# On the digital divide: role of the University of the South Pacific in enhancing education in the Pacific countries

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ABSTRACT: The initiatives for the use of information and communications technology (ICT) by the University of the South Pacific (USP) have a singular goal of bridging the gaps within and between South Pacific islands. Only ICT is able to overcome the remoteness and narrow the disparity of quality of life between the South Pacific and the rest of the world. As an important regional organisation, the USP plays a key role in enhancing education across the South Pacific region. However, this task encounters a number of challenges, including geographically dispersed locations covering 33 million square kilometres and four time zones, a varying economic, linguistic and cultural milieu with more than 200 languages and approximately 60 distinct cultures. The USP has devoted its efforts to education through the use of ICT as the main tool for development.

## INTRODUCTION

The South Pacific region, also known as the Pacific Islands, Oceania and the Southwest Pacific, is relatively unknown to the rest of the world due to its lack of strategic significance. Countries and territories in this region are divided into three major sub-regions: Melanesia, Micronesia and Polynesia [1]. Except for Papua New Guinea, the countries of the region are geographically small. Furthermore, economically this region has never been a centre of attention for global investors due to its low population, small markets, low purchasing power, limited natural resources, areas vulnerable to natural disasters and rampant political instability. Therefore, in many ways the region is unattractive.

This research was not aimed at examining ICT (information and communications technology) and education in individual states, due to limited information about the current situation. The South Pacific region was selected as an excellent research environment for looking at how ICT is a solution to problems in a vast and isolated region with a wide variety of cultures and languages. Despite the highly diverse nature of the region, ethnically, culturally and linguistically, *the only thing Pacific Islanders have in common is the water around them* [2].

This research was aimed at examining the role of the University of the South Pacific (USP) in the South Pacific region. In the work, the problems of the region as a whole were considered, even though examples and evidence could be taken from any country of the region. Hence, this article purposively looks at the South Pacific in general to help to identify similarities and differences between, and within groups in the region. *The most common of these either relate to their racial/cultural groupings or their political associations and status; these generalisations do not deny the diversity that exists within and between each group* [2]. Because the USP is a regional university and serves 12 member countries, it is worth treating the South Pacific region as a single unit for analysis. Moreover, the USP is unique, serving as a pioneer in distance and blended-learning using ICT, which is the most viable option and appropriate mode of delivery to support education in the region. In this article, the limits of the focus was to tertiary/higher education since the USP's primary business deals with education in universities or higher education colleges spread throughout the Pacific region.

As with other countries in the world, South Pacific countries have to battle to catch up with the UN's global programme of sustainable development goals (SDGs). The economic growth and human development of all the countries in the region is below the average of developing countries, while almost all of them are net foreign aid recipients. Among other countries in the world, South Pacific countries are *early achievers* and remain laggards in meeting some crucial targets, including education [3].

The SDGs aim to consign poverty to history, battle against injustice and inequality, and address climate change by 2030. To achieve the SDGs countries have no choice other than to engage with ICT as a key enabler. The UN General Assembly for the 2030 Agenda for Sustainable Development promotes ICT and global interconnectedness as

accelerators for sustainable development. Information and communications technology is seen as a catalyst for all three pillars of sustainable development - economic, social and environmental [4].

Information communications technology has the potential to improve people's lives in the South Pacific. Since the ICT revolution has occurred in the Pacific, communities have used affordable and relatively stable digital networks in their day-to-day activities. However, to gain maximum benefit from this new technology, countries need to incorporate ICT education in their strategic plans. Technology is not a single solution to the problems in the South Pacific, but can overcome many obstacles in the region. Technology can be deployed to remote regions difficult to reach by other tools or services. Technology can be a way for countries and regions to attain SDG targets. Thus, for the South Pacific region, the digital transformation brings rapid change to all aspects of life. As a result of the technological forces driving ICT with mobility, broadband and the cloud, the new economy creates new links, such as digital business, digital education and digital entertainment [5].

## EDUCATION ISSUES IN THE SOUTH PACIFIC

One of the most difficult problems faced by almost all South Pacific countries is limited educational attainment. In the early 1970s, education was not a concern for the South Pacific countries, because most countries in the region were not independent [6]. Schools were introduced to most of the islands of the Pacific by Christian missionaries, followed later by governments. As the Christian missionaries applied the European education system and curriculum, many of the educational goals were European. As a result, most Pacific people considered education as a luxury to get the best pay in a highly competitive jobs market.

Though the colonial past remains a strong influence on the educational curriculum in many Pacific countries, there seems to be an awareness of the importance of developing their own identity in which education must play an important role. Gradually, the attitude of people toward schools has changed. The greatest change in the education system in the South Pacific countries is the awareness by its leaders of the need to meet the demands for an educated workforce. Following this, parents started sending their children to school. The demand to improve the quality of education increased and became a concern of leaders of the new countries. Even though it remained problematic, the European education system has been more oriented towards the Pacific [6].

Although there has been some progress since the 1970s, higher education in the Pacific is still very limited in terms of access and quality. For example, according to data from the Asian Development Bank, educational participation is estimated to be about 10% in Fiji and, on average, 2% to 5% in many Pacific island countries [7]. Of the few registered higher education institutions, only a few colleges or universities offer internationally recognised qualifications. Given the limited availability of higher education programmes in the South Pacific countries, most of the younger generation in the region attend overseas institutions, such as in Australia or New Zealand or the regional university, the USP.

### Education in the South Pacific

As of 2011, there were approximately 22,000 students enrolled in the USP. In addition to the limited number of institutions of higher education in the Pacific, the classical problem faced is the issue of high education financing. South Pacific countries have difficulty financing through their budgets, because their economies are vulnerable to global financial crises. In most countries, budget allocations prioritise basic education. In many countries, the budget allocations for higher education are mostly contributed to the USP. Countries that have achieved primary and secondary education allocate a larger share of their education budget to higher education. In Samoa and Tuvalu, for instance, at least 98% of every age group completes primary school, so these countries are able to contribute about 5% of public education resources to higher education, while in Fiji, where 86% complete basic education, the allocation is more than 11% of the education budget to higher education [7].

In the early 1990s, there were about 13,000 students throughout the South Pacific in higher education. Nearly a third studied at the USP, the only regional institution and the only one to have significant university level teaching. The other two-thirds studied at about 40 institutions throughout the region. Of these, half had fewer than 100 students each. In addition, nearly 3,000 students studied at universities outside the region, mostly in metropolitan countries, such as Australia, New Zealand, Canada and the United States, including Hawaii. This pattern of the 1990s continues to this day. The Pacific countries' graduates all found jobs and there was almost no unemployment. Indeed, 25% already had a job while still at university, with another 60% were guaranteed work after graduation, and the rest had no trouble getting into the workforce. In Fiji, 60% of these jobs were in the public sector, while in other countries, the public sector accounted for more than 80%. This means that most graduates became civil servants [8].

### Employment and emigration

The lack of reliable and consistent labour market data across the Pacific island countries (PIC) makes it difficult to accurately assess employment by level of education. There are high unemployment rates in almost all countries in the South Pacific, especially among young people with low levels of education and inadequate skills. Countries in the South Pacific face difficulties in recruiting skilled workers; meanwhile many vacancies remain unfilled.

In the Solomon Islands, 17% of public positions were unfilled, and three-quarters of these positions were in critical positions, such as teachers, nurses and public administrators. While available opportunities for skilled workers vary widely throughout the region, there is a need to improve education to supply a skilled workforce [7]. Another problem is that while there is a crisis in employment in the public and private sectors among the South Pacific countries, there is also a relatively high demand for semi-skilled and skilled workers in overseas markets, such as Australia and New Zealand. One third of the students who graduated between 1985 and 1988 preferred to work abroad. The main destinations were Australia and New Zealand, and some countries in Europe. In Fiji, Kiribati, Tonga and Western Samoa, about 70% of graduates work abroad. In the Solomon Islands it is 30%, while in Fiji, 42% left the country between 1987 and 1990.

This is the ongoing pattern throughout the South Pacific, especially in the Polynesian and Micronesian sub-regions [8]. This resulted in high labour mobility of qualified specialists in these two sub-regions [7]. This condition resulted in a brain drain, a difficult problem to overcome due to more lucrative job offers in competing markets [9]. An increasing brain drain is a concern for the development of South Pacific countries, because of the significant impact on achieving the SDGs.

### Effects of Emigration

The high rate of emigration across the Pacific is an important contributing factor to the shortage of skilled labour. Why emigrate when there are many job vacancies, especially for university graduates? There are three explanations or hypotheses for the emigration trends. Even though none of these hypotheses exactly refers to the Pacific situation, they may nonetheless suggest the driving factors behind massive emigration. The *altruism hypothesis* reasons that emigration is about family welfare. The *tempered altruism or enlightened self-interest* explanation argues that there is a mutually beneficial informal contract between migrants and homes. The *Implicit Family Loan Agreement* considers loan repayments made by migrants when they were young [10].

Remittances became a major support for the South Pacific countries. Importantly, export limits and lack of trade diversification by the South Pacific countries mean that remittances provide an important boost to the economy. The South Pacific has a small economy and limited opportunities for market specialisation. Physical and human investment is difficult when the economy is small. These factors hamper progress in the Pacific islands [11]. Not surprisingly this situation is not conducive to keeping skilled labour at home.

One of the brain drain problems faced by South Pacific countries has been the migration of health workers to Australia and New Zealand. There are more Fijian doctors and nurses/midwives in Australia and New Zealand than in Fiji and other Pacific countries. The facilitating condition for this is the large-scale open recruitment of professional health workers by Australia and New Zealand. Hence, Australia and New Zealand contribute significantly to the brain drain from the South Pacific. The high level of health migration is due to South Pacific countries not having adequate training facilities for health workers. Of higher education institutions in the South Pacific, only two are medical schools; namely, in Fiji and Papua New Guinea [12].

All these limitations lead to aid dependence. The Pacific island region is one of the most dependent on overseas development assistance (ODA); the most highly dependent on a per capita basis. The majority of countries in the region cite ODA as the main national income [13]. Since independence, almost all Pacific countries have received help from their former colonial rulers for budget support, and the amounts have increased in the past decade due to inflation. Australia is the largest provider of development assistance to the region, although there are significant variations between Pacific island countries. The ongoing stagnation of some South Pacific countries and deterioration in some others has caused concern. The World Bank calls it a *Pacific paradox* that countries that have received so much help have only achieved limited economic growth [14].

To reduce foreign aid dependence, increase formal employment and to achieve development goals, South Pacific countries need to develop trade, because trade fuels the economic engine and increases government revenues. However, most South Pacific countries, including major countries, such as Fiji and Papua New Guinea, lack the resources to engage with the complexities of modern trade negotiations. It is difficult for their governments to negotiate on the same footing with other countries, especially big powers. This inequality needs to be addressed; for example, through staff training in negotiation skills. This lack of skills leads to frequent negotiations failing or ending unsatisfactorily [15].

## ROLE OF THE USP TO DEVELOP ICT-RELATED COURSES

The University of the South Pacific is a regional university founded in 1969 to serve twelve Pacific island nations (Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Samoa). It has 14 regional campuses around the Pacific [16]. More than just an educational institution, the USP serves as a liaison forum between countries in the South Pacific. The USP is a state university whose campuses are spread across several countries in the South Pacific. Initially, the University was established to supply human resources for the development of South Pacific countries according to local conditions and avoiding cultural alienation. The USP also plays an important role in enhancing the regional identity among its graduates who may be future Pacific leaders.

The USP is an internationally reputable higher education institution and an ideal venue for teaching and research of Pacific culture and the environment, with students and staff from a number of countries. The USP is the only university in the region that is internationally recognised by Australia and New Zealand. The main campus of the USP is located in Suva, the capital of Fiji. The University board comprises university personnel and representatives from all member countries, plus Australia and New Zealand, and the South Pacific Committee. Administrative staff and teachers are mostly from Fiji. Despite its ambitious mission, since its establishment the USP has faced the classic problems of lack of funds and physical facilities, and the dominant role of Fiji. This latter has to some extent become the main driver for the establishment of other universities in the Pacific, such as in Tonga and the Solomon Islands. These educational institutions have assisted with development through teaching, training and research that have contributed greatly to regional awareness [17].

The USP and Flexible Delivery of Education

To meet development challenges through education, the USP since its early years has developed a flexible learning system called USPNet. This is a private satellite telecommunications umbrella covering all 12 countries. With the help of modern technology, USPNet reaches those who live in the most remote places [18]. As a regional body, the USP is a good institution for promoting economic growth, governance and security. The USP is also a major regional agent and a model for regional integration through education. Thus it is effective in promoting a *meeting of minds* and the sharing of cultural values in the region, which are two important elements necessary for regional integration. The regional presence of the USP is thus important for economic growth, as well as the higher education of its members.

The USP has offered distance education since 1971, with an increasing number of courses offered. In 2006, there were 340 courses out of 763 in the USP conducted through distance learning, and all courses are targeted to be delivered through a flexible delivery method [19]. Out of a total of 22,000 students, 42% learn using, for example, Moodle (an on-line learning management system), video conferencing, CD ROMs, DVDs, audio/audiographics or audio/video tapes for the delivery of distance and flexible courses [20]. Technological improvements allow the use of video-conferencing for blended-learning purposes. The widespread use of computerised learning management systems has enabled on-line learning. Prior to the ICT revolution, radio was the first form of ICT service available in the South Pacific.

The ICT revolution in the South Pacific has had a huge impact. About 60 percent of the population currently has access to mobile phones and this percentage is steadily increasing. The high use of mobile phones has facilitated the rise of social media in the Pacific, which provides the Pacific Islands with the possibility of political and social change. Therefore, there are a number of factors driving the ICT revolution in the Pacific.

Development of ICT in the Pacific

It is important to note that since 2003 the Pacific telecommunications sector has been deregulated and reformed, leading to price declines and triggering an explosive use of cell phones. The Pacific ICT revolution is also supported by the large number of youths in the region. About one-fifth of the population of ten million is aged 15 to 24 years. This age group is the fastest adopter of new digital technology. The ICT revolution in the Pacific is highly transformative, because of its potential to address the demographic, geographic and economic challenges. To increase Internet usage, South Pacific countries are trying to improve their telecommunications infrastructure. Vanuatu, for instance, expected Internet speed increases 3,000 fold from the-then present level when fibre optic cables were completed by 2013. Similarly, the Solomon Islands plans to develop a submarine optical fibre communication cable system after a grant and loan from the Asian Development Bank [21].

Though ICT plays a key role in all countries, this role is even more important for the South Pacific countries. The USP made the right decision in determining to use ICT as an important learning medium. Nowadays, the USP is an active participant in ICT-related activities, including:

a. introduction of the USP Satellite Network (USPNet) in 2000;
b. becoming a Member of the *Open Learning Health Network* in 2003;
c. enhancing the USPNet in 2005;
d. starting the ICT Capacity Building Project (2002-2005);
e. adopting the International Open Source Network (IOSN) Sub-regional Secretariat in 2006;
f. creating the ICT Tax-free zone for the USP Statham campus in 2006.

While technology has been maximised to make education more accessible, this technology has not been fully integrated into the overall learning system in many South Pacific countries, and this is a major challenge for educational institutions. Technology is needed to improve access and to enrich students' educational experience. This ultimately is fundamental to changing the South Pacific economies [22].

Impact of ICT on Education in the Pacific

The document of the education ministers' meeting in Port Vila in 2012, promoted the vision to …*improve lifelong learning opportunities for all Pacific Islanders through effective utilisation of ICT*. The urgent need for the use of ICT

has led the Pacific Islands Forum Secretariat (PIFS) to lay the foundation for the use of ICT with the following precepts:

1. ICT is becoming an essential part of society.
2. Implementation of ICT in education should use an holistic approach.
3. ICT enables much more flexible student-centric learning.
4. ICT can influence social development.

Finally, the outcomes of these commitments are [23]:

1. Information-literate Pacific Islanders who can actively contribute to the social, cultural and economic development of Pacific society and the knowledge economy.
2. Education accessible to all.
3. Improved cost-effective, affordable and quality education.

It is clear that the purpose of ICT use in education is to ensure that the entire South Pacific population benefits from flexible learning opportunities. Increased access to ICT and on-line learning in the South Pacific creates opportunities for those who do not have easy access to traditional forms of learning. This is an important reason for the USP to continuously improve learning using ICT. A study conducted in the Cook Islands found that on-line systems offer ongoing learning, development and support opportunities, and reduce the feeling of isolation associated with the geographic location in the South Pacific region. Therefore, ICT systems are compatible with conditions in the South Pacific. On-line systems significantly reduce the number of education dropouts [24]. The use of ICT in learning is in line with the main objectives of the Pacific Islands Forum Secretariat in advancing education in the region, namely [23]:

a. introduction and utilisation of ICT as an important tool for improving education;
b. development of policies and guidelines for the use of ICT to improve education and learning outcomes.

## CONCLUSIONS

Information communications technology has had a remarkable effect on the South Pacific and offers potential solutions to the geographic, economic, social and cultural issues in the region. However, the unique nature of this region poses great challenges for, and barriers to, the delivery of flexible learning courses. The challenges are:

1. Geographical: remote and scattered islands.
2. Demographic and skills: scattered populations; lack of human capacity; lack of understanding of technology and lack of access to computers; lack of writing, communication, and English language skills.
3. Cultural: diverse cultural/indigenous backgrounds; educational conservatism and scepticism about education mediated by technology [22].
4. Finance: high cost of services and ICT equipment; competition for resources from climate change and health.
5. Infrastructure: poor infrastructure; insufficient bandwidth; lack of adequate secondary infrastructure, such as electricity, landlines and fibre-optic networks [24].

These challenges need to be addressed, so that the people of the Pacific can gain maximum benefit from the use of ICT for education. The USP has so far played an important role in enhancing education using ICT.

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