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Socio-culturally Embedded Vedic and Ethnoecological Knowledge: Decolonising Perspectives and Practices

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Abstract
This study explored the Vedic and Ethno-ecological knowledge embedded within cultural practitioners, teachers and students. To obtain the objective of this explorative and decolonising study, I purposively selected two Ethno practitioners, two science teachers and four students. About 55 minutes focus group discussion was carried out with selected students and near about one-hour interview was carried out with Ethno practitioners and teachers. The collected information was transcribed and then translated into English and main themes were identified using the Rhizomatic approach by connecting the nodal point to identify main themes. Then each theme was analysed using the abductive approach to justify the participants' arguments. The finding indicates that Vedic and socio-cultural practice consisted of world peace and sustainable development ideas. Cultural students learned this knowledge by seeing their elders' day-to-day practice. Teachers are also seen aware of the effect of modernisation but show reluctance to implement it in school science teaching. Local as well as the central government could be serious to implement Vedic and Ethnocultural knowledge to preserve the earth as well as the whole universe. The Vedic and Ethno knowledge is seen fully supported for the decolonising western-based pedagogical practices.
***Keywords*:** Ethno-ecology, cultural science, ecological knowledge, spiritual practice, knowledge transformation

Introduction

Vedic and Ethnoscience have so many branches of study. These are practicesof much ecological knowledge since the Vedic periods and transformed into a new generation as the Ethno knowledge. The Vedic hymns indicate that Vedic seers were serious to save the whole universe. The knowledge was seen by our Vedic seers by the meditating contemplation and these were transformed into new generation through shruti (listening) parampara, and

saved by the new generation byusing their culture. The most popular word in Ethnoscience is ethnoecology. Ethnoecology represents sometimes the whole Ethno science. However, I have taken it here as one branch of Ethnoscience. Ethnoecological science/knowledge has been practised in Vedic culture since the development of human civilisation as the spiritual form. If we see the VedicMantra, the whole universe is considered as a sacrifice (Yagya) and natural cycles such as the carbon cycle, water cycle, nitrogen cycle, Saurya cycle, Moon cycle and Ritu cycle help to protect the environment and save from pollution (Dvivedi, 2004; Luitel, 2063, 2075 BS,). Moreover, Hindu religious people worship Peepal as a form of Bishnu (Swami Pravupadh, 1997) and protected it as ritual values since the human civilisation. However, it ultimately helped to control the air pollution by absorbing the pollutants (Carbon-dioxide) from the atmosphere, provide a huge amount of oxygen and used as Ayurvedic plants (Luitel, 2063 BS, Kumar, 2008). Not only that, old Peepal, Bar and Swami can also be seen everywhere on the walking ways of people (*hindul garne batoma*) in which knowledge is seen appropriate in the present contextof COVID-19 Pandemic to provide the natural oxygen for patients worldwide. Allopathic doctors are also used to say to sit near the tree of high oxygen providers to save from the decreasing of oxygen level in lungs.

Moreover, Vedic mantra mentioned the world peace saying peace of the sky, peace of mid-region, peace of earth, peace of waters, peace of plants, peace of trees, peace of all-gods, peace of Brahman, peace of universe, peace of peace; may also that peace come to me! (Luitel, 2063, 2075BS). These universal peace Mantras also supported the protection ofthe environment forever (Luitel, 2075 BS). In this context,the purpose of this study was to find out what types of ecological knowledge are embedded and practisedwithin cultural people and how thiseco-cultural knowledge supports the sustainable development of the society.

Methods and Procedures

This is an exploratory type of research. It applied the decolonising research approach (Chilisa, 2012; Held, 2019) which supportsdigging out the knowledge, idea and practice of socio-cultural people. This is the relational type of research (Datta, 2018). I have taken the local purohit, secondary level students, locally available engineering practitioners, and teachers as the participants of my study because they were already familiar with me and I could develop the two-way relationship easily to dig out their ethnoecological knowledge. So I purposively selected (Cresswell, 2007; Yin, 2016) local purohit/pandit to understand the Vedic knowledgeand how they have applied this knowledge in their daily practice. Other participants were local teachers who were used to teaching modern science at the school level. However, they are practising the local ecological knowledge in their society knowingly or unknowingly. Other participants were local Ethno engineers who werecurious about the sustainable development goal of the United Nations although they were educated through the western education system. Like that some locally available students were also selected for this study to understand the ethnoecological practice and learning condition at their institution. This is a decolonising type of study, and I developed two ways relationship for

the participants. Applying an open interview as well as through sharing circle (Smith, 2012; Wilson, 2008) and focus group discussion, the required information was taken with the local Ethno ecological practitioners, teachers, purohit/pandit and students. I met them 2-3 times based onthe required data for the saturation of this study.

In the process of data collection, I met each participant at their workplace. In detail, I explained my purpose of data collection and requested to provide the required information. I ensured them their name will not be disclosed without their permission. For that I used pseudonyms (Cresswell & Poth, 2018). Sowever, being an explorative type of research, some of the participants were ready to disclose their names so that I have used their original names as well on their permission.

After completing the information collectin process, I analysed the data usingthe Rhizomatic analysis process without using the traditional coding system because "Rhizomatic analysis works against the reductionism of conventional coding methods through productively putting to work a network of connectivity and relationships between theories, practices, data, ethics, and other bodies of knowledge and being that are always already becoming"(Higgins, 2014, p. 6). I applied this analysis approach in my information analysis to see the relational connectivityof different ideas expressed by different participants and linked as the form of a Rhizome but not like the root of a tree in a single-centred form. Then it was discussed with my argument and conclusion was determined. For the trustworthiness of data,I did the triangulation of data relatingto the voices of different participants for ensuring trustworthiness.

Results and Discussion

In this section, I have discussed the main arguments of the participants based on the main themes declared from the information as the Rhizomatic theme detection process (Higgins, 2014). Each theme is prescribed below with the participants' arguments.

Spiritual Practice about the Preservation of Ecology

Most of the local people view Ethnoecological knowledge as a socio-cultural, political, economic, spiritual, religious, preservation and developmental perspective. Internationally it is viewed as the political, economical and developmental perspectives (Basiago, 1999) but locally it is viewed spiritually and religiously. However, ultimately it helps for the preservation of the environment and the whole nature. In this context, I remembered my cultural scenario. My parents taught me that

> *we never throwthe waste materials in the water. Nagadevata (snake) consists of in the resources of water so that we never do urinate near the resources of water. If we do that Nagadevata will be angry with us. We never cut the Peepal because it is the form of Bishnu. We never cut the trees of Devithan (sacred place) because there consists of the Devi. Under the local trees, our villagers worshipped Kshetrapal devata (called Gaddess) and worshipped them continuously. In our cultivating field there consists*

of Bhuve devata which protects our crops and to be a landslide. We should be always serious about the worship of these local devatas (live events shared by my parents).

My parents' arguments indicate that they were serious about their surroundings through the cultural spiritual knowledge which is supportingto preserve the local environment. Peepal, Bar and Swami and sacred place were preserved as spiritual forms, nature is considered a natural god and is worshiped continuously which ultimately supported for the preservation of the natural environment. Moreoever, another interesting event is also shared by my father as:

we use nine types of plants as Samita (home garne daura) representing nine planets of the universe such as peepal, aak, khayar, pannus, kush, dubo, dumri, datyuwan and swomi in Yagya (sacrifice) to do Hava. However, they are supporting topurify the environment. Like that sal, tulashi, pines, bel, chap, aapa, palas, champa, dhaturo, sunakhari and dhupi are also used to burn in sacrifice remembering God. They are producing good smells that support making the air clean. Not only that we burn the above things as a form of Charu in doing Havan with the mixing rice, til, barley, kush, local smelling flowers with cow ghee in a sacrifice which supports to clean the environment and rainfall in an appropriate time. Different types of smelling flowers are used in Havan Yagya which provides a good smell (medicine) around us and supports to make the environment peaceful. The Vedic sound which we pronounce also expands in the sky and helps to clear the air around us. If there is no rainfall for a long time, we used to do Homadi Yagya that supports rainfall. The Vadaik mantra such as Prithivi santi, Akash, santi, Antariksya santi, Apa santi, Banaspataya santi, Dehu Santi! Santi!! Santi!!!....supports for the Bishwo (world) peace (discussion with my father at different times).

My parent's argument was based on religious and spiritual understanding that helps to protect and keep the environment clean. The plants and pure cow ghee that they used to sacrifice as the religious form naming different planets are also found supporting to deliver a good smell and help for environmental purification as well as rainfall in an appropriate time. Like that my father used to say that *purbaakashma bihanpakha sarga dadyo bhane pani parxa* (if the golden cloud is seen in the morning at the eastern sky, it supports rainfall). It was said by the long-time ecological observation and experiences. As scientists used to say, ecological balance is properly used in our culture. Modern science also justified that Agnihotra helps to purify the air. If we burn the mixture of cow ghee and rice grain it produces Acetylene which absorbs a huge amount of pollutants and diseases from the air and minimizes the psychological tension (Chaganti, 2020). It is considered that burning ten grams of cow ghee produce one ton of oxygen in the atmosphere. Moreover, if one spoon of pure cow ghee is poured on the burning cow dung,it can produce one-ton oxygen (Mazumder, 2021). The scientific justification about the use of local sacrifice practice also indicated that what local Priest/ Pandit are doing through the Homadi Yajna ultimately supported for the preservation of the environment.

Impact of Globalisation on the Local Ecological Practices

In the present day, globalisation's impact can be seen in the local ecological system. Global development practices are seen as the challenges for the conservation of local ecology. In this context, the local teacher and engineering practitioners have somehow different views about the environment conservation practice. A teacher of a local school and an engineer working in an NGOsee the present ecological practice with the economic and developmental perspectives as globalisation and colonial effect. In the group discussion, they expressed:

> *drying the local water resources are not the cause of us (local people). It is the globalisation effect. America including developed countries produced a huge amount of carbon impacting our environment indirectly. Present industrialisation of the world increased the heat of the world ultimately impacted on our water resources and melted the snow of the Himalayas. Nowadays we become "one world one nation". We can not separate from the worldwise effect of climate change. In previous days our parents' conservation system was seen as appropriate but now it is being failed. Our ancestors know worldwise preservation knowledge saying " OM sarbe vabantu sukhina, sarvey santu niramaya, sarvey vadrani pasyantu….".The whole world should be convinced to use the ethno practice to preserve nature as the saying of our ancestors. Locally only we cannot preserve the environment and local materials. We should conduct research work to see the connection of local knowledge internationally. (discussion with participants)*

The global economic and political effect can be seen in world-wise ecological practices. The pollution produced by multinational companiesis also seen affecting the ecological sector of developing countries like Nepal. The chemical fertilizers, pesticides and insecticides prepared by them are sold to developing countries. So the global effect can be seen in local ecological sustainable use of resources which is challenging to control in the present days. In this context, a local teacher Yam Bahadur viewed that:

> *our old technologies and tradition are important in previous days but they are functionless due to the globalisation effect. Global technology affecting the local level so that local production cannotdo a competition in the present context. In previous days we used the fume of Damkane Jhar(local herb) to control the mosquito, Udus and Gwame but it does not work today because they have developed the survival capacity due to the overuse of chemicals and pesticides. People used to go competitive market to buy cheap substances rather than the use of ecologically friendly materials*.

His arguments indicate that the use of unlimited pesticides, insecticides as well as technological practices affected the global environment. We are also facing an environmental problem. However, we do have no industrial utilisation. Nowadays our environmental problems are caused by the global application of unfavourable use of natural resources. Our ancestors' slogan World Peace (Bishwoo Santhi…) is seenrelevant in the present context.

The Local Practice for Ecological Conservation

The students studying at grade eight also found to be aware of the preservation of the natural environment. Their argument indicates that students learned so many things seeing and experiencing the work of elders and social knowledgeable others about the preservation and conservation of natural resources without studying in a formal class. In the focus group discussion, another interesting event that was added by a student is:

> *in previous days people used Jal, Vook and somehow Khirro for the purpose of fishing in rivers but nowadays people use Pesticides and explosion of bomb for killing the fishes, which is damaging the small fishes of the rivers and it affects the whole ecosystem and our health system. We could use the natural system of fishing which could save the small fishes, water ecosystem and ultimately it saves our life.*

It indicates that sociocultural students are serious about the preservation of local environment. They have the local knowledge of how to use the natural resources considering the socio-cultural impact of hazardous impact of explosive material in the ecology.

Students are seen serious and have the knowlede of locally available materials that is being environment friendly. They have more holistic and integrated knowledge than they have studied at school. They have seen developing an advanced knowledge involving in the social function with their elders and knowledge of others. This knowledge can be considered as the STEAM in the present context of Nepal because they have used the science, technology, engineering, arts and mathematic (STEAM) approach collaboratively in their learning. About the use of chemical fertilizer and its social impact on society, a rural student expressed the life experiences:

> *in previous days we did not use any types of chemical fertilizers and our soil was also soft but nowadays we have started to use the chemical fertilizers so that it made the soil compact, produced a high amount of crops for a short time but ultimately it damaged the soil's productivity increasing the acidity. Moreover, rainy water carries the chemical fertilizers and pesticides and mixed them in the resources of drinking water, it evaporates and mixes with air which we inhaled in respiration. It impacted human, land, water, animals and their ecosystem. Additionally, rainy water carries them in the river so that they harm human health as well as damages the ecosystem of water destroying the fishes and other water animals. So we should try to use alternative local ways instead of chemical fertilizers and pesticides to use in the land.*

Moreover,students were aware of the impact of human activities as a form of developmental work that directly and indirectly impactedthe local environment. Thedestruction of natural resources as a form of developmentis common in the present day. The mysterious view of students indicate that they are also social experts but we are undermining their knowledge, voices and attitudes; making their mind overcrowded teaching the bookish knowledge as verified, authentic and scientific at school. Another student expressed hisviews as:

> *in previous days sacred forest, pond and water resources are also preserved as a sacred groove which was supporting to preserve the natural resources in a religious form,*

however, these are related to scientific values. Not only that these days unmanageable use of dosar as a form of development is destroying the herbal medicinal plants, destroying the structure and productivity of soil, forest, water resources. These are affecting the whole ecosystem as well as the health system of human. To preserve these natural resources and traditional materials curricular knowledge is being ineffective. So that there should be a mandatory policy in the curriculum to manage this knowledge. It has tried to address the profession and skills subject in class 6-8 but they are not complete. Detail knowledge should be provided in the science curriculum to preserve the natural resources linked with religious knowledge. We should be aware of the values of the natural resource. Otherwise, these types of inappropriate use of natural resources convent the earth one day in the 'plain desert'. We should be considered the sustainable development practice of natural resources.

It indicates that students are serious about their present development practices. The present development practice was not environment friendly. The use of doser unproperly destroys natural forests as well as resources of water in most of the remote areas of Nepal. The un-proper developmental practice provided hazardous effects both in ecology, agriculture and medicinal plants due to destroying forest resources causing landslides everywhere. The present science curriculum could not address such types of destructive events. The holistic conceptis amalgamated within the Ethno agriculture, Ethno ecology and Ethno medicineand their interconnection supported the preservation of the natural environment. In this context, a science teacher expressed his life experience as follows:

this area consists of the bank of the Daraudi river. The profession of this area peoples was fishing. On the previous day, we got the fishes anywhere which we used to trap by using balsi and making a dam. I have also used to make Thitri and Dhadia (used to trap the fishes). We only trapped the big fishes. But nowadays, fishes are destroyed due to overuse of current and poison (toxic) which took the great problem in water ecology, destroyed the taste of fishesand indirectly impacts onhuman health also.The overuse of poison destroyed a huge amount of fishes and its decaying smell was expanded around that area which I felt some years ago. And those people who are based on traditional fishing are also transformed into agriculture. They are trying to apply modern agricultural practices to produce a high yield. Nowadays, people are motivated towards agriculture and use a huge amount of chemical fertilizers and pesticides. Fertilizers supported the productionof a huge amount of agricultural products. However, they undermined their impact on health and the environment

Science teachers are seenin favour of curricular knowledge. They are found to teach bookish knowledge. However, a science teacher quoted that our Hindu culture supports the preservation ofthe natural environment, '*burning system of the dead body of Hindu religion helps to decrease the air pollution and keep the environment clean,*' supports for the control of air and soil pollution and to keep the environment neat and clean.

Moreover, students were found aware of the use of chemical fertilizers and their impact on the environment. However, its use is seen growing day byday. In the group discussion, they expressed that

chemical fertilizer destroys the structure of the soil, make soil, air and water polluted. Overuse of chemical fertilizers and pesticides destroyed the earthworm and other animals which are helpful for crop production as well as environmental protection. Deforestation helped to destroy the wild animals, increased soil erosion, decrease water falling rate and stopped the sources of water, however, farmers are used a huge amount of both chemical fertilizers and pesticides in their farm for the production of a high quantity of crops and vegetable. They overused the forest resource without considering its bad effect(discussion with students)

Students were aware ofthe effect of pollution and its effect on human health as well as our natural environment. In the group interview, a student opined that "*the pollution carries chronic diseases, increases the earth temperature, deflection of the ozone layer and direct inter the ultraviolet rays on the earth surface, melts the snow of Himalayas, die the animals of rivers, destroy the birds, increase the production of carbondioxide and unwanted gas which make the environment pollutes and affects the whole ecological system"*.

Moreover, students were seen aware of the control measure of these events. They suggested that if we cut one tree, we should plant two trees, should prepare a National park, conservation area and wildlife reservation, do not use chemical fertilizers and pesticides, recycle and reuse the materials, not use plastics, burythe dust materials, stop the deforestation and fire in the jungle and involve all the institution to preserve the natural world.

The analysis and discussion of participants' arguments indicate that the cultural people have so much socio-cultural knowledge which was practised from the Vedic period as spirituality and transformed into a new generation. The Hindu religious practices consisted of ecological knowledge which ultimately supported environmental conservation and preservation. Their daily practice supports for the peace and prosperity of the whole world. The Santi (peace) mantra that is pronounced by pandit in the Homa Yajna was not only supported for people or nature but whole universal peace was carried out. Like that the Homadi Samagri which was used in Yajna areproduced antibiotic and antiseptic fumes as well as the sound of the mantra,is also supported to kill the bacteria and viruses. All these events show that the cultural people and their practices are seen as scientific what today's modern science used to say science. The cultural people's practices ultimately supported the decolonizing of the present science teaching (Belczewski, 2009).

The socio-cultural practitioners and students are also serious about the use of local technology and practice for the preservation of the natural environment. Students'holistic knowledge and their curiosity about the preservation of the natural environment indicate that this knowledge could be included in the present school science curriculum. Students andteachers are also seen serious about the use of Ethnocultural knowledge in the science curriculum. Their arguments are also seen as relevant and supportive for the preservation of the natural environment, use of local technologies, and eco-friendly agricultural practice which ultimately support theholistic development of the natural environment.

From the above discussion, I can find that local prest/ pandit are also supporting the preservation of the natural environment through spiritual and religious ways. Socio-cultural practitioners are also seen serious for minimizing the global economic and empirical impact as well as the use of locally appropriate conservation and preservation practices. Teachers are also seen serious about the present context of ecological degradation, use of pesticides and insecticides, and its impact on the environment. The awareness of the local people, teachers, and students will be supportive of the preservation ofthe natural environment and ultimately help for decolonisation.

Conclusion

The Vedic seers were serious about the preservation and conservation of the natural world.The knowledge practised by Vedic seer was culturally friendly and supported for the ecological balance in the world. The study shows that all pandits/ purohit, teachers, students and local Ethno practitionerswere awareof and serious about the unbalance and unsystematic modern developmental practices that are destroying our natural phenomenon, destroying the land structure and disturbing natural resources such as forests, ponds, historical temples, and natural phenomenon. However, school science teaching is based on the western hegemonic teaching culture. Sothe present school science curriculum could be revised and try to include that community embedded knowledge which supports for the decolonising present curriculum. The landslide, flood, destroying forest resource and stoping the water resources are the main problemsof the present situation.To achieve the 21st century sustainable development goals world wisely, sustainable use of natural resources in a holistic form is a prerequisite. However, present school curriculum system cannot make the stakeholders aware toward these problems. In the present context local as well as central government should be aware to implement the culturally planted knowledge in the school curriculum from lower to a higher level for decolonising the present science teaching.

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