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Full Length Research Paper

Reorienting education and indigenous Fijian ecological knowledge: An analysis of indigenous Fijian students' traditional ecological knowledge of environmental sustainable practices

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Reorienting education promotes the idea of using Traditional Knowledge to achieve the goals of the United Nations Decade of Education for Sustainable Development. This study investigates the knowledge of indigenous Fijian students and their understanding of Traditional Ecological Knowledge (TEK) in particular environmental sustainable practices. The effect of urbanisation and the culturally biased nature of the Fiji school curriculum is a contributing factor towards the lack of appreciation placed on Fijian TEK. The study acknowledges the need to reorient education by strengthening the importance of Fijian traditional knowledge and integrating the school curriculum as a mechanism to promote and sustain Fijian TEK.

Key words: Fiji, traditional knowledge, reorient, education.

INTRODUCTION

The idea of sustainability among indigenous people is often linked to their culture and way of life. Indigenous ideology is often attributed to spiritual respect for a practical understanding of the natural world (Smith and Wishnie, 2000). Evidence of spiritual respect of the natural world is manifested on conservation practice, ethics and beliefs that the environment is a vital aspect of life and for continuity of the future generations. In a traditional society, sustainable natural resource management is driven by the beliefs and behaviors of human communities, and local cultures are strengthened by their intimate connections to the natural environment that sustains them (Rist et al., 2003).

The United Nations *Decade of Education for Sustainable Development* (DESD, 2005-2014) advocates the idea of environment sustainability and conservation. The wide use of the term *sustainable development* makes it more difficult to define. A much clearer definition was put up by the Brundtland Commission: *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (World Commission on Environment and Development, 1987). However, this study uses the concepts of sustainable development and environment conservation interchangeably in the context of indigenous Fijian ecological knowledge.

Traditional knowledge regarding the environment and its use is generally referred to as '*Traditional Ecological Knowledge'* (TEK) (Inglis, 1993). TEK epitomizes experiences acquired over thousands of years of human contact with the environment. It can be noted that over the past two decades, there has been increase in recognition of TEK and its importance to the environment (Battiste and Youngblood, 2000). TEK has been recognised to contain valuable potential to contribute to the global ideas of addressing effective conservation and sustainable environment practices. Berkes (1999) pointed out that the strength of TEK is due to the fact that it is locally developed with highly specified information important for managing the local ecosystem. However, it is also important to recognise that this strength can turn out to be a weakness in the acceptance of TEK in other

contexts (Berkes, 1999). This was confirmed to be a major contributing factor towards the lack of recognition given towards TEK (Menzies, 2006). On the same note, this should not be seen as a hindrance to the effort of trying to record, document and produce discourse on TEK.

The ideas entrenched under *Education for Sustainable Development* (ESD) acknowledges elements of indigenous sustainable practices. The *Second Priority Area* of ESD is on *Reorienting existing education* (McKeown, 2002). The term "reorienting education" was used to help educators and curriculum developers understand the changes required for ESD. Reorienting education would require program developers to have a sound background of traditional practices as highlighted by McKeown (2002).

In reorienting education to address sustainability, program developers need to balance looking forward to a more sustainable society with looking back to traditional ecological knowledge. Indigenous traditions often carry with them the values and practices that embody sustainable resource use. While returning to indigenous lifestyles is not an option for the millions of urban dwellers, the values and major tenets of indigenous traditions can be adapted to life in the 21st century.

The TEK among the Fijian young people can be said to be slowly diminishing with the fear that many of them might forget the importance of indigenous sustainable knowledge. Many young people can neither identify the relationship nor are aware of any relationship between modern sustainable practices and TEK practices. This attitude was further consolidated by the lack of education and information available on indigenous Fijian sustainable practices and the absence of TEK on the current school curriculum. MacDonald and Willis (2013) stated that science provides the western conservationist with a mathematically rational understanding of the physical relationship and interdependence within the ecosystems. At the same time, we must still acknowledge the various and complex links between humans and nature that are perceived by people through cultural and spiritual contexts.

Many people still perceive that the cultural views of the ecosystem are the most effective system that directs the best use and preservation of nature. The lack of percepts on Fijian TEK and traditional sustainable practices among our young people is also a reflection on the level of understanding or the lack of it among the adults and teachers. Students have no idea of traditional conservation practices because the teachers failed to teach it, this issue further makes it difficult for the students to acquire knowledge of modern sustainable practices or relate it to their own cultural backgrounds. This study analyses the causes that contribute to the lack of TEK in particular, sustainable practices among indigenous Fijian students. The main focus of the study was on identifying the students' level of understanding and to probe their knowledge on the relationship between TEK and modern practices promoted by Education for Sustainable Development (McKeown, 2002).

LITERATURE REVIEW

Indigenous Fijian epistemology originates from the *vanua* and this has been identified as the main foundation of knowledge among the people (Nabobo, 2006). The *vanua* provides the basis on which adults like to teach their children and more importantly values that need to be continuously inculcated to the coming generations. Knowledge comes from the people living in the community, in particular the elders, parents and traditional leaders. Nabobo (2006) highlighted that knowledge is determined by what the vanua considers being important and would bring about good life/well-being (*sautu)*. Sautu incorporate all the areas of life in terms of physical, emotional, psychological and spiritual well-being.

This is the basic idea that confirms the important role of the elders in the teaching of the young people to ensure that they too enjoy *sautu* in the future. The elders also stress upon the importance of the '*sautu in vanua'* (prosperity of the land/ people). Prosperity in the Fijian culture includes the abundance of wealth and materials, but more importantly to have a healthy and wide network of relationship (Nabobo, 2006). Sharing is the obligation of everyone, and it is often a gesture of prosperity, when someone offers more and the amount of wealth someone has is often determined by how much they give. Offering follows the system of reciprocity that ensures the cycle of prosperity among the people, exchanging of offerings and good deeds by the people often takes place between villages and districts. The system of reciprocity always brings about long term relationship and peace.

The person's age is important in determining the social behavior and economic activities (Ravuvu, 1983). The young people should always obey and respect the elders and should not disregard instructions or demands nor question their authority. The older siblings are expected to behave in a mature and responsible way, to organize and lead any traditional activities. During formal traditional gathering, the elders are expected to take the leading role, and at the same time teach the young children on what to do. Ravuvu (1983) also mentioned the importance of the young people's participation during ceremonies and village activities as a means of learning. Disobedience of any nature by the young people is seen as a sign of disrespect and is often punishable by public beatings or detention.

The revisiting and identification of indigenous ecological knowledge is the second priority area of ESD (2002), which emphasizes the importance of looking back into the past (McKeown, 2002). It was recommended by MacKeown (2002) that returning the present lifestyle into the past is not an option, the values and major tenets of

indigenous traditions can be adapted to life in the present. The ground work for such a process would need to start from education, where the curriculum of schools addresses ideas of sustainability. Reorienting education should occur throughout the formal education system from primary schools to universities (MacKeown, 2002).

The shift from communal life to individualism of the indigenous population has brought about many changes to their traditional epistemologies. Macdonald and Willis (2013) pointed out that a contributing factor to this is the shift from rural to urban, accompanied by the shift in personal space from one with many natural elements and fewer artificial ones, to one with many artificial ones and few natural elements. The repercussion of this shift forces the decline in knowledge of the natural world and the increasing fear of it.

Priority area three of ESD (2002) emphasizes the awareness and the teaching of skills and knowledge that supports the idea of sustainability. The need for a concerted effort from every member of the community becomes more important with the rapid increases of democratic government (MacKeown, 2002). An informed citizen would support the initiative of policy makers and the Government to enact sustainable measures. MacKeown (2002) pointed out the importance of public awareness that would assist in the moulding of knowledgeable consumers, who can see beyond the "green wash" (that is, public-relations efforts that highlight the activities of corporations that are more environmentally responsible, while ignoring or hiding the major activities that are not).

Cultural diversity is closely linked to biodiversity as there is a symbiotic relationship between habitats and cultures and between ecosystems and cultural identity (Negi, 2010). In his study of the mountain community in the state of Uttarakhand, Negi (2010) confirms the significant relationship between the cultural identity of the community and the eco-system and how the people live in a biodiversity rich environment. The study highlighted the importance of traditional knowledge- based systems (TKBS) methodology, using the conservation purpose of rules and practice as a means of providing information on environmental and conservationist implications. The study put forward the value of indigenous knowledge, that the cultural principles of Uttarakhand mountain communities can be considered a requirement for sustainable development.

The indigenous Fijians live in villages surrounded by rich flora and fauna, with a clear set of unwritten instructions guiding their use. Culture and biodiversity are intriguingly intertwined where species richness is highly patterned and concentrated in areas of high human linguistic knowledge (Moore, 2012). The highest ranked habitat types in terms of biodiversity and utility value are largely occupied by distinct ethnic populations around the world (Mulder and Coppolillo, 2005). The UN also acknowledges the value of indigenous ownership by the *Convention on Biological Diversity* signed in 1992 and ratified by 171 countries, which emphasizes the need to protect customary use of biological resources. In 1996, a great movement that recognises the rights of indigenous people in international law was endorsed by mainstream conservation organisations as the *World Wide Fund for nature* (WWF- International), *International Union for Conservation of Nature* (IUCN) and *The Nature Conservancy* (TNC), through conventions that range of decertification to intellectual property and plant genetic resources (Mulder et al., 2005).

The Fijian indigenous culture forms the basis of indigenous Fijian epistemology and how they live. The terms culture and tradition refers to a widely shared values and customs of the *vanua* that are variously embraced and practiced by individuals, families and villages (Nabobo, 2006). When discussing about how the Vugalei people live, Nabobo (2006) discloses the concept of *vanua* which means land as well as place. The meaning of *vanua* by the indigenous Fijian comprises everything on the land and includes all fauna and flora as well as waterways, oceans, mountains and forests. In the English language, the word *land* would have some close resemblance to the term *vanua.* The *vanua* is of1physical, social and1spiritual significance to the people, and also forms the relationship between culture and epistemology.

Indigenous Fijian owned land communally through sub-clans or *mataqali*. The Fijians believe that the people are custodians of the land and are expected to protect it. This notion of the land encompasses wealth, shelter, food, water and all that is needed for sustenance. The problem is manifested when the people do not understand the meaning of the land and its relationship to the people. The problem can also be attributed to the failure of elders including teachers to teach the young people on the significant relationship between the *vanua* and the people.

Indigenous Fijian beliefs demonstrate a deep attachment between the people and their environment. Since the end of the 1990s, indigenous knowledge and folklore have entered the armpit of intellectual property discussions shedding light on many current global scientific issues (Lewinski, 2008). In the olden days, the elders always stressed the importance of protecting the land, "*dou maroroya vinaka na nomudou vanua*" which means to use the resources on the land sustainably so that the future generations can also enjoy it and the preservation of tradition and culture. The indigenous Fijian cultural belief states that the existing resources are not for the current generation and should be conserved for the future generations; this is something that is passed down from generation to generation to ensure *sautu* (good life/wellbeing). The environment is part of the Fijian culture with a belief that it is given by God to sustain life; food sources are never over used or exhausted but used wisely only enough for daily

consumption.

The culturally biased nature of the Fiji curriculum is also a major contributing factor to the lack of TEK among the students. The current curriculum places more emphasis on the teaching of main stream subjects like Science and Arts leaving little opportunities to the teaching of traditional values. Moore (2012) pointed out that the school curriculum is not neutral and socially constructed and is operated in the interest of dominant, self-privileging groups within society at the expense of less dominant groups. The effect of this is reflected in the lack of understanding among the young indigenous Fijians and their lack of appreciation about indigenous Fijian sustainable practices as compared to interest given to the more Eurocentric school curriculum.

The idea of ESD to the young indigenous Fijian was rather perceived to be a foreign concept that does not have any relationship to the Fijian culture. During the author's young days, children always anticipate going back to the village, where lots of interesting activities await them, the village provides the opportunity to learn about important values and practices of the Fijian culture. This was also a good time for us to reflect on the problems that are happening in our society and how we can draw solutions and inspirations from traditional epistemology. The young indigenous Fijians of today do not have much interest in going back to the village to learn about traditional values and sustainable practices. The village life is not very interesting because the young people have been much more influenced by the easy, care-free living of urban life. The following assumptions were established as contributing factors to the problem:

Culturally biased curriculum

Traditional Fijian knowledge and cultural values are not given much recognition in the existing high school curriculum. The lack of consideration given towards the teaching of the Fijian culture has adversely influence the understanding and beliefs of young indigenous Fijians. The education system gives more priority to mainstream subjects because of the prerequisite status of these subjects to career opportunities.

Absence of informal education

The teaching of indigenous knowledge in the traditional Fijian community is usually carried out in informal settings through verbal mediums such as *tukuni* (story telling), *sere* (songs), *meke* (dances) and *i vakaro* (verbal instructions) to the novice during everyday chores and other traditional activities. The role of teaching is usually assigned to the elders in the family or in the village; senior relatives can also take on the role of instructors depending on their level of experience. The indigenous Fijian elders of today have found themselves restricted from carrying out their role because of the changes occurring in our political, socio-economic environment coupled with rapid development of globalization and the ever evolving *Information Communication Technologies* (ICT). The young people are drawn towards other activities available in urban centers such as ICT and social activities that have prevented them from appreciating the importance of traditional values.

The elders are also affected by the lack of motivation due to the socio-economic pressures of living in the urban areas such as high cost of living, unemployment, social obligations and poverty. The communal kinship of the Fijian community has also been affected because of the difficulties in gathering relatives together at a common place. Families have become more private and are only concerned about their own livelihood and wellbeing leaving less opportunity to maintain relations with relatives.

METHODOLOGY

Research subjects

One hundred Year 13 indigenous Fijian high school students were systematically selected from three high schools in Lautoka, the Western City of Fiji.

Research tool and implementation

A questionnaire containing six questions was given to the students with questions that enquire about their understanding of indigenous sustainable practices. From the 100 questionnaires given, ninety successfully responded indicating a 90% response.

A "curriculum mapping" exercise was also conducted to identify the coverage of TEK content in three Year 13 subjects namely: Geography, English and Biology.

RESULTS AND DISCUSSION

Table 1 shows results of students' information about the *vanua*. The first set of information on the questionnaire requires the students to provide information about their vanua or their traditional origin (kai vei); *Yasana* (district), *Koro* (village), *Mataqali* (clan), *Tokatoka* (Sub-clan) and *Yavusa* (District-clan). Feedback from the students indicated that not all the students can provide information about their vanua. The data show that only 60% of the students can identify the names of their *Mataqali*, while less than 50% can name their *Yavusa* and *Tokatoka*. Understanding one's place of origin is of very important value to the indigenous Fijian culture; traditional origin is a source of identity. It provides a structure of relationship between people from the same village and others from different villages, districts and provinces. The *vanua* also provides information on the association between the people, natural environment and physical resources. The indigenous Fijian landownership is determined by the

Table 1. Kai vei frequency of students that can accurately identify their *vanua* or where they come from.

Vanua details	% of correct identification
Koro	100
Mataqali	60
Yavusa	46
Tokatoka	30

mataqali or land owning units that are custodians of all the resources under their ownership. One's lack of knowledge or appreciation of traditional origin is an indication of a weak connection between the *vanua* and the natural environment.

Figure 1 shows the number of students that have visited their village. The second question on the student's questionnaire enquires whether the students have visited their village (koro) or not. The result shows that 65% of the students have been to their village. The village or village life is a representation of the *vanua*, it is very common for families to visit their village and get in touch with relatives and participate in village communal activities. The symbolic nature of the village portrays a value of connection to the people and the land.

The second question on the students' questionnaire enquires about the indigenous sustainable knowledge of the students. Figure 2 shows the frequency of how many students can name some indigenous environment sustainable practices. The result shows that only 40% can identify at least one indigenous sustainable practice. The common indigenous sustainable practices are: the *tabu ni wai* (taboo of fishing ground: sea and rivers); *tabu ni qele* (taboo of vegetation and crops); *tabu ni vuata* (taboo of fruits); *tabu ni koro* (village taboo); *na veivakarokororkotaki* (respect to land and people) and *na vula vaka-Viti* (traditional months).

The third question required the students to identify where they learn the knowledge of indigenous sustainable practice. This question was answered by 86 students. It shows the result of sources identified by the students with majority indicating newspaper and internet as their major source. This also shows that the students acquire this knowledge from secondary sources outside the scope of their family which also reflects the level of indigenous knowledge learning done at home. 12% indicated that teachers were the source of this information.

The fourth question required the students to list the indigenous sustainable practices that they know. Only 15 students answered this question and their answers were not very specific to the actual indigenous sustainable practice. Table 2 shows that the indigenous sustainable practices listed by the students were more related to modern ideas told by teachers and are not related to indigenous TEK.

The fifth question required the students to indicate the level of teaching done by elders/parents on traditional values. Table 2 shows that 80% of the students indicated that parents talk to them about traditional values. The second part of the question requires the student to list what aspect of traditional values was taught to them. The students' response can be grouped into seven major ideas. The responses also show that even though the elders teach their children traditional values, nothing was taught about environment sustainable practices.

The sixth question enquired about the students understanding of the relationship between modern sustainable practices and indigenous sustainable practices. Figure 3 shows that 78% indicated "No", that they cannot find any relationship, 18% had no idea and 4% indicated "Yes" that there is a relationship.

Curriculum mapping

This exercise firstly attempted to use a simple matrix, to find out the extent to which the curriculum of four Fiji secondary school subjects accounted for Fijian TEK and *Fijian environment sustainable practices*. The three secondary school subjects that were—analysed were Geography, English and Biology for Year 13 students. The second part of the exercise involves the formulation of outcomes or objectives relating to TEK. The objectives show the expected learning levels of the students under the *Knowledge* domain of the Blooms Taxonomy.

The Matrix (Table 3) shows the three subjects on the *Y*-axis and the outcome on the *X* -axis. The various scales of 1 to 3 indicate the *Knowledge* outcomes of the themes on each subject. The descriptions of the outcomes are as follows:

By the end of this lesson, students should be able to:

1. List the related concepts and ideas of the "indigenous Fijian TEK and environment sustainable practices".

Under this objective, the students are expected to discuss the following concepts:

- Social groups and hierarchy.
- Environment sustainable practice.
- Artefacts.
- Food and delicacies.
- Agricultural activities.

2. Describe the indigenous Fijian environment sustainable practices.

Under this objective, the students are expected to describe the following practice:

- Tabu.
- Methods of fishing.
- Planting seasons.
- Calendar of the year.
- Structural construction.

3. Translate vernacular words and activities into English.

Under this objective, the students are expected to translate the Fijian vernacular words into English.

As shown in Table 3, objectives 1 and 3 are present in

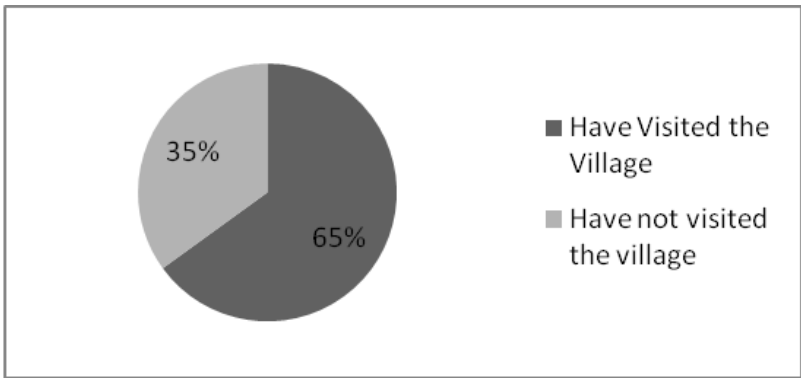

Figure 1. Koro frequency of students that have visited their village.

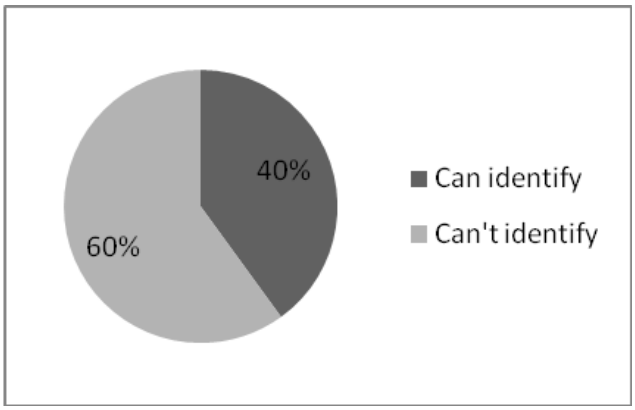

Figure 2. Frequency of students to identify indigenous environment sustainable practices.

Table 2. Indigenous sustainable practice.

S/N	Practices
1	Do not litter
2	Planting of trees
3	Cleaning the environment
4	Learning your dialect
5	Stop cutting trees
6	Protecting the reefs
7	Stop over fishing
8	Taking part in religious activities

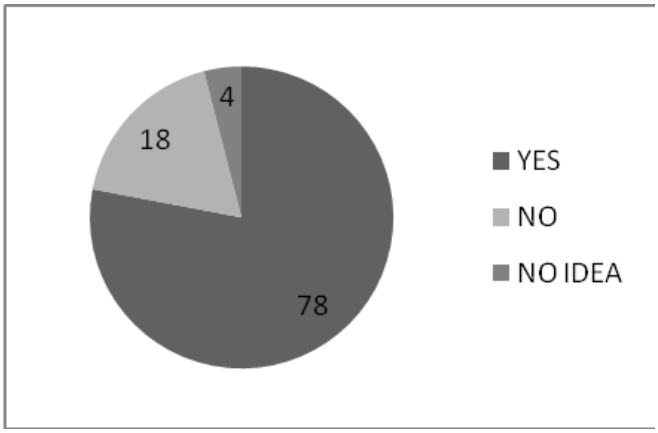

Figure 3. Relationship between modern sustainable practice and indigenous sustainable practice.

the Year 13 English syllabus and are apparent in activities such as Speaking, Reading, Writing and Researching. The student activities on indigenous Fijian cultures and practices are usually in the form of descriptive assignments and do not give any opportunity for the students to critically analyse the importance of Fijian environmental sustainable practices. Students have to conduct research on certain Fijian traditional ceremonies, activities and marked important events of the past. The reading and research activities often contain Fijian words that are to be translated by both

Table 3. The Matrix: TEK, Indigenous Fijian environment sustainable practices.

Subject	Objectives		
	1	2	3
English	x		x
Biology		x	
Geography			

teachers and students. The ideas of indigenous Fijian environment sustainable practice in Biology partly cover the second objective, but this was not prescribed in the Year 13 Biology Lesson Prescription. Biology teachers slightly touch on the concept of *Tabu* when covering research topics that deal with the marine eco-system and this would depend on the cultural background of the teacher and their understanding of the Fijian culture. The three objectives were not accounted in the syllabus of Year 13 Geography.

Conclusion

The results of the study and information gathered from literature confirm the importance of the school curriculum in moulding the perception of young people to appreciate the contribution of TEK and indigenous Fijian sustainable knowledge. Moreover, education curriculum can provide valuable instructions on how indigenous knowledge can assist in the achievement of the United Nations *Decade of Education for Sustainable Development* (DESD, 2005-2014). The limited nature or the complete lack of content on indigenous Fijian sustainable knowledge in the school curriculum is something that needs to be addressed.

Traditional knowledge should be woven into the existing curriculum and taught in a more formal academic setting. Specifically, the curriculum should appreciate and account for the indigenous cultural ideologies that promote the goals of ESD. It should be recognized that the inclusion of student's background knowledge into the curriculum is the basis of the constructivist philosophy that acknowledges the learners' abstracts understanding from experience (Semali and Kincheloe, 2002). The *Centre of Indigenous Knowledge for Agriculture and Rural Development* (CIKARD) based at Iowa State University has provided a variety of services and common interest issues in indigenous knowledge in the field of teaching, research and extension that can be used as a reference for Fiji (Semali and Kincheloe, 2002). The delivery of TEK content in the curriculum should attempt to connect to the student background and localising the learning objectives that give the students a sense of ownership and responsibility. A disconnected curriculum especially on local natural world may force a lack of understanding on the importance of cultural ecology, cultural biodiversity and its relationship to modern scientific approaches (Quave, 2014).

The Fiji curriculum should incorporate the common indigenous sustainable practices such as: the *tabu ni wai* (taboo of fishing ground: sea and rivers); *tabu ni qele* (taboo of vegetation and crops); *tabu ni vuata* (taboo of fruits); *tabu ni koro* (village taboo); *na veivakarokorokotaki* (respect to land and people) and *na vula vaka-Viti* (traditional months). Traditional Fijian knowledge is usually recorded through verbal mediums through songs (*sere or vucu*), dances (*meke*) or stories (tukuni); and the challenge pose is to have this knowledge written and properly documented. Teun (2014: 171, 172) emphasized the need for culture and cultural transmission to be documented due to the fact that many aspects of culture are not observable and therefore need to be represented in discourse and semiotic practice. Furthermore, the observable social and natural environments have attributed meanings that can only be clearly articulated through discourse (Teun, 2014). The minimal literature on indigenous Fijian cultures should not be a hindrance as new research and discourses can be written on indigenous sustainable development knowledge. Reference should be made to the works of prominent Fijian writers like Unaisi Nabobo (2006) *Knowing learning: An Indigenous Fijian Approach*, and Asesela Ravuravu (1983) *Vaka I Taukei*: *Fijian way of life*, to provide valuable insights on indigenous Fijian knowledge and culture.

The teaching of TEK and sustainable practices should not be left entirely to the school teachers; parents and elders should also play a part. The role of elders and parents is to be strengthened if they are to play an influential role of inculcating indigenous Fijian sustainable knowledge to the children. Parents and elders need to teach their children about the importance of the vanua and the connection between the vanua and ESD. Teaching the young children about their traditional origin and the indigenous Fijian conservation practices would assist in identifying the relationship between the cultural and modern contexts of sustainable development. Parents can play a more active role through fun practical activities around their homes and occasionally taking their children to their villages to experience village life.

Conservation biologists have confirmed that the future of the world depends on a wider knowledge and practical application of environmental science (Macdonald and Willis, 2013: 1990). The literature of conservation biologists often points to the consequences of humanity corporate failure to heed the message will cause the collapse of the ecosystem on which human civilization has always depended. Blending the ideas of conservation biologists with the cultural contexts would yield effective outcomes. Furthermore, the teaching of this idea should be done at a very early age of our education, so that students can have a better understanding about the environments when growing up.

The multi-racial composition of the Fijian society should also be taken into consideration when reorienting the curriculum as there may be other useful insights provided by other cultures apart from indigenous Fijian. The objection of having a common curriculum should also be taken into consideration when taking into account the multi-racial composition of the Fiji society. Lloyd (2005: 84, 85) highlighted the reasons for the objections as: in the first place the curriculum implies that there is a higher culture and presumably there is a lower culture in which many second language English speakers belong to. In light of the move to democratise the curriculum, it should also be acknowledged that other groups within the Fiji society would also want their culture to be accounted for in the curriculum; this can also be a challenge to the movement of indigenous knowledge. Literacy and education has always been seen as not neutral to indigenous communities and this has raised considerable ethical issues in research (Alfreosson and Stavropoulou, 2012). Today, the call for inclusion from many groups within learning institutions surges the issue of revising the ethical standards that arises, in particular research on indigenous knowledge.

Reorienting the school curriculum must also account for the different geographical settings of the indigenous community where some people live in the remote smaller islands and some in the interior of the mainland. Establishing some common grounds should be the task of curriculum developers where the indigenous aspect of the different communities is fairly given a place in the curriculum.

The current lifestyle of the people should also be taken into account when attempting to reorient the curriculum or look back into the past as many Fijians have weakened their traditional ties, due to the effect of urbanisation and changing socio-economic environments. Many indigenous Fijian have moved to urban centres and are now living with people from other communities, this has also change their mind set to look at issues from a broader perspective other than their own.

Young indigenous Fijian people of today have become less appreciative of their traditional culture and cannot comprehend the relationship between traditional knowledge and modern scientific knowledge. This study has proven that the ideas espoused by the United Nations *Decade of Education for Sustainable Development* (DESD) (2005-2014) are foreign to many young indigenous Fijians. The importance of traditional knowledge has been widely acknowledged by literature (Ruddle and Chesterfiel, 1977); community based TEK research approaches (Johnson, 1992); application of TEK to development (Brokensha et al., 1980 in Wood et al., 2013); resource management (Klee, 1980 in Inglis, 1993); traditional conservation (Moruata et al., 1982 in Inglis, 1993); traditional coastal resource management system (Lasserre and Ruddle, 1983 in Inglis, 1993) and studies of traditional marine resource management system in the Asia and Pacific (Ruddle and Johannes, 1989 in Stevens, 1997).

The value of indigenous Fijian sustainable knowledge provides useful insights towards achieving the ESD goals. It appears clear, in terms of indigenous Fijian knowledge of sustainability that Fijian values and voices need to be heard and taken into account when educational and developmental directions are being planned. The struggle towards making opportunities to Fijian knowledge, values and culture should be widely understood by people in Fiji. The first step is to take a consistent and integrated effort to ensure that indigenous Fijian knowledge is documented and used to inform educational development and other forms of development in Fiji. Young indigenous Fijians should appreciate the importance of protecting and preserving their *vanua,* and traditional knowledge, this can be achieved through research and studies of indigenous Fijian traditions and culture.

Indigenous knowledge has a great impact to teaching and learning situations in a significant way because this knowledge directly originated from the students background with real-life experiences (Semali and Kincheloe, 2002). Indigenous Fijian knowledge can provide the basis of ESD that acknowledges the use of TEK and ideas through the development of a framework. Such framework can include elements of indigenous knowledge that can be blended with modern scientific sustainable ideas and this can be incorporated into the high school curriculum. An intergraded approach to curriculum design should effectively accommodate the TEK, in particular the Trans-disciplinary integration explained by Drake and Burn (2004). Trans-disciplinary integration develops student life skills as it applies interdisciplinary and disciplinary skills in a real life context. The trans-disciplinary approach acknowledges that knowledge is interconnected and independent (Drake and Burn, 2004). There is also a great need to develop guidelines to safeguard traditional knowledge about conservation and this must involve the strengthening and enforcement of Fijian traditional knowledge and TEK.

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