govt.nz/NR/rdonlyres/3B455FA8-586B-447B-A239-75C523841021/0/highwaysandpathways.pdf

Fiji Ministry for Education, National Heritage, Culture, Arts, Youth and Sport. (2009). *Education sector strategic plan, for 2009-2011*. Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/fj27.dir/doc.pdf

Flexible Learning Advisory Group. (2007). *2008-2011 Australian flexible learning framework strategy.* Retrieved from http://www.flag.edu.au/system/files/2008_2011_Framework_Strategy.pdf

Fua, S. (2005). Educational planning in the Pacific: a way forward. In P. Puamau & B. Teasdale (Eds.) (2005), *Educational planning in the Pacific: Principles and guidelines.* Retrieved from http://www.usp.ac.fj/index.php?id=planning

Goozee, G. (2001). *The development of TAFE in Australia* (3rd ed.) Leabrook, Australia: National Centre for Vocational Education Research Ltd.

Grundler, B. (2007). *Technical-vocational skills development in Nauru.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=38

Ham, V. & Wenmoth, D. (2007). *Evaluation of the E-Learning Collaborative Development Fund.* Retrieved from http://www.tec.govt.nz/Documents/Forms%20Templates%20and%20Guides/eCDF-evaluation-report.pdf

Hartl, M. (2009). Technical and vocational education and training (TVET) and skills development for poverty reduction – do rural women benefit? Retrieved from http://www.fao-ilo.org/fileadmin/user_upload/fao_ilo/pdf/Papers/25_March/Hartl-formatted_01.pdf

Hogan, R. (2009). Attitudes of indigenous peoples toward distance learning in the South Pacific: An empirical study. In G. Siemens & C. Fulford (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 1064-1072).

Holman, P., Devane, T. & Cady, S. (2007). *The change handbook: The definitive resource on today's best methods for engaging whole systems.* CA, USA: Berrett-Koehler Publishers Inc.

Hutak, M. & Thomson, I. (2010). The role of ICTs in teaching and learning: Best practice in Pacific education. In P. Puamau, & B. Hau'ofa (Eds.), *Pacific Education Series No. 9, Best practice in Pacific education: Learning with PRIDE.* Suva, Fiji: Institute of Education, University of the South Pacific.

ICT Regulation Toolkit. (2011). *Distance learning using VSATs in the Solomon Islands.* Retrieved from http://www.ictregulationtoolkit.org/en/PracticeNote.aspx?id=3179

Johanson, R., Brady, P., Gorham, A., & Voigt-Graf, C. (2008). *Skilling the Pacific: Technical and vocational education and training in the Pacific.* Retrieved from http://www.adb.org/Documents/Books/Skilling-Pacific/Skilling-Pacific.pdf

Joo, L. (2011). *TVET issues and facts.* Retrieved from http://info.worldbank.org/etools/docs/library/243625/bTVET%20Issues%20and%20debates.pdf

Kiribati Ministry of Education. (2008). *Ministry of Education strategic plan 2008 – 2011*. Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/kir008.dir/doc.pdf

Koloto, A. H., Katoanga, A. N., & Tatila, L. U. (2006). Critical success factors for effective use of e-learning by Pacific learners. Retrieved from http://akoaotearoa.ac.nz/download/ng/file/group-996/n4006-critical-success-factors-for-effective-use-of-e-learning-by-pacific-learners.pdf

Lemming, D. (2007). The islands of wisdom (and learning): The role of ICT and distance mode in education reform in Solomon Islands: the case of the distance learning centres project. Retrieved from http://paddle.usp.ac.fj/cgi-bin/paddle?e=d-010off-paddle--00-1--0---0-10-TX--4-------0-11l--11-en-50---20-fsm---00-3-1-000--0-0-11-0utfZz-8-00&a=file&d=pifs047

Lene, P.T. (2007). *Technical-vocational skills development in Samoa.* Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=37

Maclean, R. (2009). The importance of secondary education and TVET. In E. Tokai and J. Teasdale (Eds.), *Pacific Education Series No. 7, The role of TVET in Pacific secondary schools: New visions, new pathways.* Suva, Fiji: Institute of Education, University of the South Pacific. Retrieved from http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Workplans_and_Reports/Paper_and_publications/TVETbook.pdf

Mead-Richardson, A. & Rumble, G. (2009). *The Solomon Islands distance and flexible learning policy and medium-term strategic framework: Background issues and report*. Unpublished manuscript.

Nabobo-Baba, U. (2007). Teacher education for new times. Reconceptualising pedagogy and learning in the Pacific. In Puamau, P. (Ed.), *Pacific Voices – Teacher Education on the Move.* Retrieved from http://www.usp.ac.fj/index.php?id=pac_voices

Natau, J., Borja, T., Pangelinan, Z. & Lafolua, S.M. (2009b). Bridging between school and TVET and school and work. In E. Tokai and J. Teasdale (Eds.), *Pacific Education Series No. 7, The role of TVET in Pacific secondary schools: New visions, new pathways.* Suva, Fiji: Institute of Education, University of the South Pacific. Retrieved from http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Workplans_and_Reports/Paper_and_publications/TVETbook.pdf

Natau, J., Naisele, E., & Rabici, V. (2009a). Case Study 1: Fiji. In E. Tokai and J. Teasdale (Eds.), *Pacific Education Series No. 7, The role of TVET in Pacific secondary schools: New visions, new pathways.* Suva, Fiji: Institute of Education, University of the South Pacific. Retrieved from http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Workplans_and_Reports/Paper_and_publications/TVETbook.pdf

Nauru Department of Education and Training. (2008). *Footpath II: Education and training strategic plan 2008 - 2013.* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/nau006.dir/doc.pdf

Neal, T. (2008). *International effective practice for distance and flexible education: An investigation of 22 network examples from Australia, North America and Europe*. Unpublished manuscript.

Open Educational Quality Initiative. (2011). *OEP Guide: Guidelines for open educational practices in organizations*. Retrieved from http://opal.innovationpros.net/wp-content/uploads/2011/03/OPAL-OEP-guidelines.pdf

Pacific Islands Forum Secretariat. (2007a). The Pacific plan for strengthening regional cooperation and integration. Retrieved from http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific_Plan_Nov_2007_version.pdf

Pacific Islands Forum Secretariat. (2007b). The Pacific plan for strengthening regional cooperation and integration: Pacific regional digital strategy. Retrieved from http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific%20Regional%20Digital%20Strategy.pdf

Pacific Islands Forum Secretariat. (2009a). Forum education ministers' meeting: Session five: Regional support to technical and vocational education & training (TVET) – A progress report. Retrieved from http://forum.forumsec.org/resources/uploads/attachments/documents/FEDMM%2009%20TVET%20Progress%20Report.pdf

Pacific Islands Forum Secretariat. (2009b). The Pacific education development framework (PEDF) 2009-2015. Retrieved from http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific%20Education%20Development%20Framework%202009-2015.pdf

Papua New Guinea Department of Education. (2005). *Achieving a better future: A national plan for education 2005- 2014.* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/png040.dir/doc.pdf

PATVET. (2007). *Pacific Association of Technical and Vocational Education and Training strategic plan 2007-2011*. Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=1&Itemid=46

PATVET. (2009). PATVET consultative meeting of stakeholders in TVET & panel discussion on the theme: The Pacific plan – Regional developments and job creation. Retrieved from http://www.spc.int/PATVET/index.php?option=com_docman&task=doc_download&gid=34

Phillips, I., Aspin, M., Hull, D. and Oxley, C. (2004). Evaluation of the Australian Flexible Learning Framework 2000-2004. Retrieved from http://pre2005.flexiblelearning.net.au/aboutus/resources/evaluationreportfinal0604.pdf

Puamau, P. (2005). *Rethinking educational reform: A Pacific perspective.* Retrieved from http://www.paddle.usp.ac.fj/cgi-bin/paddle?e=d-0paddle--00-1-0---0-10-TX--4------0-11l--1-en-50---20-home---00031-000-1-0utfZz-8-00&a=file&d=pride013

Robbins, C. (2006). Providing cultural context with educational multimedia in the South Pacific. Educational Technology & Society. 9(1), 202-212.

Russell, T. (Ed.). (1999). *The no significant difference phenomenon: As reported in 355 research reports, summaries and papers*. North Carolina: North Carolina State University.

Samoa Ministry of Education, Sport and Culture. (2006). *Strategic policies and plan July 2006 – June 2015.* Retrieved from http://www.mesc.gov.ws/pdf/spp_web.pdf

Samoa Ministry of Education, Sport and Culture. (2007). *Education for All: Mid-decade assessment report: Samoa 2007.* Retrieved from http://www.mesc.gov.ws/pdf/efa_web.pdf

Solomon Islands Ministry of Education and Human Resources Development. (2007a). *Education strategic framework 2007-2015*. Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/sol031.dir/doc.pdf

Solomon Islands Ministry of Education and Human Resources Development. (2007b). *National Education Plan 2007-2009.* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/sol014.dir/doc.pdf

Teasdale, G.R. (2009). Introduction: New visions, new pathways. In E. Tokai and J. Teasdale (Eds.), *Pacific Education Series No. 7, The role of TVET in Pacific secondary schools: New visions, new pathways.* Suva, Fiji: Institute of Education, University of the South Pacific. Retrieved from http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Workplans_and_Reports/Paper_and_publications/TVETbook.pdf

Tonga Ministry of Education. (2004). *Tonga education policy framework 2004-2019* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/ton005.dir/doc.pdf

Tuvalu Department of Education. (2006). *Tuvalu Department of Education strategic plan 2006-2010.* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/tuv003.dir/doc.pdf

Twigg, C. (2005). *Course redesign improves learning and reduces cost*. Retrieved from http://www.highereducation.org/reports/pa_core/core.pdf

UNESCO. (2006). *Participation in formal technical and vocational education and training programmes worldwide: An initial statistical study.* Retrieved from http://info.worldbank.org/etools/docs/library/243595/bparticipation%20in%20formal%20TVET%20worlwide.pdf

UNESCO. (2008). *Fact sheet: Vocational education and training: A come-back to the development agenda?* Retrieved from http://unesdoc.unesco.org/images/0016/001631/163179E.pdf

UNESCO and ILO (2002). *Technical and vocational education and training: Recommendations from UNESCO and ILO, 2002.* Retrieved from http://unesdoc.unesco.org/images/0012/001260/126050e.pdf

Vanuatu Ministry of Education. (2006a). Policy for open and distance learning: A picture of success. Retrieved from

http://www.usp.ac.fj/fileadmin/files/Institutes/pride/Subprojects/ODL_Policy_March_16_2006_draft.pdf

Vanuatu Ministry of Education. (2006b). *Vanuatu education sector strategy 2007-2016.* Retrieved from http://paddle.usp.ac.fj/collect/paddle/index/assoc/van019.dir/doc.pdf

Whelan, R. (2008). Use of ICT in the South Pacific: Findings of the Pacific eLearning Observatory. *Distance Education, 29*(1), 53-70.

Appendix One: Interview guide

Consultation on current and future open and flexible technical vocational education and training (TVET) in the Pacific region

The Commonwealth of Learning (COL) has contracted the Open Polytechnic of New Zealand to explore the current state and likely future of open and flexible TVET in the Pacific region. The overall aim of the research is to see where and how COL might be able to add value to the strategies and initiatives already underway.

To date we have reviewed government policy documents and the Asian Development Bank TVET reviews for each country. We recognise the progress that is being made in the Pacific and the length of time it takes to implement TVET strategies. We are particularly interested in understanding what is working, what barriers you have found, and any advice for COL. We are, therefore, talking to you to gain your perspective on the questions below.

1. What from your strategy has been implemented in TVET?
    a. How is your strategy being implemented and how widely?
    b. What has worked well?
    c. What barriers do you see?
2. What from your strategy has been implemented in distance, open and flexible learning?
    a. How is your strategy being implemented and how widely
    b. What has worked well?
    c. What barriers do you see?
    d. How would you describe the ICT status of your country?
3. What would it have been helpful to have known before implementing your strategies?
4. What advice would you give to other countries implementing similar strategies?
5. What, if any, role could you see COL playing to support Pacific nations in open and flexible TVET?
6. Any other comments?

Thank you very much for your thoughtful input.

Appendix Two: Summary of TVET by country

Country statistics retrieved from http://paddle.usp.ac.fj/
Other information from Brady, Ereata, & Gorham (2007); Brady, Gorham, Johanson, & Naisele (2007); Brady, Gorham, Johanson, & Vira (2007); Grundler (2007); Boeha (2007); Lene (2007); and Johanson et al. (2008); personal communication Secretariat of the Pacific Community; interview and survey results
TVET providers based on TVET qualifications information retrieved from
http://www.spc.int/PATVET/index.php?option=com_content&task=view&id=18&Itemid=41

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
Fiji Land area – 18,272 sq km. Population estimate – 839,324 (2008). TVET Funding 4% of Vote Education, user fees, i.e. 55% of Fiji Institute of Technology's (FIT) income from student fees; TPAF (Training and Productive	All secondary schools (nearly all run by non-government agencies, government funded salaries) offer pre-vocational courses in Forms 3 and 4. However, can be poorly equipped and unclear how effective it is. 62 attached vocational centres created in 2006 to provide alternative path for students. Some franchise TPAF trade qualifications. AusAID ran an Educational Enterprise pilot for over 1900 students in 58 schools (primary, secondary and some vocational centres) (2004-8). 77% of the enterprises are continuing.	Fiji Institute of Technology (7600 EFTS) – main provider in Fiji, Pacific leader, franchises enable study at a distance in Fijian secondary schools. Insufficient practical training. Private and public funding. Challenges with quality assurance. AusAID supported nine vocational schools to offer FIT franchised courses and improved links to industry (2004-8). Australian Pacific Technical College. Approximately 50 private training providers offering computing and business courses, and a few specialist providers offering aviation, beauty and hairdressing, and tourism and hospitality courses.	TPAF (20,000 trainees in 2007, 120 complete per annum) – strong organisation, industry actively involved in advisory groups. TPAF organise apprenticeship training and trades testing efficiently. Work attachments are common as integral parts of training, afternoon and evening classes for employed students. Private and public funding. Inadequate provision in the rural areas. Tutu Vocational Training Centre – 3-year agriculture course – half residential and half home-based. Success factors include support of parents, villagers, provincial agriculture departments; staff quality and commitment. 90% of trainees farming efficiently in their villages.	In 2007 – no apex training authority to set training standards with industry, develop training policies, accredit training providers, help providers meet the standards, and regularly review the standards. TPAF does some of this role. Recently, established TVET Advisory Board with stakeholders and industries as members. Plans to create Fiji National University from existing institutions – 3 Fiji Schools of Medicine, Nursing, and Agriculture; Fiji College of Advanced Education; Lautoka Teachers College; Fiji Institute of Technology. A key aim is to

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
Authority of Fiji) funded through 1% industry levy and student fees.	PRIDE project to develop TVET curriculum for secondary schools. New courses, better integration of existing courses. Development of Cultural Technology to enhance indigenous knowledge systems and creative industries – but limited progress due to funding constraints.	Montfort Boys' Town Technical Institute has high success rate. Seems to be over-dependence on long-term, institution-based training.	Advanced Vocational Training programme – one-week business and life skills courses – using vocational centres. Various other training programmes – government and non-government Established and expanded TVET Quality Vocational Centres – i.e. by May 2011, 6 vocational centres out of the 20 earmarked for this project have been helped with infrastructure, equipment and facilities, including computers. Quality Vocational Centres are trialling the competency-based curriculum which is aligned to the National Qualification Framework.	minimise the perception that TVET is inferior to higher education. In 2007, began activity to create a national qualifications framework. Students now able to complete competency-based levels 1 and 2 qualifications at school before proceeding to tertiary. Scholarships – helping TVET teachers to upskill. Brochures, posters, flyers etc to promote TVET as a desirable option. Quality assurance mechanism for TVET in progress.
Kiribati Land area – 811 sq km, 33 islands.	24 junior secondary schools, many on outer islands, offer some training, e.g. gardening Poor equipment and low	Kiribati Institute of Technology (KIT), used to be Tarawa Technical Institute (110 full-time, 400 part-time students) – little industry involvement in course planning.	Informal TVET is primarily irregular outreach programmes from the main centre to outer islands, organised by various government agencies, church groups and non-	TVET system relatively responsive to industry and community needs by the level of flexibility in the way training and recognition is

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
Population estimate – 53,236 (2008). TVET Funding – 3% of education budget goes to Kiribati Institute of Technology (KIT), but other Ministries support other forms of TVET, often from donor funding.	teacher skills. Equipment needs to be shipped to and from the outer islands.	Single campus in south Tarawa. Staff:student ratio 1:9. AusAID project 2008-15 – develop Kiribati Institute of Technology and other providers. Extension centre for University of South Pacific. Ministry of Labour and Human Resource Development funded: Marine Training Centre (150 EFTS) Fisheries Training Centre (33 EFTS) National Skills Testing System – five trade areas National Apprenticeship Board co-ordinates apprenticeships Other Ministry funded: Kiribati National Tourism Office School of Nursing	governmental organisations. Training is primarily to develop small business or build the capacity of local organisations. Agriculture Division trains extension officers on 21 of the 33 islands, who then train locals. KIT offers short courses on outer islands – demand is greater than KIT has capacity to deliver. Learning Centres project (EU funded) aimed to create learning centres on the islands supported by the then Tarawa Technical Institute. Stalled due to lack of government and local support. Ministries of Internal and Social Affairs and Commerce, Industries and Cooperatives also run ad hoc training on islands. Kiribati Association of Non-Government Organisations (KANGO) – 40 members in 2006 offer targeted training.	provided. No training in many technical areas because of low numbers. Limited access to training in outer islands because of logistical problems. No national training mechanism to prioritise needs and set skill standards. No review of labour market and community needs or tracking of graduate destinations. No national qualifications framework. Various donor projects. Key is to develop sustainable models.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
			11 rural training centres in early 1990s but none functioning by 2002.	
Nauru Land area – 21 sq km. Population estimate – 10,163 (2008). Education funding – 2007 – 22% from Nauru, rest from AusAID and NZAID, est. 6% for TVET.	Nauru Secondary School, new in 2008, up to year 13. AusAID supported building of the TVET facility within the secondary school – manufacturing (clothing and textile, and woodwork), hospitality, construction and engineering. Nauru College, a Catholic-run secondary school, the only other high school, up to year 10, i.e. basic woodwork, basic technical drawing, cooking and sewing. In 2009, Australian Pacific Training Centre aligned Nauru school TVET courses against Australian Certificates to assist articulation. 2010, current TVET programmes in formal schools started and are perceived to be progressing well.	Nauru Vocational Training Centre, burnt down in 2001, planned to be replaced by Learning Village in 2009. University of South Pacific Nauru centre. Trade testing gives opportunity to acquire a Trade Certificate. Introduction of traditional knowledge and skills into formal TVET in 2007. 2007 – plans to offer FIT courses. Current TVET programmes are seen to be quite limited compared to the former Nauru Trade School programmes, e.g. no longer training offered in refrigeration and conditioning which former trade school attendees found useful. Nauru relies on foreign aid to assist with their plans for a specialist TVET institution.	Appears to be little or no informal TVET.	Present TVET system not able to meet local demand. Heavily dependent on donor funding. Basic TVET curriculum framework. Poor physical infrastructure, low perception of TVET, gender inequality, poor quality, high drop-out rate. Low industry involvement, weak private sector. Industry not recognising the Nauru qualifications, which most workers in their late 20s or older have. Those undertaking industry apprenticeships are sent overseas for formal training. Most Nauruans are not coping well with English as the language of instruction.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
Papua New Guinea Land area – 462,840 sq km, 600 islands. Population estimate – 6,473,910 (2008). TVET funding 6.4% of Vote Education (4.6% for vocation centres and 1.8% for technical colleges).	About 130 vocational centres (VCs) enrolling 18,700 students in 2003. Offer 2-year courses for graduates from Years 8 and 10, but moving to offer short courses as well. Being converted to vocational high schools to offer alternative non-academic route.	A few vocational and technical high schools, seven technical and business colleges, enrolling 2,700 students, i.e. Port Moresby Technical Port Moresby Business Goroka Business Mt Hagen Technical Lae Technical Madang Technical Kokopo Business PNG Maritime College. University of Technology – some diplomas – can credit towards a degree. Central TVET institutions tend to be poorly managed with limited access to management training, low accountability and limited awareness of the costs of their services or their markets. A well developed system of apprenticeship training. A growing training market of private providers (103 in 2007). Australian Pacific Technical College	Some infrastructure to support the informal training, i.e. a national resource directory listing the 172 informal training providers, an informal training sector manual and the Informal Sector Development and Control Act. Over 300 government, private, faith and non-government organisations. No dedicated network. Donor programmes focusing on short-term, flexible training programmes.	National Training Council for coordination and quality assurance. National Apprenticeship and Trade Training Board for standards setting, testing and apprenticeship – standards setting and skills testing is exemplary in the Pacific. The National Department of Education has a specific TVET Division. Many instructors with industry experience. Mixed funding between public, private and parents.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
		campus.		
Samoa Land area – 2,935 sq km, 9 islands. Population estimate – 179,645 (2008).	TVET also offered as practical subjects at secondary schools (25 delegated). AusAID 2009-13 project – improve TVET in selected schools – emphasis on Samoa Qualifications Authority (SQA) and industry accreditation, and workplace experience and assessment.	Institute of Technology at National University of Samoa (previously Samoa Polytechnic, three schools i.e. Business and General Studies, Engineering, Maritime) – only public provider. AusAID 2009-13 project – support industry training through NUSIOT and SATVETI (Samoan Association for Technical and Vocational Education Training Institutes), e.g. review delivery models, teacher development, sustainable model for equipment maintenance, qualification links with Australian Pacific Technical College (APTC). Australian Pacific Technical College campus. Don Bosco Technical School (Catholic) Laumua o Pona Oa Technical School (Methodist) Uesiliana Technical School Leulumoega School of Fine Arts Smaller providers Beautiful Expression of	Samoa Umbrella for Non Government Organisations (SUNGO). Second Chance Education and Community Learning Centre Initiatives – various projects. Pilot learning centre at primary school in Moataa.	SATVETI – a national organisation now established that is committed to developing effective TVET for Samoa. Key strategy since began in 2001 has been TVET teacher training across members. 2005 – Samoa Qualifications Authority. Apprenticeship Council offers apprenticeships – run by Ministry of Commerce, Industry and Labour. Industry Advisory Panels for NUSIOT, stakeholders also attend 'develop a curriculum' meetings. Annual labour market surveys.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
		Nature's Academy Loto Taumafai Education Centre University of South Pacific offers Cert in Tourism Studies		
Solomon Islands Land area – 28,370 sq km. Population estimate – 517,455 (2008).		Solomon Islands College of Higher Education (SICHE) established under the College of Higher Education Act 1984 by amalgamating the Solomon Islands Teachers College, Honiara Technical Institute and the Solomon Islands School of Nursing – largest tertiary institution in the Solomon Islands. Don Bosco Technical School.	32 rural training centres of SIARTC (Solomon Islands Association of Rural Training Centres) – offer various certificates that are not accredited externally. NZAID and EU (SWAP) 2008-13 project to work with SIARTC on stronger rural TVET – curriculum development, teacher training, TVET policy, greater recognition of TVET, e.g. increased teacher salaries, investment in vocational rural training centres.	Large World Bank project to tackle unemployment – Honiara based. Challenges – teacher capacity, standard TVET curriculum, coordination of TVET between various providers and stakeholders, lower status of TVET system.
Tonga Land area – 650 sq km. Population estimate – 102,724 (2008).		Main providers are: Tonga Institute of Higher Education Tonga Institute of Science and Technology Tonga Maritime Polytechnic Institute Tupou Tertiary Institute Unuaki'-o-Tonga Royal		Tonga National Qualifications and Accreditation Board AusAID and NZAID project 2009-12 to develop the national training system, promote demand driven training and strengthen institutions.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
		University of Technology. 'Ahopanilolo Technical College Smaller providers are: Atenisi Institute Faith Seminary Hango Agricultural College Montfort Technical Institute St Joseph's Business College		
Tuvalu Land area – 26 sq km. Population estimate – 9,729 (2008)	AusAID 2009-13 project – introduce Form 5 vocational option Motufua Secondary School; work through the primary schools and Community Training Centres to offer TVET alternative for Year 8 repeaters.	Tuvalu Maritime Institute offers maritime qualifications. MKH Typing and Computing offer two certificates – typing and secretarial skills.	Tuvalu Association of Non-Government Organisations (TANGO). AusAID project to develop Community Training Centres to train adults and out-of-school youth.	
Vanuatu Land area – 12,190 sq km. Population estimate – 233,026 (2008).	Eight secondary schools offer practical courses in their curriculum. Two of the eight, private Catholic schools, give more concentrated vocational training.	Vanuatu Institute of Technology (VIT) (500 EFTS), plus two new VIT Provincial TVET Centres being established in Luganville and Tanna. Moved to modular, competency-based training and assessment in late 1990s.	Non-governmental organisations and the private sector run 37 (in 2006) rural training centres with minimal public support. They struggle financially and give uneven geographical coverage (2000 EFTS). Poor equipment in rural centres, lack of capacity to deliver rural skills	Vanuatu National Training Council, a national qualifications framework and registration/ accreditation of institutions and programmes. Extensive involvement of non-government organisations and willingness of parents to pay for skills training.

Country	Formal TVET		Informal TVET	Comments on other TVET elements
	Secondary school	Specialist TVET institutions		
TVET funding – 6% of education spending (from Votes Education and Youth Development and Training).		Vanuatu Institute of Education. Vanuatu Maritime College. Vanuatu Agricultural College. Australian Pacific Technical College Campus.	in the provinces – whether through secondary schools or rural training centres, despite agriculture being a government priority. Tend to offer 2- to 3-year, fee-generating programmes, rather than short, less costly, skill development courses linked to local income-generating opportunities. Some Centres are part of a parent group Vanuatu Rural Development and Training Centres Association. Projects have included – modularising curriculum, trainer skills development, developing training materials. AusAID 2009-2013 project to build provincial TVET Resource Centre model and replicate across further provinces, and TVET graduate ambassadors to publicise and promote TVET in schools. Plans to add the rural centres' qualifications at the lowest level of the Qualifications Framework.	Industry advisory committees exist but low industry involvement in qualifications development. No formal apprenticeship training. Variable quality. Graduate tracer study in 2004 and 2005 showed nearly 70% employed. Brady, Gorham, Johanson, & Vira (2007) recommend a focus on building the capability of the rural focused TVET providers – formal and informal.