

Teaching ICT to Pacific Island Background Students

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Abstract

This paper proposes that in order for students from Pacific Islands backgrounds in multicultural information and communication technology (ICT) classrooms to gain maximum benefit from their studies, teachers must be aware of their cultural background and expectations. Technologies and teaching approaches which are foreign to indigenous Pacific islanders must be introduced cautiously so that all involved may fully appreciate the opportunities offered by such technologies instead of rejecting them. Teachers should recognise cultural diversities and understand the cultural background of their students and adjust their delivery modes accordingly. Furthermore, to allow students originating from less developed societies to act independently, lecturers from more developed societies should avoid imposing their ideas upon the indigenous systems of learning and doing things.

This paper is a contribution towards increasing participation, retaining, and encouraging Pacific Island background students to successfully complete their computing courses and programmes at tertiary level.

1 Introduction

The introduction of information and communications technology (ICT) into the higher education system which began with the development of ENIAC at the University of Pennsylvania in 1946 and continued with the implementation of the first wide area network between Massachusetts and California in 1965, and the operation of ARPANT in 1969 (Smith 2000). Many tertiary institution, around the world, are now exploring ways in which ICT can be mainstreamed to give students and relevant stakeholders easy access to a wide range of educational resources and services (Pocknee & Robbie 2002). It was not until the final years of the past century that indigenous pedagogy and the impacts, positive or otherwise, that ICT has made on learners in multicultural classrooms received world wide recognition and attention. Powell (1997a) affirmed that issues associated with cultural, racial, and ethnic diversity had not previously received attention in the educational

technology literature. He warned that we can no longer continue to ignore the critical challenges of educating diverse learners in our multifaceted classrooms because western styled classrooms were increasingly becoming cross-cultural laboratories.

Due to the complexity as well as the immensity of the issues highlighted above, this paper focuses on the issue of Pacific pedagogy, more specifically about how to teach ICT to Pacific Island background students (PIBS). It also draws on the work experience gained by one of the authors after spending many years in several Pacific island states. In addition, the paper also reports on the findings of a preliminary investigation into the subject conducted by the same author while teaching soft (management and human resource) issues associated with developing and managing computer systems at the School of Computing and Information Technology (SCIT), UNITEC Institute of Technology, New Zealand.

2 The concept of culture

In the English language, the word culture is defined in many different ways and is not always used congruously. Anthropologists Kroeber and Kluckhohn (1952), after censoriously reviewing more than 150 different definitions of culture have suggested that culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artefacts. Kroeber and Kluckhohn have insisted that the essential core of culture consists of traditional ideas which have been derived from historical facts and especially their attached values.

Pitts (1992) defined culture as sets of rules, beliefs (religious and political), customs and institutions, morals and interpretations of behaviour (levels of technological skills) that are shared by a society. Hoebel (1972) pointed out that culture comprises an integrated system of learned behaviour patterns which are characteristics of the members of a society and which are not the result of biological inheritance. Rucker (1937) maintained that cultural traits neither arise by the direction of higher authorities nor can they be compelled by the resolution of the legislature without the consent of those that would be affected. Furthermore, (Crocombe 1987) rightly pointed out that a local sovereign or foreign governing body requires massive, expensive and highly organised coercive action to radically change the prevailing cultural realities of its subjects.

It should be noted that teaching principles and techniques that are derived from the culture of a different society would not only be detrimental to the students originating from another society but they also would destroy the identities of indigenous students. As Johnston (1883) has commented:

Why should Polynesian people be taxed, fined and imprisoned according to the rules of the civilisation of an alien race ? ... I must say that the system of Europeanisation rather than civilisation is not only imbeneficial but harmful to the native races.

2.1 Acculturation and its consequences

Acculturation is a process whereby cultures of different societies interact, and the stronger cultured society conditions and changes the behavioural norms or customs of the weaker ones (de Blij & Muller 1986). During the cultural interaction, the traits of the stronger culture are usually adopted by the weaker. As a consequence, Ezigbalike and Benwell (1994) argued that the adoption of alien cultural traits results in net disadvantages to the weaker societies. It is not clear what makes one culture appear stronger than others or why one culture is considered to be superior and others inferior. Factors such as level of skills and technology, available resources and social structures have strong influences in conditioning the cultural traits of a particular society. Hess (1990) pointed out:

But tourism also may be abhorred by island residents who object to 'selling the culture for currency'. To some islanders, for example, the thought that items and practices of deep religious nature are to be listed in catalogues, together with the tariffs and delivery conditions, is utterly sickening.

The acculturation of the Pacific societies laid the foundation for the emergence of what we now refer to as multicultural societies around the region. Experiences (Thaman (2001) and Taufe'ulungaki (2003) show that services, like education, which introduced new concepts and technologies that are alien to the culture of PIBS, should be made adaptable to and flexible enough to cope with and preserve, as much as possible, the cultural identities of all involved.

As with the aborigines of Australia (Henderson 1993), cultural appropriateness of ICT for empowerment and encouragement of PIBS must include both western and indigenous knowledge, ways and conventions of learning, and that western content should be taught from the PIBS' perspective.

When introducing and teaching technologies that may be alien cross-culturally they should be made flexible so that they can be modified to reflect the multicultural aspect of our classrooms and should not be used as an instrument for acculturation of less experienced students such as PIBS. It is important to note that the more unlimited the power of new technology innovations over those that do not yet experience them, the more the former cripples the

creative capacities and weakens the ability of the latter to act independently.

3 Literature Review

Researchers on the subject of indigenous pedagogy have indicated that educators of the 21st century should be aware of the important roles that ICT can play in teaching diverse learners to learn. Roblyer, Dozier-Henry & Brunette (1996) stated that while some goals of multicultural education were being addressed, there were many others that technology cannot achieve and there were some problems that unplanned and irresponsible application of technology actually created. Sheffield (1997) advised that due to diversity of learners' characteristics in multicultural classrooms, teachers should employ a large set of instructional strategies and techniques to facilitate, optimise and ensure equal participation and achievement of learning outcomes for all students. Powell (1997b) claimed that culturally insensitive educators failed to see the richness of cultural differences, or worse yet, viewed them as deficits needing to be corrected by assimilation into the dominant culture.

It has also been argued that if we want to be successful in increasing indigenous participation in information technology (IT) courses and the ICT industry, then participation of indigenous people in the shaping of their involvement is crucial (Robertson, Dyson, Norman & Buckley 2002). Moreover, Williamson & DeSouza (2002) pithily supported the others by saying that even though educators have long recognised and considered prior learning and life experience in their pedagogical strategies, cultural differences have not been scrutinised. Consequently, knowledge and experiences originating from within non-western cultural group, whether indigenous or migratory, have not been valued and therefore, educators failed to comprehend the benefit to be gained by allowing students to engage in learning in a way that valued their own cultural and social heritage. Recognising the importance of computer literacy to indigenous education, Dyson (2002) argued that despite improvements in indigenous tertiary education, the failure rate remained unacceptably high, and advised that if a computer literacy course is to be successful, it must be culturally acceptable and appropriate to indigenous students' interest, values, learning styles, and identity.

3.1 PIBS in Tertiary Education

In 2001, the NZ Government released its plan for Pasifika Education. With regard to Pasifika tertiary education, the plan has the following long term goals:

- increasing Pacific students' participation in tertiary education;
- improving Pacific students' achievement in tertiary education – closing the gaps with non-Pacific students within twenty years;
- increasing the opportunities for Pacific adult education and community learning, and specific

adult literacy programmes over the next five years.

In order to reach the stated goals and secure commitment of relevant stakeholders, the Government, through the Ministry of Education developed and released a set of tertiary education strategies and objectives. The achievement of the objectives will be used as the yardstick with which to measure the success of the plan. Strategy Five, of Government's Tertiary Education Strategy 2002/07, *Educate for Pacific Peoples' Development and Success* outlined four key strategic objectives for tertiary education over the five year period from 2002 – 2007 which may be summarised as follows:

- encourage and assist Pacific learners to develop skills that are important to the development of both the Pacific and New Zealand.
- the tertiary education system be accountable for improvement of Pacific students learning outcomes and connected to Pacific economic aspirations.

In support of the strategic statements, the New Zealand Vice-Chancellors' Committee agreed that Pacific people would play a central and significant role in the economic and social future of this country and that the tertiary education system has a crucial role to play in developing their capability (Ministry of Education 2002a).

During the 2001 population census, 6.2% of the New Zealand total population (231,801 people) were identified as of Pacific ethnic origin (Statistics New Zealand 2002). According to the Ministry of Education's statistics, only 6.1% of the 2001 enumerated Pacific islanders were engaged in formal tertiary education (Ministry of Education 2002b).

The Government has set out a policy framework directing the tertiary education systems to act more responsibly to the needs and aspirations of the PIBS. A number of studies have been carried out in attempt to implement this policy. The studies relevant to the discussion of this paper, focussed on the issues associated with the recruitment, participation, retention, and success of PIBS.

Neilsen (cited in Coxon, Anae, Mara, Wendt-Samu, & Finau 2002) investigated potential barriers to participation in post-compulsory education and training and found, with respect to PIBS, that:

- high cost of education and training,
- unrealistic cultural demands from families in New Zealand and relatives in the home islands,
- little or no access to private study areas or private study opportunities in extended families' environment,
- English literacy,
- lack of assertion by some cultures,
- lack of culturally familiar courses,

- lack of role models and mentors.

When exploring the issues affecting the recruitment and participation of Pacific islands students at UNITEC Institute of Technology, Apa & Keneti (1998) found the following as fundamental barriers for PIBS when enrolling and attending school:

- lack of support,
- lack of information and knowledge,
- language and communication difficulties,
- financial barriers,
- exclusive qualification criteria,
- lack of cultural sensitivity, and
- lack of class management skills

In 1999 UNITEC's Academic Board established a long-term student retention and success working party (SRSWP) to investigate and recommend approaches in which the retention and success of students in UNITEC programmes may be improved. SRSWP submitted its report in October 2000 identifying:

- lack of leadership,
- staff overload,
- lack of rewards/incentives for staff,
- resourcing,
- lack of integrated responsibilities for enhancing the development of tertiary literacy,
- students' unrealistic expectations,
- lack of clarity about responsibilities, and
- mono-cultural culture as some of the barriers for students success and retention (SRSWP 2000).

The Pasifika Research Framework Team of the Ministry of Education commissioned the Auckland Uniservices Limited, in 2001, to carry out a literature review of issues pertaining to Pacific education. Uniservices' final report (Coxon, Anae, Mara, Wendt-Samu, & Finau 2002) was submitted to the Ministry of Education in January, 2002. With regard to PIBS and tertiary education some of the report's findings are:

- most of the Pacific tertiary students have attended low decile secondary schools,
- Pacific students enter tertiary education with lower entry qualifications than their Palagi (*Pakeha/white European*) and other counterparts,
- a greater proportion of Pacific students are enrolled in lower level qualifications than for the overall tertiary student population, and a lesser proportion in degree and postgraduate programmes,

Auckland Uniservices Limited was also commissioned to gather qualitative information on the actual and perceived barriers to participation in tertiary education and training of Pacific peoples. The final report (Anae, Anderson, Benseman & Coxon 2002) in February. The report identifies financial hardship, health, and inadequate study environment at home as some of the personal barriers and lack of engagement with lecturers and not being familiar with academic workload as key institutional barrier to PIBS success.

During a statistical analysis of data on Pacific students in tertiary education and at UNITEC, Yorston (2002) stated that prior to the year 2000, most of the PIBS attended Polytechnics, but there was a dramatic move towards universities as well as an increasing flow of students towards Private Training Establishments (PTEs).

4 Pacific Pedagogy

In responding to Strategy Five of the NZ Government's plan for Pacific education, Taumoefolau (2002) pointed out that the roles of PIBS and their communities were not spelled out in the framework and that we have to encourage the students themselves to improve their English language literacy skills and devote more of their time to their academic works. Before doing what Taumoefolau has suggested, the author of this paper proposes that researchers into the field of PIBS take few steps back and try to identify the root cause(s) of the issues of recruitment and retention. Otherwise, we will be spending valuable resources in treating the symptoms instead of the causes of the issues. This paper will provide cultural information that teachers in classrooms where PIBS are involved should understand as a precursor to their efforts to diagnose the causes and get the right solution(s) to the 'problem' of recruitment, retention and success of PIBS.

4.1 Ethnographic Background

Culturally speaking, the people of the insular nations of the Pacific had their own perception of education (non-formal education) before the introduction of the European-type of education (formal education) by the missionaries in the early years of 19th century (Thaman 1999). Prior to the contact with the West, written languages were lacking in the islands and communications were done by word of mouth and sometimes with the help of pictures.

When the missionaries arrived in the islands, they introduced Christian principles. The biblical teachings of the missionaries resembled the military's 'command-and-do' technique, where the indigenous people must keep quiet, listen carefully, and then later try to do what has been taught at the church, on their own. Since the missionaries were also the teachers, the same approach was used for academic teaching. Moreover, since the missionaries/teachers were sometimes seen as gods, their words were taken for granted, by the islanders, therefore they naively believe that every words spoken by the missionaries were true and final.

On the one hand the technique of the missionaries fitted well with the hierarchical structure of Pacific societies, where the elders' or tribal leaders' words must be followed by the younger generations, since they believe that everything is for the doers' benefit. On the other hand, the learning styles of the islander differ from the *listen-to-me-and-do-it-yourself* teaching techniques of the missionaries.

4.2 PIBS Learning Styles

Unlike the *listen-to-me-and-do-it-yourself* teaching technique alluded to earlier, the traditional mode of teaching and learning prior to the arrival of the missionaries was that of "supervising, observing and doing simultaneously" in which the learner must watch closely, under close supervision of the traditional teacher, and try to emulate what has been said and done, until the learner could do it alone. It is worth noting the Polynesian culture (most PIBS are Polynesian) is a shame culture. PIBS usually do not ask questions during class or before others for two main reasons: 1) wanting to know something and therefore asking question is considered a bad habit by some societies in the Pacific, and 2) knowledge, appeared to be conditioned by the society, especially the highly stratified societies. Younger generation will be told, and taught, at certain time about how to do certain things. Consequently, we can now deduce that culturally PIBS are not problem-based learners but rather a combination of experiential and collaborative learners. It is therefore necessary for teachers who are teaching in multicultural classrooms to apply different teaching modes such as experiential and collaborative techniques, to guarantee benefits for all learners, especially those that have PIB.

The Greek philosophers classified knowledge into *doxa* and *episteme*, where *doxa* refers to that which is intuitively believed to be true, and *episteme* is that which has been learned, proved through experience, and known to be true. The Greeks felt that the primary role of learning and science was to turn *doxa* into *episteme*. We may now conclude that learning by observing and experiencing by doing are the mechanisms through which what is believed to be true (*doxa*) may be tested and transformed into what is proved and known to be true (*episteme*). However, PIBS may also turn *doxa* into *episteme* through belief due to the religious background philosophy of their formal education system.

The words of Confucius, two and half millenniums ago:

"Tell me, and I will forget. Show me, and I may remember. Involve me, and will understand."
(Confucius, 450 B.C. quoted in Pickles, 2002)

still hold today and are particularly applicable to the PIBS.

Knowles (1981) contends that learners learned most effectively by experiential techniques than by lectures or reading didactic text. In addition, Kolb (1984) defines learning as the process (rather than the outcome) through which knowledge is created through the transformation of experience.

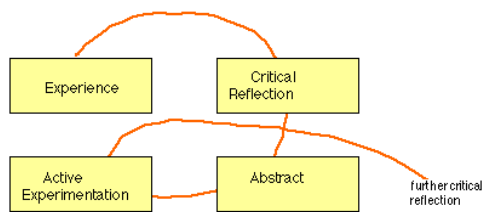


Figure 1. Experiential learning cycle (adapted from Kelly, 1997)

Bruffee (1983) defines collaborative learning as a reacculturative process that helps students become members of knowledge communities whose common property is different from the common property of the knowledge communities they already belong to. It is a process where two or more people help each other to reinforce and expand their ability to comprehend the challenges, risks and opportunities that they may be facing. As a lecturer, the writer's experience indicates that students learn more if they are active participants in the learning process. Moreover, it was found that group activities can enhance learning and that the facilitator must ensure that all members of the group participate actively in the process. The well known notion of "give us the tools, and we can finish the job" may be better stated as "show us properly how to use the tools so that we will be able to finish the job" from the PIBS perspectives.

For collaborative learning to be effective, teachers should now understand their role as facilitator instead of the boss in the classroom. Accordingly, facilitators must consider teaching as a process of advancing and enhancing student's ability to learn. The facilitator's role is not to transmit information, but to facilitate learning. This involves creating and managing meaningful learning experiences and stimulating student's thinking through real world problems.

Collaborative learning activities help to solve shy, quiet and passive characteristics of PIBS in order to enhance their learning ability through interacting with more active learners. Furthermore, students have the opportunity and courage to meet new friends and develop a comfortable, relaxed community within the learning environment. It is hoped that through collaborative exercises, students who are burdened with low self-esteems, inadequate academic backgrounds, lack of support systems, and often lack of hope could learn to communicate socially, increase self-esteem, and perhaps be encouraged by group peers to remain in school when personal problems seemed insurmountable.

An unstructured interview of PIBS's who are currently doing tertiary second year computing courses found that some of them have problems with understanding computing terminologies. Some of the students learned things by heart simply to pass tests and exams. This is typical of PIBS, especially those that reached high school level in their home country. Some have never seen the Waikato river or Mt. Ruapehu but they have to know something about them, in case a question in an exam, especially if they are involved with NZ school assessments. Some PIBS only use computers at school

and are therefore not familiar with the tool and its peripherals. Seven PIBS currently studying various computer courses at UNITEC were asked to explain the main problem they are facing or impeding their success. Most students said computer terminologies and lack of practical experiences in using computers were their main concerns. Some said teachers should speak slowly, explain things clearly, and use simple and practical words. Others said that teachers hardly use practical examples to demonstrate and answer questions. During the interview one student asked the interviewer what is user interface another one asked what is a storyboard, stakeholders and so on. The questions were easily solved by drawing diagrams supported by few demonstrations using a computer. The students were then asked to answer few of their own questions. The answers proved that clear and detail explanations, practical demonstrations, and supervised hands-on experience are extremely helpful to the students involved.

The interview briefly highlighted in the preceding paragraph and Kelly's model in Figure 1 show that experiential learning begins with the experience followed by reflection, discussion, analysis and evaluation of the experience. The assumption is that we seldom learn from experience unless we assess the experience, assigning our own meaning in terms of our own goals, aims, ambitions and expectations. From these processes come the insights, the discoveries, understanding, and readiness as well as willingness to share with others in collaborative fashion.

In order for ICT to be considered appropriate, despite being scientifically developed and proved to work efficiently, it must be adapted to the environment in which it will be employed for the benefits of those that use it.

5 Conclusion

The increasing recognition of the importance to cultural diversity and need to preserve ethnic identities needs two-way top-down policy formulation and planning and bottom-up implementation starting from our classrooms. This paper proposes that in order for the Pacific Island Background Students to take advantage of the benefits offered by information and communication technology, teachers teaching classes where PIBS are involved must be aware of their cultural background and expectations. The traditional hierarchical structure of their communities allied with the command-and-do military technique of the European's missionaries and the ignominious characteristics of their culture are factors that restrain them from asking questions and actively participating in class discussions. In addition, technologies which are foreign to their culture, and the associated terminologies, especially for the fast changing ICT, must be introduced cautiously to ensure that passive PIBS will be able to see the benefits of using such technologies and adapt accordingly. PIBS's concern is not only of the course contents but also of the tools needed to be used to carry out their tasks.

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