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**Implications of preserving traditional wisdom towards  
sustainable livelihoods and natural resource  
management, in context to designing culturally relevant  
curriculum for children of the indigenous communities**

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A THESIS TO BE SUBMITTED TO  
THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH  
SCIENCES AND TECHNOLOGY



FOR THE AWARD OF THE DEGREE OF  
**DOCTOR OF PHILOSOPHY**

BY

**HUSSAIN EBRAHIM**

Ph.D. Reg. No. - 20821012746

UNDER THE GUIDANCE OF

**Dr. M ABDUL KAREEM,**

Associated Professor

DOCTORAL ADVISORY COMMITTEE

(Dr. ARTHUR SELWYN MARK, Dr. INDIRA VIJAYSIMHA,

Dr. SIDDAPPA SETTY R, Dr P.M. UNNIKRISHNAN)

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**THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH  
SCIENCES AND TECHNOLOGY**  
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**DECLARATION BY THE CANDIDATE**

I declare that this thesis entitled “**Implications of preserving traditional wisdom towards sustainable livelihoods and natural resource management, in context to designing culturally relevant curriculum for children of the indigenous communities**” submitted for the award of Doctor of Philosophy to THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND TECHNOLOGY, Bengaluru, is my original work, conducted under the supervision of my guide Dr\_M. Abdul Kareem. I also wish to inform you that no part of the research has been submitted for a degree or examination at any university. The references, help and material obtained from other sources have been duly acknowledged.

I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

**Place: Bengaluru**

**Date:**

**Signature of the Candidate**

**Name of candidate:** Hussain Ebrahim

**Reg. No.:** 20821012746

**THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH  
SCIENCES AND TECHNOLOGY**

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**CERTIFICATE**

This is to certify that the work incorporated in this thesis **“Implications of preserving traditional wisdom towards sustainable livelihoods and natural resource management, in context to designing culturally relevant curriculum for children of the indigenous communities”** submitted by Hussain Ebrahim was carried out under my supervision. No part of this thesis has been submitted for a degree or examination at any university. The references, help and material obtained from other sources have been duly acknowledged. I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

**Research Supervisor**

**Dr. M. Abdul Kareem**

Associated Professor

The University of Trans-Disciplinary Health  
Sciences and Technology

74/2, Jarakabande Kaval, Post Attur via  
Yelahanka, Bengaluru, Karnataka 560064.

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## THESIS SYNOPSIS

The need for cultural contextualization and ecological sensitivity to be revived in tribal education seems to be significant, given the backdrop of transculturation and critical race theories that predefine learning for the social majority. Engaging with arts for cultural expression, mental wellness and community development; and environmental studies for holistic and integrated schooling; were a success across rural to semi-urban schools as shown in this study.

The methodologies employed in this thesis include: evaluating multi-sensory learning scores across students and their chosen electives, extended to the career choices linked to the natural capital of the micro-society. It was found that tapping into eco-tourism potentials and reviving the handicrafts market pertaining to cottage industries help build tribal identity. Other research methods engaged with during this study include collating auto-ethnographies of students in the form of artistic expressions, and environmental anthropological accounts of the teaching and support staff in the form of healing and training workshops conducted towards tribal integration into the micro-schooling community.

Results emphasize the importance of environmental science as a medium of interdisciplinary learning, and visual and performance arts as a bridge to linguistic barriers. It was further suggested that an educational framework tied the pedagogy and philosophy of each school uniquely to its student batch composition across scheduled tribes and minority castes for that academic year. Role plays, drama and skit, theatre, music and dance, art 'melas' etc were essential to nature centric and culture focused learning.

Lastly, a thematic learning framework that incorporated community fests, cultural programmes, and nature-based place-centric student-interest-led activities could proportionately enhance learning for children from minority backgrounds. The annual theme must be fluid and cater to the learning goals of each unique student group. Sub-grouping is most effective in mixed-age categories, across subject specializations

and with practical / applied teaching approaches. Various teacher healing sessions, alumini discussions and art-craft exhibits together reinforce a collective ownership towards child development and career preparedness.

The curriculum designed was culture inclusive and nature specific to be applicable to other states and schooling systems across India. The activity booklet co-designed with a regional NGO also suggested learning engagements that are bio-geographically and socio-economically contextual to the location of the school and the student cultural composite that fluctuates each year. Eco-tourism and local not-for-profit organizations, were the only industries that students could engage with at the tribal study area. Cultural exchange potential was higher in the heterogeneous migrant population in the city outskirts and fringe areas. Yet, reasserting caste and tribe identity here was much more challenging.

Thus, it was revealed that tribal or caste identity rebuilding and pro-active citizenship at schools could rekindle community-based resource management and help support sustainable livelihoods for the minority populace even upon conditions of migration to peri-urban spaces. This research could apply to climate science informed curricula and also be tested in urban school settings.

## **List of Publications and Seminar Presentations**

This thesis

Papers

H Ebrahim,2023, A Capabilities Framework that Ties Pedagogy of Tribal Learning to Sustainable Livelihood Outcomes amidst the Indigenous Communities. National Educationist Council 13, 15-22, 2023

H Ebrahim.2023, Tribal-linguistics in a place-centric, community-engaged schooling model for tribal kids,Tribal Transitions in India - Issues, Challenges and the road ahead, 133-142, 2023

H Ebrahim,2023, Art Therapy for the Healing of Tribal Kids with Special Needs - A Case of Multiple Intelligence in Learning Styles, Indian Journal of Psychology and Education 13 (1), 28-40, 2023

Seminars

Hussain E, Intellectual Tradition amidst Tribals - redefining Indigenous Environmental Knowledge that favors Sustainable Livelihoods towards effective Community Conservation efforts. The Quest for Emancipation - Intellectual Traditions among the Dalits and Tribes in India, Department of History - Tetso College and Indian Council of Social Science Research

Hussain E, A comparative pedagogical approach to contextualizing tribal and suburban education in aspects of culture and nature - for children of Adivasi origins and migrant labor populace of South India. The IP Santiago Memorial Conference, Seeking Cosmologies of Restorative Justice in the Anthropocene: Towards Planetary Futures in the Biocene, United Theological College, Bangalore

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Keywords: Tribal learning, critical race theory, transculturation, environment and arts.

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## **Chapter: 1**

# **INTRODUCTION**

Tribal children have the means to learn from nature. They are more gifted than an urban kid in a city who struggles with kinesthetic skills of learning from applying theory. They are even better at learning than the rural poor who continually face in access to basic amenities while migrating to towns for waged earnings. Yet their wisdom over generations has been dwindling in the face of land use change and development of dams and plantations around the fringes of forests. It is thus key to protect this ancestral ecological knowledge and plug it back into their system of schooling. This builds resilience and entrepreneurship amongst tribal youth.

### **The case of tribal schooling**

The issues relevant to the schooling of tribal children vary from issues faced in educating other minority groups in India. The concept of place-based learning has been implemented across alternative pedagogies that invoke in children - a direct engagement with their immediate surroundings, situating their educational needs in context to skill-building that is relatable to the local environment and its resources. More-so with regards to tribes, kids from aboriginal descent find it challenging to relate to mainstream and national narratives while learning of a state-level is imparted to them. For effective learning amidst tribal students, a 'culturally sensitive, ecologically valid and economically viable programme of education' will require evolving and implementation. (*Mishra RC, 2008*) [23] But before a discourse analysis of the education sector in context to tribal schools, one must attempt to outline the nature and characteristics of what being 'tribal' encompasses for Indians. Anthropology, as a discipline, offers a lens to explore what constitutes tribalism. Ethnography, as a research methodology in the social sciences, attempts to narrate 'the tribal perspective' as truthfully as a member of the clan would visualize their own characteristics.

The main challenge on the field has been tapping into the potential of ecotourism. The premise of tourism in forests being undervalued by the lower-income to elite using it

as a respite from urban and rural chaos. The environment is thus polluted and degrading with illicit use of plastics, consumption of drugs and alcohol etc. making the ecology unsustainable. With heightened human-wildlife conflicts and land use change, the potential of reviving a sustainable means of tourism lies in the hands of tribal youth.

There seems to be a lack of cultural integration that helps build narratives of tribal identity, in empowering unique and diverse cultures, thus providing room for them to shape their own ways of learning. With the advent of a modern, global and urban pretext to academic qualifications and job availability, the skillsets of a forest dweller are forcibly estranged from that community - leaving them no choice but to migrate and up-skill themselves in towns and cities. We've brought tribal kids to schools in nearby villages, the challenge is to offer schooling in context to the needs of the tribal populace within forested landscapes. Very few NGOs offer such an educational service that caters to the ancestral ways of life, yet not depriving tribal folks from choosing to migrate to modern ways of living.

The role of anthropologists in defining the term - tribe, has been reported back-then to be misconstrued and divergent, as "it cannot be said that anthropologists are themselves in agreement about the concept, and their disagreement is, if anything, even larger today than it was in the past." (*Beteille A, 1986*) [3] The individuation of household size to nuclear familial settings, its male representative as the dominant contributor in a patriarchal society, and a promise of improved standards of living, by migration: has further created a generational gap amidst the tribes in their understanding of what they truly aspire as an independent being capable of making decisions, as opposed to being a community representative with a respect for consensus in collaborative choice. This has led to inequities and displacements - dividing the family unit into conservative orthodoxies and modernized millennials who choose to continue to stay within, or eventually leave forested landscapes.

Before delving into the problems in forested landscapes, it is essential to clearly define what constitutes a tribal narrative and a tribal identity. The government of India has enlisted scheduled tribes, but the inaccess to amenities and incentives amidst tribals is

still a grave matter of concern. With their lack of knowhow around regional politics, their local biogeographies not matching state boundaries, and their dialect merging interstate linguistics that are more oral histories than documented in a particular script. Folklores are their only sense of belongingness beyond the nationalization of their identity that the governments are keen on. More-so, their own cultural identity and relation with nature is what they care about.

While one can argue that primitive determinants of culture can be traced to the resources available and the weather conditions that favor continuity of life via a form of cultural expression, it is also true that cultural values frame the basis for conserving resources and reforming ecological landscapes. But what remains common that ties tribes to an identity of-sorts, is 'culture'. A concept of 'cultural core' - whose features represent subsistence activities and sustainable, small-scale economic arrangements. The core includes such 'social, political, and religious patterns' that govern, for example, seasonal income-based livelihoods that are dependent on natural resources. Other 'secondary features' are determined by purely 'cultural-historical factors' - they attempt at outwardly ascribing distinct features to 'cultures with similar cores'. 'Cultural ecology' as a theory suggests that cultural traits form the basis for the use of the environment in 'culturally prescribed ways'. (*Steward J, 2016*) [37] Ecosystem dynamics often manifest due to cultural impositions tied to traditional beliefs around the approach taken by a community in sustaining themselves by depending on nature's reserves. This theory strongly suggests co-dependencies of tribal families with ecosystem services are a result of constant intergenerational engagement of tribes with the wilderness and its natural wealth. While one can argue that primitive determinants of culture can be traced to the resources available and the weather conditions that favor continuity of life via a form of cultural expression, it is also true that cultural values frame the basis for conserving resources and reforming ecological landscapes.

While studying tribes, we often miss out on their voice, with researcher bias and / or the agenda of a granting agency alongside institutional interest in associating with the discourse on what constitutes tribal identity. Anthropology seems to be the nearest methodology that one can adopt in trying to give written word to the feelings,

experiences and thoughts of tribals alongside the agency of their community in acting-out to external stressors.

Within the framework of 'cultural ecology', used to link tribal wisdom with intergenerational bridges in adapting to modernisation, these 'cultural roots' need to be preserved towards restoring ecological balance. No other community, other than tribes, has the potential to coexist with wildlife and co-manage natural capital within the confines of forested landscapes. 'Tribal world views' exemplify coherence and a sense of completeness, which can be revealed only when we engage on a daily basis with the 'inner life of the people'. (*Miri S, 2013*) [22] And many ecosystems fail to continue to provide services once tribal settlements are dislocated from their resource-use-rights. Building awareness on unsustainable practices followed by growing tribal populations can help mitigate human-influenced stressors on environmental regeneration and ecological balance.

Tribals have borne the most brunt of rehabilitation due to displacement. They've been marginalized to the most extent possible, with menial returns for them being forced out of their homelands in the hope of unfulfilled promises till date. And the mindset of displacing aboriginals has been borrowed from pre-independence and is still a lived reality for many hamlets in the name of scientific forestry, conservation, trade of forest resources etc. The commodification and privatization of forest derived natural resources such as water, hydropower and irrigation to name a few around rights over rivers for example.

It is thus crucial that we embed a strong sense of entitlement over the sustainable management of hydel catchments and streams, for example, by the tribes in accordance with customary practices followed by their ancestors. This ecological wisdom must be preserved through learning in schools that impart education not just to tribal children, but students across a mixed strata of castes and class at different state-led geographies of concern. This would ensure reappropriation of use-rights and respect towards their cultural origin by non-natives, thereby truly including them in our socio-economies and policy-making strategies.

## **Chapter: 2**

### **PROBLEM STATEMENT AND HYPOTHESES**

It is important to reappropriate ancestral knowhow of the land as learning material for tribal students to gain perspective on the ways of their forefathers. This ancient wisdom is lost due to vulnerability faced by minorities such as the scheduled tribes, in the world and in India specifically. To re-anchor the youth with traditional knowledge builds resilience amidst tribes in the face of dislocation and migration.

#### **Tribal relations with nature**

Delving into how tribal children relate to nature, it is important to first examine what they already know, and what they may aspire to know - across age groups. Due to linguistic barriers, outsiders have understood tribal knowledge by experiencing the process of craft-making with them. Be it basket weaving, furniture design or organic dyes, cultural expression via arts and crafts has proved to be a dialect used across diverse cultures. There exist other modes of 'cultural expression' in any community, be it folkart, oral histories, or urban concepts of design and cognition of 'cultural space', music and mythology etc. Conducting artistic activities in communities having a rich cultural heritage helps in preserving knowledge of tribal cultures. Training native artists whose livelihoods depend on 'the patronage of private collectors and museums' is an important step in organising galleries that showcase a 'tribal essence'. Art students of tribal origin often use 'anthropological accounts of tribal cultures' to help them aptly express 'native culture' in its intricacies, but they and their teachers don't consider the views of anthropologists to be truly descriptive of their cultures. In order to avoid cultural misappropriation, members of a community must be critical of, well-read about and timely-informed as to how the world portrays their ways of living. Through hosting cross-cultural art competitions that correctly represent 'nativeness', the use of ethnography proves to appropriate culture with art much better than external understandings by eminent anthropologists. Young artists of tribal background have the potential to evaluate existing 'anthropomorphic representations' of their own culture, to create and define for themselves 'new indigenous identities' in an era of modernization

and migration. (*Neuman LK, 2006*) [28] 'Environmental art' can be explored amidst the young tribal populace to study self-depictions of traditional knowledge, its relation to culture and nature - modified through generations of knowledge and skills transfer.

The research method of auto-ethnography seems to most closely describe the lived reality of native folk. Aboriginal histories with linguistic barriers could be explicitly depicted in the form of art works by the tribal populace. Thus in a school setting of mixed cultural backgrounds, art and craft seems to have potential value in not just cultural expression, but also in re-equipping skill sets of entrepreneurship linked to the handicraft industry of eco-tourism.

While cultural expression via arts and crafts seems to build upon tribal identity, associated with the transmission of ancestral knowledge across generations, the major hindrance is inequality in access to quality education amidst the tribes. 'Unequal access to education across gender, caste, tribes and class differences represents itself in a manner and form of asymmetries that are reflected in the domain of education throughout India.' (*Bhattacharya S, 2002*) [1] More specific to tribes, class hierarchies are reduced to cultural and social capital that are intangibles, alongside the effective use of nature's reserves, subject to seasonality and sustainability in harvests. While casteism may not dominate discords in providing educational services to a closeted clan living in an isolated hamlet of a forest, gender disparities are common across ways in which patriarchy has invaded the minds of men, with and without the influence of colonial rule. While men have been predominant hunters and honey collectors, the women have played roles of care-taking, gathering - firewood, water and Non-Timber Forest Produce, as well as managed households while the men were away. But specifically, major projects dealing with enhancing learning amidst tribal kids, fail to include cultural restoration in the curriculum that suits the needs of students from such rich aboriginal histories. Children of tribal origin consume most of their energies in being vulnerable amidst a mixed cohort of upper-caste, higher-class students who stay closer to schools in their home-villages, or have easier means of transport to remote villages outside forests. This dynamic social difference represents itself in the form of a 'cultural divide', hampering any cross-cultural learning.

Ecological tourism has been a potent avenue for both castes and tribes to reap benefits from. Especially linked to underprivileged minority groups who narrate unique oral histories that make the idea of romanticized elite a rewarding experience for the upper classes of society. The hypothesis here is that with art, and a sensibility towards the environment - a rekindling of sustainable living could create a new market of saleable handicrafts that have a make-local trademark and the benefits be directly disbursed to the owners of such lithic knowledge and customary practice.

## **Chapter: 3**

### **AIM OF THE STUDY**

The aim of this research is to collate indigenous knowledge from parent-teacher-student interactions as a learning module towards designing environmentally sensitive and culture informed curricula for similar schools to follow. Another major objective is to design pedagogic approaches to teaching tribal students by equipping them with ancestral wisdom of their ecology and strengthening their cultural identity, so that their resilience to migration distress abates their struggles to gain access to amenities in a regional socio-politics of caste and class dynamic.

#### **The case of tribal learning in mainstream rural education**

Tribal education has been mainstreamed to an extent that it isn't inclusive of minority rights towards quality education. At a superficial level of bridging the tribe-rural dichotomy, schools attempt at diversity and inclusion engagements to only a certain degree. Much work has been done by NGOs and governing bodies to upskill the youth from aboriginal families of descent, towards preparing them for urban / factory labour; but a thorough integration of their indigenous needs with a sense of empowerment - goes amiss in human development initiatives. For example, training the youth to migrate to high paying jobs is a false narrative laden with debt traps in urban settings. Rather one should empower them to not depend on migrant labor. Entrepreneurship activities help the youth in building local resilience while working on their own initiatives such as eco-tourism.

The sensitive relation of tribal folks with available resources of their birth-geographies must be intact in order to create self-sustained human capital, with a strong social bond - uniting them with a cultural identity that represents the unique link with their biological resources. Inculcating traditional wisdom helps tribes survive by earning through the sale of non-timber forest produce such as honey. It also grounds them in their rights towards the use of forest resources.

The effort taken by clans in cultural preservation via forms such as tourism, handicrafts, small scale food-processing units etc are evident across tribes in diverse nations. Native-American art was an important means of preserving knowledge of tribal cultures. As a part of cultural preservation efforts, professional Indian artists whose livelihoods depended on the patronage of private collectors and museums, were trained in their field. Anthropological accounts of native cultures were used, although it was dismissed that anthropologists can be considered as final authorities on their cultures. Ethnography replaced anthropology, to create new indigenous identities (*Neuman LK, 2006*) [28]. India too has innumerable ethnographic accounts and anthropological viewpoints on the conservation of biodiversity and preservation of cultural heritage. But the latter is only limited to ancestral kingship, and invasion and rule. Very few sites have been documented for their aboriginal histories.

Tribals have faced language constraints and art can thus help bridge any narrative they may wish to convey as their own basic needs to the larger society beyond their nestled hamlets of communities.

Tribal education currently has no tribal element in it, it merely indoctrinates India's past strife with conquer and conquest. It barely accounts for tribal enslavement, takeover of forested landscapes, and a dislocation of tribes across the Indian subcontinent. Thus, a pedagogic approach to teaching tribal kids must be informed by a cultural context relating to the exposure a child receives - in being a member of that community. An external mode of teaching will only be accepted if it creates room for discourse within and across plural cultural cohorts. While informing and empowering the youth towards migratory livelihoods in towns and industries, it must honour the choice of an individual to remain tribal - in identity and decisions regarding means of earning.

The term 'cultural responsiveness' indicates a sensitization to the particular community, of its struggles and accomplishments of a past, and the futuristic engagement of stakeholders in policy making regarding resource use and access rights.

In the field of culturally responsive education, it was important for the teacher to act in an appropriate manner, 'to provide them with information needed for mainstream educational activities, to acknowledge their social identities and cultures in curriculum and instruction, and to invite them to explore multicultural perspectives.' (*Hemmings A, 1994*) [13] Reaching multicultural dialogue can only happen after individual cultures are acknowledged for the depth they add to natural resource management, for example.

Especially with migration, their need to communicate difficulties regarding unmet requirements due to social hierarchies - becomes important in culturally diverse societies. Equipping the tribes with skills of migrating resilience aids in protecting their rights over fundamental resource use and shelter, beside quality living and education. The research aims at bridging cultural divides in diverse socio-environs.

Auto-ethnography essentializes the direct involvement of tribes in outlining their norms regarding ecological preservation, resource sharing etc. What a person - external to the tribe - thinks best for the tribe may not necessarily be apt for the tribe, hence while intervening via NGO efforts in resource appropriation and framing re-distributive laws towards equity and sustainability, one must often situate themselves within the reality of the tribe itself. Collaborative planning by the community can only yield the most inclusive rules and regulations, be it in the field of schooling, or resource sharing.

## **Chapter: 4**

### **RESEARCH OBJECTIVES**

Given the ecological and cultural contexts of the field area and community selected for the study, 'environmental science' as a subject suits the objectives of this research. With a place-based modality of engaging tribal kids with their ecosystem and social setting, the breadth of syllabus that can introduce resource conservation and cultural preservation - is apt for the selected age groups and societal backgrounds of children from tribal families. Middle and High school grades just prior to Secondary examinations is the ideal stage for consolidating holistic learning for the students. The subject offers immense scope to weave-in common understandings across disciplines and to link learnings that can integrate into applied thought. For example, the atmospheric physics of climate change and the geographical processes on Earth relate to global warming - and this common-ground is essential to arrive at solution-building capacities in young minds.

#### **Towards a culturally sensitive education module**

The lack of 'cultural sensitivity in making appropriate provisions for the education of scheduled tribes in India' is one of the 'reasons for high dropout rates and non-enrolment among tribal children'. (*Rupavath, R, 2016*) [32] Tribal children learn from a direct engagement with their immediate environment. Thus, a requirement of embedding local ecology into pedagogical design is relevant to skill-building towards livelihoods that are dependent on natural capital. Policy recommendations need an element of 'culture and nature' to accommodate learning needs associated with an experiential mode of teaching children of tribal descent.

National Education Policy 2020 suggests a chapter on Promotion of Arts, Indian Languages and Culture - so that schools are encouraged to maintain a state-level idea of history, civic and political sense within the social sciences for e.g., of imparting education within generic schooling systems in colloquial linguistics and embedding art and craftworks into the syllabus towards preserving cultural heritage. But the NEP fails to

include a suggestively focused way of embedding cultural relevance into the curriculum designed specifically for diverse cultures amidst scheduled castes or tribes, unique to the community and its relation to ecosystems. It vaguely mentions in point 22.8: “accurate inclusion of traditional Indian knowledge including tribal and other local knowledge throughout - into the curriculum, across humanities, sciences, arts, crafts, and sports.” (*National Education Policy, 2020*) [27]

### **Objectives**

- To design an environmental science based learning module for aboriginal students to be sensitized to their culture and ecology.
- To put-in-place a holistic training module for building cultural and ecological contexts, in teachers - of both tribal and non-tribal backgrounds - who engage with the learning processes amidst tribal children.

Environmental awareness can highlight the unique connectedness experienced collaboratively by people of tribal identities, thus cohesively bonding socio-cultural norms as a response to resource dependency and replenishment. Without such engagement with one's surroundings, future generations may lose their sense of community, detaching themselves from associating with a collective identity that no longer serves them well.

The inclusion of culturally responsive pedagogical approaches while catering to tribal learning can:

- Position tribal children in a familiar context - framed by a baseline understanding of their interactions with the immediate environment and social setting
- Empower youth in informed choices pertaining to livelihoods dependent on locally available natural capital
- Offer the tribal community an inter-generational chance towards continuity in preserving traditional wisdom

The theoretical framework in identifying and engaging with learning for tribal students offers that a cultural context be planned and implemented via a working pedagogy that caters to the realms of collective ecosystem consciousness, collaborative decision-making and community-centered owning of responsibility towards safeguarding one's environment. A curriculum that ties cultural identity with ecological principles shall equip the youth in sustainable livelihood choices.

The theory suggests training in entrepreneurship skills across sectors such as tourism and hospitality to directly benefit the next generations of tribal societies that are constantly dislocated from their cultural roots and ecocentric values. It focuses on handicrafts as a venture to reclaim lost identity and to build a responsive relation with the current conservation agendas and developmental paradigms. Their right to co-own, co-manage and co-dependently use natural resources can be restored only if they showcase, as a community - a capability, via education that is culturally sensitive and responsive to evolution and changes in resource availability versus access, to be adaptive to and resilient to political and ecosystem dynamics.

### **Research Questions**

The following meta-questions guide this research and steer the processes required for the researcher to engage with and evolve a mechanism that contextualizes tribal learning:

- How can the process of drafting a working pedagogy for tribal education be inclusive of cultural diversity, and foster sustainable livelihood choices in young minds of tribes?
- What mechanisms in engaging with learning amidst children of indigenous origin, anchor and equip forest-dependent communities in their relation with land and resources?
- How does this modality of curricular intervention for the aboriginals ensure collective and effective management of common pool resources into their future generations?

With these questions, the aim and objectives of this research validate its relevance and need in the selected site of study. A comparative discourse on tribal to semi-urban impact of implementing such study modules is envisaged.

Especially in context to tribes who may not have necessary skills to migrate and adapt to a globalized 'outer world' beyond the confines of the forests, place-centric learning becomes evidently a prerequisite to equipping future generations with a reinforced relation with their lands and resources therein.

## **Chapter: 5**

# **STRUCTURE OF THESIS**

The thesis explores therapy for teachers through workshops and training by the selected schools. It further suggests that art and environmental education are the tenets of tribal schooling where cultural and linguistic barriers are possible. Lastly it attempts to design and develop a working pedagogy that can be applied across state and national boundaries in context to ecology and socio-cultural relevance.

The structure is designed to cover an annual curricular planning and implementation at a school in the remote villages of an interstate geography depicting confluence of languages and shared cultures. It further attempts at remodeling a similar approach to test the same at a peri-urban school setting with richer diversity in culture and languages.

The structure finally distills through this comparison of locals in their native habitus versus semi-urban migrants void of a familiar natural space to explore the challenges of learning across a strata of environs.

### **Positioning environmental education as a success to tribal learning interventions**

Environmental science, as a subject offered at secondary and senior-secondary levels, has the potential to bridge the understanding across the sciences and humanities, by engaging in a logical and linguistic study of cultural narratives. It consolidates learnings across disciplines with a goal of inculcating morality in young minds so that they have respect towards ecological balance, ecosystem processes and biotic resources. They also learn the role of society in relating with the surrounding habitats, and the nature of politics involved in reshaping impacts of contamination, exploitation or neglect of nature's useful reserves.

This review suggests the importance of environmental education within the system of tribal schooling that is currently 'integration' focused, rather than inclusive of the requirements of adolescents and youth from tribal settings. The significant relatedness

to land exhibited by the young tribal populace needs channeling towards necessary skills required to earn a living. Without such skill-bridging intervention, children from tribal backgrounds may be stripped-off from relatability with natural resources. Indigenous descent and aboriginal origin signify the need to reclaim their lost connection with natural capital.

Environmental awareness can highlight the unique connectedness experienced collaboratively by people of tribal identities, thus cohesively bonding socio-cultural norms as a response to resource dependency and replenishment. Without such engagement with one's surroundings, future generations may lose their sense of community, detaching themselves from associating with a collective identity that no longer serves them well.

The theoretical framework in identifying and engaging with learning for tribal students offers that a cultural context be planned and implemented via a working pedagogy that caters to the realms of collective ecosystem consciousness, collaborative decision-making and community-centered owning of responsibility towards safeguarding one's environment. A curriculum that ties cultural identity with ecological principles shall equip the youth in sustainable livelihood choices.

The study suggests training in entrepreneurship skills across sectors such as tourism and hospitality to directly benefit the next generations of tribal societies that are constantly dislocated from their cultural roots and ecocentric values. It focuses on handicrafts as a venture to reclaim lost identity and to build a responsive relation with the current conservation agendas and developmental paradigms. Their right to co-own, co-manage and co-dependently use natural resources can be restored only if they showcase, as a community - a capability, via education that is culturally sensitive and responsive to evolution and changes in resource availability versus access, to be adaptive to and resilient to political and ecosystem dynamics.

## **Chapter: 6**

# **REVIEW OF LITERATURE**

### **A capabilities lens to engage with tribal resilience**

Tribal societies have lasted through time immemorial via adaptive resilience amidst changes in access to the quality and quantity of natural resources. Their traditional knowledge systems have retained principles of effective use of nature's capital, while being modified to situate their relevance through eras of coevolution. The inherent 'capability' of a tribe to sustain in terms of - cultural existence, 'tribe' identity and responsibility towards environmental sustainability - is based on values and beliefs, passed down generations. This skill-based survival strategy positions the innate potential of clans to survive across diverse bio-climates and socio-political terrains, in two categories, namely - 'ability' and 'capacity'.

The 'ability' of a community to adapt to dynamic scenarios lies in the willingness to take risks, and the set of skills equipped to overcome a hurdle. The 'capacity' of a clan, on the other hand, isn't the action section of what can be done to sustain through hardship, but the psychological endurance owned collectively in facing a challenge or crisis. It is the readiness or preparedness of a hamlet to take into consideration - the repercussions of a chosen line-of-action. It is that sixth-sense awareness or consequential intelligence owned by the members as a whole - in directing well-informed decisions in consensus with the elders and all-involved. It supports 'ability' yet precedes corrective-action with collective wisdom and insight.

While 'ability' is tied solely to adaptation, 'capacity' roots itself in mitigating externalities by avoiding choices that may be individually benefitting, but may levy a social cost to the entire community. Thus 'capacity' ensures traits that result in resilience-building within a community. For example, a family unit desiring better standards of living - by migrating - may not necessarily ensure equity in access to amenities for that household. But for the collective clan, it may cause an erasure of cultural histories with time, as newer generations walk away from their ancestral

know-how and practices. Cultural symbolism, thus, can be preserved by merging 'abilities' and 'capacities' to mean some aspect of current-day relevance for an ever-progressing aboriginal society. This can be achieved in the schooling system for tribal children through curricular design that restores cultural values into livelihood choices that are sustainable.

While providing the right to quality education for tribal kids, 'basic abilities like judgment, memory, perception as well as power - together termed as general adaptive capacity' differentiate a tribal community, alongside 'the motive' to engage them with folks from nearby villages. This limits them from fully integrating with rural schooling within social human settlements proximate to forested landscapes. (*Patel S, 1991*) [29] Their 'cultural memory' confines them with rituals linked with their 'perception' of nature. Tribes use an innate and primordial form of intuitive 'judgment' to survive, and preserve their 'power or will' in safeguarding relational identities built over generational engagement with natural phenomena of the region.

### **The language of tribes as a stronghold to steer tribal education**

In the sectors of education, eco-tourism and NGO intervention for tribal welfare, the most impacted yet omitted aspect is linguistics. Preserving tribal language through oral histories and folklore is essential to conserving their cultural heritage. In order to sensitize yourself to an aboriginal culture, ethnography demands a merging with the dialect of the locals. In tribal discourses, an undocumented verbal way of communication stresses on vocal emphasis. An absence of the written form of script only invites a borrowed mixture from different regional languages. For example, the interstate position of South-Indian tribes that don't particularly follow geo-political borders, has created a dialect that merges Malayalam, Kannada, Tamil, Telugu etc. depending on the ancestral migratory routes each clan took.

Thus language symbolizes cultural exchange, and if tribal schools can teach the students in their familial mother-tongue, it would contextualize learning for them to an extent that they'd feel validated and visible for belonging to a rich culture. Dismissing

their oratory skills which they are born into, only prevents them from truly feeling included.

Projects that document their narratives can help sell the honey they collect, and can bring in funds to self-sustain as a marginal community. Utilizing this unique linguistic expression aids in reclaiming identity as well as rights to access and use of forest resources.

Reviving traditional knowledge is an immense opportunity for tribes to ascertain their sustainable ways of forest and resource management. The ancestral wisdom involved in collecting honey from wild sources is, for example, an indigenous patent that tribes can gain rewards from. The only amiss is the documentation in writing of such scientifically precise and sustainable ways of harvesting forest resources.

### **Linguistics as a means to culturally responsive learning**

Tribal dialects are mainly oral, and vary across regions within a state. They transcend political boundaries and often result in a cross-culturally merged unscripted verbal language that has borrowed features from two or three regions. Their ancestral roots of language formation represent themselves in words having tribal etymologies. Thus it is important to engage in learning amidst tribal students in a language and culture that is familiar to the young learners. 'Processes used in creating multilingual education programmes in an attempt to offer an improved quality of education' for tribal children in India, must 'begin in the mother tongue and build competence in the second language before using it as the medium of instruction, thus reducing the linguistic and cultural barriers faced by students when entering school.' (*MacKenzie PJ, 2009*) [20] Thinking in native-dialects has proven to enhance cerebral capacity, ensuring excellence in studies for the adolescent and youth of any geography. For tribes, it is even more crucial to not introduce the regional language predominant across the state - in disseminating knowledge at learning centers designed to cater to their linguistic needs. This falls under the facet of 'cultural responsiveness' in tribal schooling.

In the field of culturally responsive education, 'observation of successful teachers suggests that it is important for the teacher to act in a manner that students regard as appropriate for teachers, to provide them with information needed for mainstream educational activities, to acknowledge their social identities and cultures in curriculum and instruction, and to invite them to explore multicultural perspectives.' (*Hemmings A, 1994*) [13] Beginning and building upon a tribal essence, higher grade schooling can find potential in bridging inter-cultural discords, integrating the tribal youth more effectively with mainstream society.

### **Self-determined curricula in community-engaged schooling**

Self-determinism as a philosophy offers a way of knowing phenomena that adapt to changes, and systems that self-regulate to changing processes. This exists in nature and society, and is the fundamental basis to resilience. A study on Native American learning pedagogy indicates 'three areas of promising reform for culturally responsive Indian teacher education: (a) establishing infrastructures for incorporating native voices and (their active) participation in the educational process; (b) institutionalizing culturally responsive norms for curriculum and instruction; and (c) increasing the knowledge base concerning native education through scholarly study of the complexities of teaching and learning within native communities.' Further, 'in contrast to programs which inculcate dominant values and perspectives, effective Native American teacher education programs provide access to university resources; engage members of the native community in developing curriculum and instruction strategies; immerse students and teachers in authentic, diverse cultural settings; and model culturally responsive teaching practices for pre-service teachers.' (*Belgarde MJ et al., 2002*) [2] Representing the voice of tribals by providing opportunities for them to showcase unique and deep-rooted identities via a 'crafts-mela' (cultural exhibition), ensures active integration of their diverse cultures within mainstream learning experiences of macro-society. Creating space in pedagogical design for tribal communities to state their cultural needs and relationships with ecologies enhances cultural appropriation in implementing a curriculum which validates tribal identities. This steers the tribal youth in being accountable in co-owning responsibility towards protecting the environment and conserving its resources.

For community-based interventions that promote sustainable livelihoods and collaborate in natural resource management, an ecologically-sound syllabus has to be delivered at the teenage level of schooling amidst tribes. Their rights to land and natural capital can only be reasserted if they play an active role in ensuring resource depletion and biodiversity loss are mitigated. Ascribing gender skewed mismanagement of resources to be predominantly driven by the greed of man, may cause further divide in a dialogue that anchors both male and female potentials in co-managing resource use in more sustainable ways. 'Environmental problems can only be effectively resolved by behavioral modification of the social behavior of individuals in society. One route for this is to present case studies of the long-term adverse consequences of maladaptive behavior to educate people about the underlying causes of environmental problems.' (*Natadecha P, 1991*) [26] Such an approach in raising awareness in tribal societies can sensitize them to nature's principles of self-regulation and the impact of excessive human-influence on forested terrains. It can in-turn help communities determine internal resource-sharing and distribution norms, in-sync with seasonal dynamics - so as to conserve the existing natural capital. But this approach doesn't provide much hope towards resource conservation, while focusing on lessons learnt through mistakes made by communities that ineffectively exploited natural resources.

### **Contextualising the issue of tribal schools**

Often external interventions such as that of NGOs play a role of teaching tribes more effective strategies to manage their resources, without allowing the natives to communicate their needs. NGOs lack the expertise of on-ground knowledge that only a member of the tribe can assimilate through a lived-experience in a forest. An effective intervening mechanism would be to channel a collective intrinsic voice to analyse the inherent problem, before jumping into a fix-and-rescue mode. This ensures inclusivity of the actual issue faced by tribes, rather than a suggestive mechanism of alternative resolutions.

In an attempt to discern the apt strategy recommended by a researcher, towards effective resource management by indigenous communities, there lies a need for 'the

creation of dialogic networks that engage researchers and indigenous people as collaborators in a process of knowledge production.' Thus context-specific knowledge networks known as 'place-based learning communities' help support management and planning decisions by the indigenous people. (*Davidson-H et al., 2007*) [7] These learning communities offer immense scope in the field of place-based education, making learning participative and proactive.

Defining 'place-centric education', it is the development of curricula and implementation of syllabi based on a pedagogic design of learning modules specific to each biogeography. Each unique political and ecological dynamic has a narrative to offer, in terms of resource management, community engagement and cultural preservation. The need here is to get that data in teaching-learning modalities at schools, so that regional tribe and caste populations aren't left with an unfamiliar conceptualization of knowledge.

Place-based learning can be extended beyond schooling, to indicate how a community learns from its capability of utilising existing resources. It could suggest gaps in terms of inequitable social norms, a lack of clarity in decision making, or the managerial inefficiency in ensuring sustainable use, often termed as 'social scarcity'. It could also offer effective utilization of human capital without causing migration related distress and urban debt traps.

### **Informal structures of indigenous knowledge transfer**

In the context of South-Asian studies referring to tribal education, 'The Baiga are a small tribe inhabiting the forested regions of Central India. They are known for their extensive knowledge of forests and healing. A local pedagogic tradition supports the transmission of this knowledge from expert practitioner-gurus to their chelas (novices). The knowledge system is local and oral. The pedagogic tradition and socialization which supports its transmission is marked by these qualities as also the subsistence level of production and the lack of centralized authority in the organization of the tribe, and in children's lives. This paper explores the disjunction between this (informally organised transmission of traditional knowledge) and formal schooling whose pedagogic practices and curriculum presume a literate tradition: where knowledge is not contextually

presented in texts and children are already socialized to accept pedagogic / adult authority. In the present Indian context where there is a growing emphasis on incorporating indigenous knowledge into the school curriculum, the paper raises questions on the epistemological feasibility of such an inclusion.' (*Sarangapani PM, 2003*) [34] Children subconsciously accumulate traditional forms of knowledge and practices at a very young age. Embedding the same in a contextual syllabus that caters to livelihood security amidst the youth of tribal populace, ensures entrepreneurial skills in marketing their products and ancestral information, without estranging them from their collective rights over inherited wisdom.

While indigenous environmental knowledge and cultural expression have struggled to ensure collective rights associated with tribes, the Indian government focusses majorly on protecting Intellectual Property Rights (IPRs) that have monetary value, often prioritizing individual benefits. 'The existing (Trade Related) IPR regime falls short in protecting and recognizing the inherent characteristic(s) of Traditional Knowledge (and Traditional Cultural Expression) such as collective innovation, collective ownership, and collective rights.' (*Maguipuinamei M, 2016*) [21] It further fails to include the collective nature of ownership of shared rights associated with the community as a whole.

### **Tribal normatives in collaborative resource management strategies**

Many studies suggest the collective mechanisms of cultural expression by aboriginal communities, and their relation with nature expressed through 'collective agency' in co-determining social normatives. Ecological management of natural and 'human-modified' ecosystems is signified by 'the potential role of biodiversity in (the) rural economy of Apatani (for example) and its socio-cultural values, (where) conservation of flora and fauna is (embedded) in their social norm over centuries.' (*Dollo M et al., 2009*) [10] Common pool resource literature predominantly discusses 'urban and rural commons' as lakes or wetlands, designated grazing areas, nesting grounds for aquatic birds, and zones for fuelwood collection from plantations. Villages and towns have clear demarcations of land-use-value associated with public property rights. In the

wilderness, very few community resource-mapping studies have documented natural resource availability and land use patterns.

In an attempt to discern the apt strategy recommended by a researcher, towards effective resource management by indigenous communities, there lies a need for 'the creation of dialogic networks that engage researchers and indigenous people as collaborators in a process of knowledge production. Such an applied research process can produce context-specific knowledge networks that support management and planning decisions by indigenous people; these networks we refer to as place-based learning communities.' (*Davidson-H et al., 2007*) [7] These place-centric learning spaces can be used to map the seasonality of access to local resources, thus equipping tribes with a basis to co-manage their natural capital, guided by state-governed forest management schemes.

While Joint Forest Management (for example) promises equity based on adaptability by tribal societies with state-dictated protocols, the 'JFM regime reflects the social preference of the rural non-poor, and that the poor are net losers over a 40-year time horizon,' suggesting inequity in resource allocation to marginalized members in the absence of subsidies, compensations and incentives reserved for the poor. (*Kumar S, 2002*) [18] Tribal preferences only exist in action-based small-scale community-based conservation initiatives, which are trivial in the surmounting literature that exists on collective resource management in rural and urban landscapes. In order for cultural capital to thrive in tribal communities, a cohesion amidst natural, human and social forms of capital is fundamental to sustainable livelihoods self-governed by a collaborative resource-sharing strategy, which is operated based on rules set by the communities. And to utilize such functional societal structures in collective resource management, the entry-point is traditional education to the youth - which has a cultural context to local ecology.

### **Towards sustainable livelihood choices amidst future generations of tribes**

The cultural-ecology of a tribal context informs intervention programmes of various modalities of engaging in empowering communities and restoring their rights to co-own, co-manage and co-use resources of the land. If this unique imprint is introduced

via pedagogic re-design into learning for tribal students, the continuum of livelihood sustenance alongside forms of co-dependencies can be met towards equitable norms of resource sharing dictated by the members themselves.

While learning spaces offer a place-people-time centric basis towards the production of knowledge that is relevant to culture and ecology, educational foundations frame local economies aiding in trade of non-timber forest produce (NTFPs) and handcrafted products symbolizing cultural heritage.

In the context of tribal markets, sustainable development initiatives have failed to include 'tribal artisans/groups creative abilities with the support of marketing techniques' such as crowdsourcing on social media. (*Rajathilagam S & Kavitha K, 2018*) [31] To arrive at Maximum Support Price (MSP) for their unique skills and genuine products sourced directly from forests, a strong vocational training programme can facilitate a model of sustainable livelihoods tied to community conservation efforts. A critique of the cited paper suggests more than just social media visibility and reduced roles of middlemen in appropriating benefits justly to the direct holders of such knowledge and craftsmanship. True ownership of cultural value can be brought about by helping the communities realize the worth of their handicrafts and skillsets beyond their habitat boundaries, in rural and urban settings where their works are treasured.

Urban 'melas' facilitate the promotion of cultural expression of arts and crafts in cities, bridging the value-chain supporting hand-made products by native people using nature-derived materials. Be it jams and pickles, 'papads' and edible roots harvested from forests, or hand-woven baskets, hand-stitched fabric and hand-painted/-carved home decor, cultural expression reaches the larger society through the showcase and sale of products of tribal origin. Honey and wild-berry gatherers are given an opportunity to showcase talent and make the public aware of adulterants and substitutes that can deteriorate food quality, compromising authenticity.

Bringing the customer to native habitats seems implausible, given constraints regarding pollution due to excessive tourist activities in once-pristine jungles. The recent

past has revealed a heightened use of homestay services by travellers, inculcating plastic-free and litter-free habits in the choice of packaging consumed during travel - by both stores and trekkers or travel-groups.

Vocational training amidst tribes must also include hospitality and tourism, alongside the awareness of the use of environmentally friendly products on ecological health and habitat wellbeing. Short courses on field-guides, trekking and history of the place ensure the youth with job opportunities during holiday seasons, also preserving true narratives of culture through time. Museum studies, the use of colloquial language in narrating cultural histories, alongside translation to English, Hindi and state dialects ensures transmission of information to visitors. Equipping tribal youth with services catered to the urban people dissolves urban-rural divides, bringing-forth opportunities to have cross-cultural dialogues that tie us all back to our roots.

Inclusive education for tribes must include the dynamic nature of transformative livelihoods amidst tribal populace that alter with state-decisions on wildlife protection, tourism and land use change across impermanent forested boundaries. The role of tribes in community-led conservation initiatives can only be strengthened via offering a culturally contextual and relevant learning module that asserts their rights and responsibilities towards safeguarding wild habitats.

### **A reformed sense of cultural evolution in context to migration and modernisation**

Apart from internal struggles amidst tribal resource sharing norms, external challenges predominantly dictate preservation of ancestral wisdom. Given this, a cultural evolution in the reformed sense of ancient means of providing for one's family from forest resources, is inevitable. Noting such patterns of adaptations by intergenerational communities can inform us of the reformed ecological balance that asserted such modifications in harvesting behavior, for example. Communities learn to adapt with change in availability of and access to resources and amenities - throughout the world. A failure to adapt to perseverance in the given environment, projects people to estrange themselves from ancestral identity. Beyond wanting to abandon their nestled hamlets,

tribes are lured into aspirations that promise a better life outside the realms of their cultural and symbolic heritage.

Other regional push-pull factors include aspirations towards stable income sources, integration via migration to dominant rural-urban regimes, desires for livelihood shifts and quality education etc. These extraneous variables don't ground tribal societies in their rootedness to conservation of natural resources. While we point-out mis-managed strategies adopted by state-run regimes of biodiversity protection or exploited use of natural capital, it isn't fair to hold tribals constrained to the effective management of commons, and to their efforts in conserving wild habitats. Tribals have a right to choose a regime that isn't in accordance with their ancestral norms, but as NGOs and the government - we must ensure that they aren't subjected to further inequities if they decide to be integrated with the agendas of the state.

While ecosystem imbalance is one indicator of continuity in tribal practices associated with indigenous wisdom of the land, and the interactions across its flora and fauna, 'accounting for age-dependent patterns of knowledge transmission is critical for understanding cultural evolution in age-structured populations.' Understanding knowledge and skill variation among age cohorts, helps infer 'how people socially acquire different types of knowledge at different ages.' (Dempis K et al., 2012) [9] More-so, it is essential to note the willingness that tribal youth have in taking their practices and identity forward to the next generation.

Collective consciousness of the community as a whole indicates how rooted and committed a clan is to its surroundings and the conservation of resources there-in. Diverging sense of family, individuation of land ownership, aspirations towards 'better' standards of living - to name a few - are factors that negate a culturally cohesive identity built over time.

A capabilities assessment informs the preparedness of youth in taking traditional knowledge into adapted forms of practice, ensuring a continuum in preserving indigenous identity. The basket of resources available, the nature of geographic terrain present, the

political dynamics evolved in the state, as well as the capacity and ability of that cohort of individuals to preserve their sense of community, via the effective management of natural capital - indicate a unique community-response to adaptation to vulnerability.

A focus on restoring tribal rights to use of and free access to natural resources - shall equip the youth in necessary entrepreneurial skills. These skill sets often are accompanied by a healthy independence of members from external politics at play. They boost direct integration of tourists with the sale of products of tribal origin, without monopoly giants marketing and reaping profits under the banners of social tribal welfare. 'Entrepreneurial activity, at multiple levels, is a crucial element of any action package to enhance the self-sustaining economic development of indigenous peoples. Advancing indigenous economic development is fundamentally linked to indigenous peoples' efforts to reduce their reliance on government benefits and to reassert their sovereign claims.' (*De Bruin A et al., 2018*) [8] More-so, to avoid being enslaved to rising urban demands of produce harvested sustainably from the wild, tribes need to be acknowledged as the direct contributors towards preserving ecosystem services and maintaining ecological balance. The benefits of sale of any product as a make-of-tribe must be handed over to the tribe, via certified companies that ensure a just transaction with tribal folks.

### **Involving families in community engagement programmes**

There is a desired need for community engagement within learning spaces such as tribal schools, in order to see success in any planned community-led efforts under sustainability and / or conservation. For interventions to be effective in transferring responsibility to the members in appropriating and distributing their resources in accordance to social norms framed by them, it is important to steer such morals of justice and equity at the level of schooling in young minds. This project attempts at creating a platform for indigenous adults to interact with their youth in reviving and preserving traditional wisdom - towards sustainable livelihoods that imbibe conservation practices.

'Community-based natural resource management (CBNRM) has become an important tool in promoting environmental and ecological sustainability as well as improving community access to ecosystem services. Social capital can be a vehicle

through which the accumulation of different forms of capital can be achieved and contribute to sustainable environmental management. CBNRM programmes that are co-management driven and which seek the participation of all community stakeholders, promote the (collective) management of common pool resources.' (*Musavengane R et al., 2016*) [24] Integrating this element into the pedagogic approach for the vocational training imparted to tribal youth, ensures a continuum of resource conservation practices followed by future generations.

It further sheds light on the significance we assert as consumers of produce of tribal origin, to the ethics of preserving tribal identity, ensuring social and ecological benefits reach such aboriginal communities via educational anthropology conducted by NGOs, self-ethnographic accounts of the tribes, and vocational training imparted by the local government.

In order for cultural capital to thrive, a cohesion amidst natural, human and social forms of capital is fundamental to sustainable livelihoods self-governed by a collaborative resource-sharing strategy, which is operated based on rules set by the communities. And to utilize such functional societal structures in collective resource management, the entry-point is traditional education to the youth - which has a cultural context to local ecology.

### **Standpoints in researching schooling for tribal kids**

The research anchors upon a community-led resource management scheme that restores ownership and use-rights to collective-commons, to steer tribal learning. It emanates a dialogue between an active yet sensitive intervening agency, and participatory representative presence of members of the tribe, in a successful natural resource management strategy, useful in pedagogic design of curricula for schooling tribal children. It stresses on a clear processing of community needs to be stitched with traditional use of locally available natural capital, as a guidance towards preserving ancestral wisdom through tribal education.

The chapter also stresses on tribal enterprise rather than employability. With the eco-tourism sector, it suggests building entrepreneurship skills amongst the tribal youth towards collective participation in biodiversity and natural resource conservation. The premise of the paper is on designing culturally and ecologically sensitive curricula, so that tribal kids are engaged in a contextual learning experience. Emphasizing place-centrism to accommodate learning modules to contain environmental and cultural richness, the paper attempts to consolidate a reaffirmed sense of tribal belongingness and rootedness towards community action initiatives.

The methods suggested for research in tribal studies include a balance of auto-ethnographic skill development alongside anthropological narration, to testify the validity of societal claims and accusations. The dual mode of researching tribal societies helps include their own perspectives, without alienating them from the intervention suggested by NGOs working in the sector of tribal inclusion.

In order for cultural capital to thrive, a cohesion amidst natural, human and social forms of capital is fundamental to sustainable livelihoods self-governed by a collaborative resource-sharing strategy, which is operated based on rules set by the communities. Further, it is of importance that an intercultural dialogue be arranged to offer perspectives on resolving communal conflicts, working on diversity and truly engaging as a group of marginals, towards inclusion.

Cultural sensitization in educating tribal kids needs to be done, in order to rebuild a healthy sense of tribal identity. Restoring cultural relations with ecologies creates a narrative of reacknowledging the use of natural resources by tribes. Schooling must thus invoke a sacred connection with nature, and strengthen communal bonding via community engagement programmes that foster a celebration of a rich culture and environment.

Reappropriation and the rightful validation through expression of tribal language is thus a crucial element in tribal discourse on inclusion and cultural diversity. A

systematic documentation of environmental knowledge shall ensure the preservation of tradition and culture through generations.

## **Chapter: 7**

### **PRELIMINARY FIELD SURVEYS**

The two selected sites of study include:

1. Anaikatti - Vidya Vanam Senior Secondary School dedicated to learning for native tribes of the Tamil Nadu - Kerala transect.
2. Rural Bangalore - Little Buddha Primary Gurukula, a bridge-school for migrant children that aren't necessarily tribal.

#### **Issues in developing a pedagogical approach to curriculum design at tribal learning centers**

While training teachers in forming syllabi that cater to the necessities of tribal life, tribal linguistics and cultural expression play dominant roles in the success of any educational intervention contextualized for tribal folks. In the Indian context of tribal education, vast cultural differences exist between children belonging to the rural rich families, kids from scheduled castes backgrounds who are aware of state quota provisions and government aided seats in schools, and tribal students who may not be fully conscious of benefits they can receive as a part of state schemes linked with incentives and subsidies to aid in their entry to quality schooling. Educational policies have largely been co-determinants of India's colonial past and its struggle for independence - narrated via a national level discourse. The curricula rarely factor-in the tribal perspectives of local political dynamics that existed during British rule, and silence their emotions linked to being enslaved in forest fortresses for trade and farming. Existing syllabi across boards predominantly focus on urban subjects linked to skills and jobs in rapidly globalizing cities, even in rural schools. They seldom engage in traditional value-building modules that remind the youth of ancestral heritage or cultural diversity. Singular mainstream narratives are fitted through disciplinary knowledge foundations, estranging the younger generation from their own roots, which is especially relevant to the resilience of tribal communities. Self-determined educational approaches contextualize this significant

descent of aboriginal information that is crucial in building sustainable livelihood dependencies amidst the future generations within tribes.

With recent infringements by the state and rural people - changing the forest landscapes into monoculture plantations and cultivated farmlands, tribes are forced to engage with and be a part of mainstream society. This assertion starts with basic healthcare interventions and educational services provided by stakeholders that are external to what constitutes as tribal. NGOs attempt at bridging gaps by introducing a schooling system to the adolescent and youth of tribal families. 'Ecologically and culturally incompatible curriculum, unfamiliar language of the text books, etc., impose a learning on (these) people with no relevance to the environment. Lack of opportunity for higher education and its application in promoting the quality of life particularly from the point of view of economy, non-effective administration and organizational failure, non-cognizance of significance of ecological and socio-cultural specificities, etc., are major factors in the non-promotion of education.' (*Samal PK et al., 2001*) [33] The influence of class may be underplayed as collective natural capital management may be predominant among hamlets that co-own resources. Clan differences aren't a significant barrier as tribal groups respect each other's boundaries and rarely interact across macro-families.

The first school in the remote forests of Coimbatore and Palakad depicts this surreal kinship of learning from nature. As the researcher organised field trips, the subtle lived realities were witnessed at the tribal hamlet where lantana pickers carried and dried the worship sticks and twigs with their children. It was also observed on a festive day that drums of animal hide were beaten and kids from the honey-gathering tribe mimicked their parents while aiming slingshots at a beehive on a tall peepal tree in a village.

A failing schooling facility can do more damage than good to tribal folks who constantly learn from nature. Their insights from observing the wilderness can get muffled with tarred roads bustling with tourists, concrete classrooms baking in the sun's heat and teachers who may not necessarily understand the true tribal needs while imparting learning to young souls.

A process of dis-culturing starts, by introducing kids to global and city life, to technology and the false promises of migration and shifts in livelihoods. Families are nuclearised, torn apart with men working as migrant labor in farms, women as housekeepers in small towns, with children forced into child labor. In the study cited below, it is termed 'enculturing' but the tribes are truly estranged from their own cultures of origin. "The impact of the process of enculturation on the schooling of (tribal) girl children in rural India restricts their social mobility and equal opportunity. By using the theoretical framework of 'social capital', the study also explores the life experiences of tribal migrant girls to understand the phenomenon of school exclusion in Mayurbhanj district of Odisha." (*Das P, 2020*) [6] Similarly, tribal dynamics with gender and generational shifts outplay themselves in a thesis that relates to community norms and self-determined values around the importance of learning for children amidst the settlements of tribes within forested landscapes.

The second school of study depicts how kids are estranged from native lived realities and have to cope amidst a competitive fast paced social terrain of scarce yet high paying waged labor for their parents. The gap years in academics, the inaccess to free education in a migrated state, and the unaffordability of high fee for non-residents was observed in this field site.

Social capital dictates a sense of belongingness and insures collective aid in times of crisis for any community. The rich, nuclear and modern families may have wealth and may not necessarily seek social inclusion towards being considered as a member of society. For the poor and vulnerable, this social capital is all they have. Castes cope with managing their social capital while traversing and interacting across the casteist hierarchy that exists in small towns and villages. But tribes haven't yet been equipped with inter-social skills to navigate gaining access to reservations or dialoguing and negotiating with the caste dynamics that exist in their outer worlds.

Tribes may be unaware of or not subscribing to a sense of nationhood. For them daily needs being met is prioritized towards earning a living, or gathering and hunting to live subsistently. 'TribalCrit might help analyze and explicate the unique and complex

nature of Native and Indigenous peoples' lived experiences in regard to race, ethnicity, and nationality. TribalCrit (as a theory) for Native/Indigenous people help(s) us theorize and tell our stories and experiences in our own voices. TribalCrit provides a framework for us to define ourselves rather than being defined by non-Native notions of who we should be.' (*Jaime AM & Russell C, 2019*) [16] Giving them a voice to self-determine their social norms, their cultural values, their modalities of learning - is what makes any intervention amidst tribes - a success.

The research hopes to extend this into the way cross-cultural dialogue occurs within a class setup amidst teachers not necessarily from tribal backgrounds. Hence a therapy of sorts is essential to the way in which they involve students in learning on a daily basis.

We must train teachers from non-tribal descent on how to negotiate the learning objectives while retaining the tribal core in children. In one such study, 'only a few teachers were able to use the children's home language to create a learning space that was reciprocal, recursive, and collaborative. The theoretical framework was drawn from the social learning theory of Vygotsky, and works on intersubjectivity and collaborative learning by Matusov and Rogoff.' (*Nag S, 2014*) [25] Regular counselling for teachers may provide scope to unlearn modern and global biases while deeply engaging with a true tribal nature of kids and their own learning needs. Subconscious hierarchies that hinder learning processes could be dissolved towards equal opportunities to education across gender, culture and biogeography.

Another critical step is to acknowledge oral colloquial languages in written form and bring the spirit and essence of a student into the class environ of active and engaged participation.

## **The case of Tribal Schooling at Anaikatti - Tamil Nadu**

Taking the field visits at the tribal school further, engaging teenagers in entrepreneurial skill development essentializes the pretext of a quality learning environ. Be it dialogues in buses while they apply to universities, or alumni discussions on institutional support - these meetings are crucial to enable learning to reach future avenues. Discourses on the relevance of a state-run art 'mela' or their own cultural event at their school, makes room for planning their careers in fields of NGO service, art exhibitions, eco-tourism etc.

## **Potential recommendations of preliminary research**

Tribes suffer under current resettlement policies that target taking away access to forests and the free use of their resources in the name of preserving ecologies. A narrative of sustainable harvest is built wherein forestry programmes dissolve the rich flora and fauna into revenue monoculture plantations. This impacts soil topology, local weather and water reserves severely.

Tribal youth struggle to make ends meet in a new town without the social and natural capital they had free access to earlier. The concept of purchasing water, possessing land or processing food is foreign to their ecocentric lifestyles. Even a proof of national identity seems so vague to a community that hasn't witnessed much of India's political dynamic.

A cultural fragmentation and dilution impacts the minorities at a tremendous scale. They are estranged from their birthlands and bereft of a sustainable lifestyle. Their occupations and ways of living need adjustments and adaptations that are detrimental to their ancestral wisdom passed down generations.

Rather than scheduled quotas reserved for tribes as inclusive strategies of government policies hinting at migration, a focus on restoring their rights to use of and free access to natural resources - shall equip the youth in necessary entrepreneurial skills. These skill sets often are accompanied by a healthy independence of members from external politics at play. They boost direct integration of tourists with the sale of products

of tribal origin, without monopoly giants marketing and reaping profits under the banners of social tribal welfare.

The eco-tourism sector offers a point of youth empowerment, whereby tribals don't feel displaced, and are actively involved in conservation of biodiversity and forest resources. It harbors immense potential in training the tribal youth in participating in forest governance and natural resource management. It engages stakeholders in collaborative decision making and steers for preserving cultural identity, with a rich interrelatedness with nature.

But the ecotourism industry has its caveats and dangers. Many corporate social responsibility funds barely reach tribal populations. The middlemen of the NGO sector claim to have ethically transferred the financial aid into a social service offered as a skill or training programme. There isn't any moderation of the efficacy of that intervention, its relevance for the tribal culture, or its design and implementation mechanism. Tribals have become exhibits for a continued misappropriation of public funds towards an empty and hollow cause. Their rights and their inclusion are shallow and superficial topics of debate, that the country and its NGOs aren't ready to delve into and grapple with.

The education sector provides ample opportunities to rightly redistribute the benefits of societal aid. A few schools make remarkable efforts in empowering teenagers and making them ready to face a political dynamic beyond inter-clan conflicts. Several NGOs in the field of tribal schooling have situated tribes as an inclusive urban entity, with migration at its heights. Positioning tribes in mainstream society is often a challenging task, with documentation of identity needing an urgent revamp.

NGOs in the education sector could focus on restoring resource use rights by building a healthy sense of ecological entitlement amidst tribal groups. They could also engage the youth in entrepreneurial training that empowers them to make independent financial investments in the sectors such as eco-tourism.

'Entrepreneurship' serves as a model for self-sustaining economic development of indigenous communities. Indigenous economic development helps minimize reliance on

government benefits and to reestablish sovereign claims amidst minorities. (*De Bruin A et al., 2018*) [8] More-so, to avoid being enslaved to rising urban demands of produce harvested sustainably from the wild, tribes need to be acknowledged as the direct contributors towards preserving ecosystem services and maintaining ecological balance. The benefits of sale of any product as a make-of-tribe must be handed over to the tribe, via certified companies that ensure a just transaction with tribal folks.

This was evident as a responsive resilience strategy in the field site having a huge ecotourism potential. The thematic annual exhibit cum drama show entailed seniors working with juniors in understanding coordination of an event at such a scale. They were led through term two of designing the ‘santhe’ festival on fabric and fashion.

There are already many tribal handicraft and food products marketed across urban sections of society. The direct engagement of the urban populace with tribal living is still amiss. Be it elite resorts in the wilderness, jungle parties or funding rural schools, an active involvement of urban youth with tribal and rural youth is still a foreign concept. Breaking barriers of caste and creed, NGOs must offer retreats that engage societies across diverse backgrounds to bring in true inclusivity.

**The comparative case of Rampura - Bengaluru: Full Text as sub-Chapter**

**A comparative pedagogical approach to contextualizing tribal and suburban education in aspects of culture and nature - for children of Adivasi origins and migrant labor populace of South India.**

Hussain Ebrahim

The Univ. of TransDisciplinary Health Sciences and Technology, Bangalore

***Submitted to***

**The IP Santiago Memorial Conference**

***Seeking Cosmologies of Restorative Justice in the Anthropocene: Towards Planetary***

***Futures in the Biocene***

Planetary justice and Adivasi / Tribal / Indigenous cosmologies

**Abstract**

The gap between learning in forested landscapes and migrating to gain access to education in small towns and fringes of metro cities is huge. The social effort required by a minority community in shifting base is often accompanied by a humongous loss of natural and social capital. It is furthermore devastating to witness schooling needs unmet in a new cultural and natural setting that the family unit is ill-equipped to cope with.

Thus it is crucial for a curricular design that bridges such a gap and addresses the vulnerabilities associated with migration-related distress and in-access to affordable quality learning for children of marginalised communities. The nature classrooms framework offers hope in contextualizing cultural diversity and integrating environmental sensitivity towards an ecologically conscious and culturally inclusive learning modality for such kids belonging to tribal roots as well as rural backgrounds.

The pedagogic approach to creating nature spaces for cultural exchange offers teachers and parents an interdependent solace in dealing with a macro-socio-political othering and exclusion. Creating learning communities under schooling engagement

empowers staff and students to build identity and belong to a shared space that offers creative expression of a heterogeneous culture in an alternative natural setting.

**Keywords** - Environmental pedagogy, Cultural consciousness, Nature-centric learning, Migrant worker families, Children of tribal descent

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**A comparative pedagogical approach to contextualizing tribal and suburban education in aspects of culture and nature - for children of Adivasi origins and migrant labor populace of South India.**

Hussain Ebrahim

TransDisciplinary University (T.D.U.)

**1. Introduction**

Tribal schooling is bereft of the context of tribes. It is a rural-state curriculum designed for the strengthening of national identity, state-citizenship and often based on a fallacy of democracy, secularism and independence. The minority quota and seat reservations further dilute the quality of learning offered as a fundamental right.

It is therefore suggested by the findings of this study that tribal learning be inclusive of a cultural dialogue with other castes, be contextual of one's sociological roots, and be anchored in the principle of accepting cultural diversity. This equips tribes and scheduled castes to engage with macro-society if they wish to mingle and migrate across geo-political borders.

The study also offers a glimpse into the loss of natural and social capital when a household unit chooses to migrate to a nearby town or a bigger city in pursuit of employment. It offers an opportunity to reduce migration-related distress upon those choosing to move away from exploitative waged labor at farms and estates, in pursuit of improved quality of life. It equips the migrants in gaining access to state-incentivised benefits that cater to abate further marginalisation in larger urban districts.

Furthermore, it poses an alternative for family members including children to connect to the roots of their relation with nature, and to find solace in creating a reformed sense of community in the face of accentuated vulnerability due to migration.

## **2. The case of nature in tribal learning**

Hamlets are not proximate to state-run schools in tribal areas, and the harsh terrains offer low access to any NGO intervention of sorts. The presence of a few not-for-profit enterprises are pretext to the source-availability of funds, the intent and vision of investing in social causes, and the agency of misappropriating funds to self-benefits under the garb of tribal-aid. In such conditions, quality education for tribals is almost inaccessible - given their socio-political setting.

The classroom modality of learning further displaces their learning styles of observing nature and learning from experience. This is the fundamental flaw in the learning modality offered as an intervention program to tribal kids in the name of literacy development. It has been proven in several alternative approaches to schooling that nature-centric learning is key to building on kinesthetic, problem-solving and creative skills beyond cognitive and auditory modes of learning.

Nature-based learning is practiced at many elite-urban alternative schools. This has shown tangible benefits to body and motor skills development alongside emotional intelligence and physical fitness. It has helped detoxify technology and internet dependencies by shifting the focus to activity-based approaches to schooling and active-participant-led education. Field based learning programmes have proven to be task oriented, practical as well as cognitive in solution findings of real-world scenarios (Adrienne C et al., 2009). This hasn't been applied back to communities living in forested landscapes - wherein it is even-more essential. Thus, the pretext of this study is to resensitize pupils estranged from the environment, back into ecological awareness and to strengthen nature-derived observational learning.

### **a. Adivasi roots with ecological consciousness and environmental sensitivity**

Migrant children are bereft of the principles of nature and its mechanistic imprints. To observe fundamental processes and patterns requires time and patience in a schooling framework that is anchored in learning in the midst of nature. Tribal kids in their homelands get a sense of what constitutes forest dwelling, and they observe adults

who use forest resources for their daily living. When a family unit decides to leave or is evicted from their very homeland, coping mechanisms to not feel the absence of daily engaging with nature are restless over-work and settling for under-pay. The adolescents are stripped from a fundamental freedom to roam in their surroundings, by inter-caste judgments and inter-tribe conflicts in the face of a lack of equitable access to amenities and services in a new neighborhood.

It is more-so essential that kids of migrant families cope with a new natural habitus by engaging deeply in the limited greenery the surroundings have to offer. Outdoor classrooms and nature walks are powerful modalities of inducting kids to nature-influenced learning activities.

Field Trip in Natural Environments (FiNE) framework suggests the use of traditional pedagogies and highlights the importance of social interactions in negotiating pedagogical design for learning in the midst of nature (Orly M et al., 2012). This extended to indigenous knowledge systems helps preserve the rich ancestral heritage via a revival of environmental wisdom in young minds. And to revive tribal practices through schooling, the only way is for the students to accompany their elders on honey collection, edible fruit-root and leaf gathering, and hunting encounters in wilderness-like settings.

For a school to accommodate life-skills development contextual to habitus and culture, one must redesign curricula to meet such needs that enable residence in one's homeland rather than opting to migrate. A schooling approach needs to be inclusive of the environs of learning that a forest-dweller would go through in their childhood days to be formally accepted as a clan member.

#### **b. Way forward for learning amidst the forests**

Tribal inclusive schools must inculcate local regimes and oral folklore into their methods of teaching. Village panchayat skits and drama plays, alongside poems and songs relevant to oral histories, must be taught at lower grades. The emotional wellbeing of teachers must be kept in mind while training them to empathetically teach kids with

learning difficulties. Special learning needs training must be compulsory for adults to engage with autism, ADHD or dyslexia in an informed manner.

Nature projects, eco-friendly and sustainable concepts must be introduced at an early stage so kids are sensitized about resource conservation, wildlife protection and the ills and benefits of ecotourism as a policy discourse. They must be attuned to make individual choices regarding furthering their career, academic pursuits etc. with art being the centrality to authentic sharing, critical thinking and creative expression.

### **3. In pursuit of cultural relativity and heterogeneity in a peri-urban setting**

When populations are displaced due to dam inundation, HEP projects or scientific forestry acquiring community land, they are faced with a foreign mismatch to the prior beliefs they once had about culture, communityship and belonging. Lands and resources are being privatized and the tribals are alienated from the use-rights they had over collective ownership and management of forest resources.

To exist in a fragmented culture of sorts, one must essentially find belonging and daily persist to engage in a dialogue of what one seems apt to accessing nature as a source of inspiration and identity construction. The process of identifying oneself with a jungle stems from a deep inheritance of constant engagement with nature, that isn't tangible in words. Scientific enquiry is principled on the mind's interaction with and observation of nature. Yet the distilling of such a process comes from socio-scientific engagement within the forum and framework of a dialogue with society, on the relevance of an interpretation of nature. (Dilek K et al., 2017). Thus society is key to knowledge production, discoveries, innovations and information building, and retaining ecological wisdom therein. Without a sense of community, all the knowns are trivialized to individual existence without a framework to structure the already-explored.

When cultural homogeneity extends to cross-cultural exchange and inter-cultural dialogue, the credibility of individualized experiences are discoursed to form a narrative of the relative nature of truths. These systemic shifts in anthropological viewpoints broaden us to reach absolute truths via a constant debate with interdependence,

coexistence and the web of life. A shift to an unknown socio-politics of land and resources enables one to experience inaccess, and derive extensions to one's idea of cultural heterogeneity and plurality. In this strife with societal pluralism and indifference does one reach the core tenets of humanity, of existence and of being one with nature.

**a. Towards a redefined sensibility of cultural integration in the suburbs**

Cultural reintegration is necessary for a migrant worker family that has been left with no choice but to relocate. The hardships of establishing a sense of home, of paying rents and water bills, of consuming commodified food and power, is an act of estranging yourself from familial practices back in your homeland. The traditional practices associated with informal healthcare support are now to be replaced by formalized allopathy and clinical diagnosis. These may benefit the migrated family, yet they would lose connection with local customs that ensured healthy living in the wilderness.

Culturally relevant classroom science can help integrate traditional knowledge of medicinal plants used in healing to reinforce indigenous practices in the education system for tribal students (Vongai M et al., 2014). This intervention can benefit ecotourism initiatives that revive organic healing in the lap of nature. Tribal youth could showcase their talent in inspiring urbanites to return to roots in a non-commodified way. Rather than depending on monopoly-giants such as accu-touch, ayurveda, unani and siddhi practitioners - one could equip oneself to heal by following age-old practices.

In the suburban spaces, we find hermits in search of ancient medical knowledge. Tribals have the potential to cater to such learning without profiting from information dissemination. And the proprietary rights to use of such wisdom and practice such healing may lie in the hands of tribals. Cultural exchange could broaden the scope of making treatment effective, and serves as an opportunity to reform traditional knowledge to current times.

**b. Inclusive culture and nature based curricula design - a reformed sense to cultural ecologies**

The elements of a Nature Classrooms Framework developed by Seasons Watch is given below. This framework was used to integrate nature and society into the curriculum for children from a remote tribal school in Rural Coimbatore, and another suburban school that caters to kids of migrant waged laborers in Bengaluru. Vidya Vanam Senior Secondary School was founded in Anaikatti at the border of TN State and Kerala to aid in literacy development amidst Adivasi communities living proximate in tribal hamlets across the Western Ghats of that region. There were mainly Kuruba tribes who gathered honey, who sought education for their children therein.



Figure 1: Nature Classrooms Framework (Seasons Watch)

The other school in peri-urban Bangalore, Little Buddha Gurukula Academy is located at Rampura village and provides free to subsidized education to children of migrant worker communities who can't afford or are denied access to free education based on lack of supporting documents to prove their caste / tribal identities, poverty

status and residence / citizenship. Local SC and ST kids are easily inducted into government aided and state run schools with socio-political influence. The marginalized communities from other states and union territories suffer in-access to local amenities that are favored towards regional inhabitants.

#### **4. Future pursuits with semi-urban education**

This paper suggests an educational framework that includes the culture and nature of an SC or ST populace, which steers contextual learning for true representation of their traditional norms and practices. These ancestral wisdoms are often sustainable, help in resource management and in maintaining community healthcare services that are undocumented and in line with nature's essence. Their cultural relations symbolize harmony and interdependence, paving way for redefining secular inclusion, democratic resource appropriation and redistribution of social and natural capital to empower the excluded. 'Outdoor learning is an effective pedagogy to promote inclusion and therefore reduce the barriers for full participation in the primary classroom. It extends on the research upon diverse primary classes underpinned by these principles: multiple means of engagement, representation, expression and action' (Orla K et al., 2022). Diverse learning styles, proactive partaking of inter-cultural richness, authentic experiential learning and activity-based kinesthetic development offer a discourse to engage with tribal inclusive education in both rural and semi-urban settings. It also extends inclusion of minority castes in building an educational narrative that includes beliefs, values and morals that vulnerable communities are guided by, and often struggle to communicate the same with the privileged majoritarian state and society.

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## **Chapter: 8**

# **RESEARCH METHODOLOGY**

While auto-ethnography equips members of a clan to take ownership in narrating their intrinsic cultural identity, researcher-based anthropology helps create an outsider view of cultural richness that an internal narrative may lack. The issue here is to find a way to merge the external with the insider versions, so as to create a dialogue between the two - further enriching the meanings associated with being tribal.

### **Methodologies to engage in researching education for tribal children**

There are two methods adopted by researchers in the field of tribal studies. Auto-ethnography is a process of equipping the community to document its own rich understanding of cultural ecology. Anthropology is a quicker way of reporting from an external view, one's understanding of tribal relations with their culture and ecology.

While auto-ethnography equips members of a clan to take ownership in narrating their intrinsic cultural identity, researcher-based anthropology helps create an outsider view of cultural richness that an internal narrative may lack. The issue here is to find a way to merge the external with the insider versions, so as to create a dialogue between the two - further enriching the meanings associated with being tribal.

Acceptance of diversity in tribal education is the biggest challenge. 'Educational anthropology' supports 'sustainable, people-centric educational policies, curriculum construction, and above all better-focused teacher training', towards integrating tribal communities and minorities as responsible citizens of a culturally diverse nation. (*Dar WA et al., 2018*) [5] This would build secular coherence on multiple commonalities of tribal cultural identity. It would also offer a platform for intercultural dialogue.

But the challenge is to engage in an intercultural dialogue across tribes, other backward castes and marginalized minorities in general. Creating such forums where societal problems are discussed can ease communal clashes amongst the marginal sects.

Shifting from survival mode to interdependence is key to any such intervention that attempts at bridging cultural diversity.

This method of inquiry would further reveal shadows of non-tribal people in their subconscious bias in relating with tribal individuals. It would numb extraneous variables from dictating what they feel tribals deserve, or how much of rights tribes have in choosing their livelihoods to be dependent on natural capital of forested terrains.

The dichotomous method of intrinsic versus extrinsic viewpoints would resolve inter-tribal conflicts and offer a validation of truth regarding marginalization across tribal populations. The dualistic mode of positioning the researcher as extraneous to observe intra-societal discord will suggest a cultural change in approach while discussing inter-clan strifes.

Bringing such a dialogue into education will surely empower the youth and foster true inclusion of tribes with the external world, without compromising on their cultural dilution. Identity building is an important part of a discourse on tribal inclusiveness and diversity.

The methodological approach for this study would be a combination of:

- an anthropological perspective of the researcher's observations and interactions with tribal folks and their relations with people from non-tribal origins.
- an auto-ethnographic account documented directly from students, teachers, grand/parents and trainers of tribal descent - through their engagement with the learning module designed and implemented, based on their assessed needs and context.

This would build secular coherence on multiple commonalities of tribal cultural identity. This method of inquiry would further reveal shadows of non-tribal people in their subconscious bias in relating with tribal individuals. It would numb extraneous variables from dictating what they feel tribals deserve, or how much of rights tribes have in choosing their livelihoods to be dependent on natural capital of forested terrains.

The following research methods have been proposed towards completing this study:

- Resource mapping via in-depth interviews with key-informants on the ethnobotany of medicinal flora used by the community
- Building a curriculum that links forest-based resources to sustainable livelihoods, practiced by tribes - so as to develop a culturally contextual pedagogic approach to engage their children in education
- An ethnographic account of responsive adaptations by members to development and migration, re-interpreting tribal meanings associated with collective management of natural capital - tied through the year-long syllabus of the learning center.

## **A. STRUCTURE OF STUDY DESIGN**

After preliminary data and survey it was found that there needed an equipping of sorts for teachers to deal with cultural divides in both school setups. While auto-ethnographies of students were restricted to arts, creative expression via dance, music and theatre, it was suggested that these skills be honed for a cultural event under the fabric and fashion theme linked to embroidery as an elective in twelfth grade. Girl students being more in number at certain age-groups, tailoring and measurements were linked to mathematics and home science as subjects in particular to the tribal school.

### **Educational anthropology and cultural diversity**

While the goal of environmental awareness amongst future generations of tribes may be easier to achieve, the hurdle lies in co-facilitating mixed cohorts of students. Sustainability as a concept is embedded in action-oriented principles that govern extraction of resources. To put this as a theory for children of tribal communities ensures no delay in knowledge building towards the necessary skills of ecologically conscious harvests. Bringing practice to textbooks also mitigates the erasure of cultural practices and social norms, alongside preserving socio-ecological relations amidst tribal populace.

Since tribes are confined to a strong sense of belongingness to a particular clan 'education among tribal and other marginal communities reflects problems over acceptance of diversity. Educational anthropology could help to support sustainable, people-centric educational policies, curriculum construction, and above all better-focused teacher training', towards "better integration of peripheral tribal communities and other minorities as responsible citizens of a (culturally diverse) nation.' (*Dar WA et al., 2018*) Educational anthropology as a grassroots action-based research methodology has immense potential to detail tribal perspectives to mainstream society, as well as integrate them with the globalization paradigm. All teachers must be trained through cultural workshops that engage in maximizing outcomes via differences in opinion and cultural origin. Teenagers and parents must model acceptance of pluralism in order to make room for cross-cultural dialogue and intercultural learning across clans and hamlets.

As for both schools, the researcher's voice was the prime narrative for an anthropological standpoint on teacher-student-parent interactions beside non-teaching staff relationships built over the study period.

## **B. DESIGN OF DATA ANALYSES**

In one paper published, quantitative data has been reported regarding the tribal school. As for ethnographic works, the field reports narrated interpretations of group tasks during teacher training programs as well as comprehensions of art works submitted under a theme - moon drawings as a part of ISRO's interschool challenge and competition.

### **A framework of cultural ecology for tribal education**

The lens of 'cultural ecology' applied to environmental anthropology as a research method suggests a scope for documenting ethnographic accounts of how tribes interact with nature, based on cultural values imbibed over generations. Customs and traditions, when explored via indigenous environmental wisdom, frames the traditional knowledge inherent in tribal communities. 'Cultural ecology can contribute to environmental science and education as well as to the solution of environmental problems by providing concrete case studies that demonstrate the importance of the cultural factor and by providing a broader cross-cultural and diachronic perspective on human-environment interactions and environmental problems.' (*Sponsel LE, 1987*) [36] With ecological crises being resolved by community-led collective-action, tribal rights to accessing forested landscapes can be ensured by collaborative management of natural resources. Embedding such environmental education approaches while designing pedagogies relevant to the requirement of tribal folks, factors a local context of resources accessible that form the knowledge base of uniquely diverse cultural communities having varied ecological constraints to support their learning processes and skills development strategies.

As the thesis was sociological, many testimonies were used to interpret the qualitative efficacy of transfer of knowledge down generations. A strong bond with non-teaching staff also served well in bringing customary practices to a light of rationale and scientific temper.

Voices and experiences of native tribes have been silenced and pushed aside by official history and colonial rule across the globe. A book on Native American identity (*Lomawaima KT & McCarty TL, 2006*) [19]:

- 'proposes the theoretical framework of the “safety zone” to explain shifts in federal educational policies and practices over the past century.
- offers lessons learned from Indigenous America’s fight to protect and assert educational self-determination.
- rebuts stereotypes of American Indians as one-dimensional learners.
- argues that the maintenance of Indigenous languages is a fundamental human right.
- examines the standards movement as the most recent attempt to control the “dangerous difference” allegedly posed by students of color, poor and working-class students, and English language learners in US schools.'

The theoretical framework that defines a critical 'zone' for tribes to benefit from remaining tribal, can be applied even to the Indian context of the willingness of governmental decisions to be inclusive of tribal rights in their development agendas. The term 'dangerous difference' refers to exclusive rights given to tribals that ensures equity in treatment based on cultural disabilities that limit full inclusiveness, yet pose a threat to equal treatment of all in the larger societal framework. For example, a child from a tribal origin in a non-native schooling environment may be exempt from learning in English as a medium of instruction, accommodating for inclusivity in rights to education, yet they may be assessed at a lower-standard when compared to English learners in a mixed cohort.

The idea of 'self-deterministic learning' is valid across marginalized communities who seek familiarity in a learning approach that is void of their cultural essence. Minority groups in India are vulnerable to faith-conversions that do not necessarily promise a better life, or are vote-banks for politics, and are only brought to the limelight during elections. 'Self-designed curricular development' amidst tribes assures skill-building and

knowledge production that is contextual to the people's culture and local ecosystem processes.

We did follow a child-centered approach and saw to it that the child's voice was primary in every discussion.

## C. SUMMARY OF METHODS

It was important through this research of anthropology and ethnography to detail the rich truth on what constitutes tribal lived reality as opposed to what the state or nation constitutes as tribal identity.

### **A theoretical framework for a discourse on tribal culture**

Many chapters, articles and books have discussed the need for arriving at a theoretical framework to guide the learning-teaching mechanisms developed specifically for tribal kids. The curriculum design and implementation methodologies for tribal schooling tread on shallow murky waters while navigating the protection-conservation discourse with utmost care.

In urban settings, colleges rarely focus on inclusive rights to minorities beyond the reservation of seats for scheduled castes, scheduled tribes and other backward castes. India holds a rich cultural diversity that can be channelled into co-learning through shared beliefs. 'Using the principle of interest convergence, institutions of higher education allow and even work actively towards a particular form or level of diversity, but they do not extend it far enough. Once racial remedies no longer hold value or benefit the institution itself, the status quo is maintained. Ultimately, the university has an interest in "celebrating" diversity and supporting superficial multiculturalism, but it does not have an interest in critical, social justice-oriented policies that challenge the status quo, the current racial order, or the institution's privilege and power.' (*Castagno AE & Stacey JL, 2007*) [4] Especially in the case of tribes, emphasising on a requirement for 'interest convergence' serves as basis for cultural exchange and co-learning. Offering platforms to express and celebrate cultural pluralism ensures that identities are owned, rather than estranged during pursuits to modernisation.

The subtle inequalities must be dissolved via a deeper engagement with cultural divergence, both traditional as well as modern. 'Cultural discontinuity theory, structural inequality theory, and critical race theory have proved useful analytical tools for achieving understanding on the complexities of Native American education.

Transculturation theory refers to the process by which a Native student can journey through mainstream-dominant educational institutions, while building on his / her tribal identity and heritage, and simultaneously learning the cultural nuances necessary to thrive and succeed (in a global world). During the transculturation process students come to rely on and expand upon a strong tribal identity to anchor their personal values, direction, and goals.' (*Huffman T, 2020a*) [15] Trans-culture is a continuous process of identity formation - given a past pre-identity and a current transcendence of newer identities superimposed on one's historic culture. This theory offers accommodation to future ideas of identity, while continuing to preserve ancestral ways of being that serve them in present times.

Language discourse offers the first step towards efforts that help restore cultural identity amidst children of aboriginal descent. Engaging in exploring the origin of culture, its form and attributes - frames behavioral trends amidst natives that ensure conserving both ecology and culture. 'Consistent with the premise of transculturation theory, the educators regarded a strong cultural identity reinforced by culturally relevant pedagogy and curriculum as critical to the success of their students. Additionally, they related the general opinion that reservation schools can and should provide significant contributions toward cultural and language preservation.' (*Huffman T, 2013*) [14] Basic art-based non-vocal expressions of culture and knowledge of the environment can be planned programmes amidst multi-cultural cohorts that essentiate a basis for exploring tribal societal structures that endorse concepts of sustainability, resilient functional traits that preserve and evolve culture, and practices and values that serve well towards conserving resources.

Through cross-cultural dialogue the unique traits specific to honey collectors as opposed to herders or pastoralists could clearly be identified. Common traits across tribes were also discovered towards a collective entitlement of identity and lineage.

A few teachers did have their views on why their culture must be visible, yet a section of students disowned their very own identity.

Tribes across the world have been subject to theories of analysis that suggest their displacement from forested landscapes and their own cultural erasure. In the case of castes in rural India, 'Critical Race Theory's principles and methodology can be employed to research discrimination within India's school system. CRT is proven to be sensitive to the differences in context and still retain its philosophical center. CRT may be particularly helpful in highlighting the educational discrimination experienced by Dalits via use of CRT's social construction thesis to conceptualize caste and intersectionality to understand caste's relationship to gender and class.' (*Goodnight MR, 2017*) [12] Since discrimination isn't as evident in self-sufficient tribal societies living in remote parts of forests, the transculturation theory serves better to understand challenges faced by tribes of India, where tribal folk are constantly reminded of resource-use rights and intellectual property of traditional wisdom, while also choosing or being compelled to shift to urban, agrarian and industrial sources of income outside forested landscapes.

Through dialogue, one was able to map out variable meanings to tribal identity and its various needs to remain invisible versus visibilized towards a collective good.

Transculturation theory and Tribal Critical Race Theory serve as the best-fit frameworks to engage tribal students in environmental education. They help bridge ecological consciousness in young minds alongside preparing them with skills towards sustainable livelihood decisions in a rapidly modernising tribal world that witnesses massive shifts in forested landscapes. 'Critical Race Theory (CRT) and Tribal Critical Race Theory (TribalCrit) offer the possibility of unmasking, exposing, and confronting continued colonization within educational contexts and societal structures, thus, transforming those contexts and structures for Indigenous People. Utilizing CRT and TribalCrit to support and inform "Multicultural Education as social justice", we rid ourselves, our educational institutions, and ultimately the larger society from the "food, fun, festivals, and foolishness" form of Multicultural Education that maintains or propagates colonization.' (*Writer JH, 2008*) [40] Beyond language barriers and cultural differences, tribal discrimination in integrative schools deters quality educational services provided to inclusive schools having a mixed-culture cohort.

At the school in Bengaluru, it was challenging to get students or parents to dialogue about culture with their vast divides across the Indian subcontinent.

## **Chapter: 9**

# **RESULTS**

The anthropological views of the researcher are collated as lived experience of the observer in the socio-natural setting of the observed. It is through phases and seasons that these observations have been reported as a semi-fictional response to the confidentiality of the subjects concerned.

The auto-ethnographies of teachers have been attached as testimonies in the annexure, and those of students are drawings and images -also therein, of their participation in programs held at both sites of study during the period of research.

Through teacher training it was brought to light their need to understand minority views and vulnerability due to marginalisation. Therapies in pairs and groups revealed distress levels faced by teachers in handling peer dynamics with students and colleagues.

It was further disclosed during student engagement at fairs / carnivals and in competitions that the student voice and perspective had to be central to an inclusive education model. Their eagerness to express is a means of cultural preservation, and their curiosity in inquiry promotes the retaining of natural wisdom.

At both schools the fundamental exploration of lived space in their immediate surroundings was brought-forth in their engagement with cultural validation of identity and sense of belongingness amidst the natural environ of flora, fauna, air, water and soil.

### **Vidya Vanam Senior Secondary School - Anaikatti, Tamil Nadu**

The nature of schooling here was enmeshed in the learnings via treks to the tribal hills, the visits to Salim Ali's Ornithology Lab, or to the Nilgiri Biosphere Nature Park - a Botanical Garden. The classroom was the living space external to the walls and gates. The immense potential of biodiversity was encountered each morning by students walking to their bus stops or to the school premises from remote hamlets in both Kerala and Tamil Nadu.

The evenings after school were tuitions at the panchayat halls of hamlets, by social science teachers. The English and art teachers from distant towns resided on campus and did their planning for the next day, breathing the silent air of the atmosphere after school hours.

The support staff bonded with the teachers, and worked tirelessly from early dawn to the late hours of dusk. Teachers who stayed in quarters away in the guest house walked miles each day along elephant trails or on a roadway earmarked by tribal histories of a temple, a stream, a grassland, a pond, a bridge, the village water tank, the slope where peacocks visit each morning etc.

The schooling community altogether had an immense immersive experience even before and after a day at school. The tribal teachers underwent training programs and gave their best at educating the minority group of students with an unbiased mindset. The non-native teachers didn't exercise power or privilege, rather were humbled by the learnings of the tribal children. Teachers from Palakad and Coimbatore took up part time jobs to teach Hindi and Bharatnatyam to the students.

At first we conducted art therapy workshops for teachers. This involved them using craft to create murals on the floor of art by using natural leaves, rocks, seeds or twigs. We held it conscious that only dead dry and decaying plant matter will be collected during nature walks.

The teachers also scripted Ooru Panchayat, a play - attached as annexure, for kids to perform during annual events to be aware of socio-politics of the place. The play was then directed and enacted during the Arts mela with the theme Fashion and Fabric.

The whole of term two went in planning the cultural event and children joyously celebrated by hosting a science fair on renewable and sustainable clothing, local attire and cultural associations of seasonality of clothes draped and used.

The children also participated in ISRO's moon drawing inter school competition. The kids drew perspectives, shades, shapes and sizes of the moon with other natural

elements that relate to the moon. Their emotional intelligence was strengthened by this exercise and they were able to calm their anxiety levels with reflective paintings on what lunar phases meant to them.

The students were further grouped and categorized as per their tribal names, gender ratio and across class categories. A working paper of the same summarizes their portfolios. The results of this fulltext were peer-reviewed by Indian Journal of Psychology and Education, with guidance from Institute of Holistic Mental Health - Tiruppur, Tamil Nadu. Child psychology and teacher psyche was the focus of that part of the macro research. Mental health modules conducted with teachers are also attached as annexure.

### **Little Buddha Gurukula Academy - Rampura, Bengaluru**

At this bridge school in peri-urban Bangalore, the philosophy and pedagogy had to be built with the founding members - as it is a relatively new school yet to be established. Dialogues with the principle, and core teacher training workshops ensured that children of tribes and castes from diverse ethnic families were treated equally towards admission for quality education into higher grade mainstream schools around the area.

The premise of starting a play school that helps bridge kids from lesser privileged backgrounds, denied seats under non-local pretexts of citizenship proof etc., was that they don't lose out on gap-years and face inadequacies in their learning progress. The school runs upto grade 5 from pre-KG. Its distributive student grouping is enclosed as annexure along with teacher portfolios.

It was discovered here that the teachers were local residents whereas the children were from all across the country as their parents were migrant laborers who had unsettled home environments. This distress brought a sense of trouble and worry in younger minds with dyslexia, ADHD etc. as symptoms of neglected care. The vulnerability due to migration couldn't be quantified at scales yet there seemed to be a perceived lack of identity and belonging in both children and parents.

To navigate this lack and strengthen the need to identify as a community across cultures, harvest festivals were celebrated. The study here also brought-in relevance of cultural appropriation to any school anywhere in the nation, not necessarily providing education solely to tribes.

From green day to yoga day, annual sports meet, children's day and teacher's day - the school celebrated its identity and mixed culture with effective participation and enthusiasm. It was found that placing holistic learning and children as central to a place-based learning approach was central to the significance of the study - as highlighted as the full text of a working paper in the preliminary research findings of this report - mentioned above.

## **Chapter: 10**

### **DISCUSSION**

Beyond the scope of planning and executing a learning module of cultural relevance and ecological context, the comparison across a tribal to semi-urban environment served in justifying the significance of environmental education for schools. It was also suggested that art as a medium can surpass language barriers in helping children of diverse cultures engage in a learning beyond linguistic limitations.

#### **Ecological consciousness and cultural relevance in syllabi offered to tribal children**

Environmental education as an extracurricular activity fits well with the theories relevant to tribes, discussed above. The subject can be aptly viewed through Transculturation Theory and Tribal Critical Race Theory - so as to offer perspectives on pedagogical design approaches that can help implement culturally relevant and ecologically sensitive curriculum in learning processes offered to children of tribal backgrounds. It has the potential to connect disciplines via an applied and experiential learning process, seamlessly - for example - principles of physics in atmospheric geography, or concepts of biology in political science of conserving biodiversity. If developed as a robust module, with great care and thought, it can channel awareness towards community action initiatives that endorse conservation of resources. The subject has scope, as an intervention - to support skill-building towards sustainable livelihood choices amidst tribal folks. 'The need for locale specific biodiversity education materials stressing the importance of biological resources was felt important for the Soliga community as their livelihood depends on the natural resources available in the surrounding forests.' (*Poojar IC, 2005*) [30] This review builds a theoretical framework to engage with interventions that support tribal schooling. It stresses the shift in focus from compulsive integration of tribes into dominant social interactions, to building inclusivity and diversity within their cultural territories. The study emphasises a cultural ecology based curriculum to foster a continued preservation of beliefs and self-regulations amidst the tribal folk. The research argues for Tribal Critical Race Theory to explain the complexities of cultural origin and relation to land and resources,

so that tribes aren't estranged from their aboriginal lifestyles. Finally, it suggests that environmental consciousness be embedded in the curricular design of tribal schooling.

Even in a city setting, the urban-greens are sufficient landscapes to explore environmental science and arts as a naturescape of urban parks and water bodies.

More importantly it was signified through this research that training to teachers, time-scheduling for kids to be steered into extracurricular, and developing a strong pedagogy in terms of ecology of ethos - and principles of intercultural harmony and celebration - would serve well in designing the overall philosophy of a school.

A pedagogical approach that encourages ecological context and cultural relevance engages tribal children in a teaching-learning process that is holistic to their needs and respectful of inter-generational shifts in livelihoods. Transculturation theory attempts to bridge contextual variabilities amidst the tribes of India and their neighboring modern settlements - be it villages, towns or cities. The educational system unique to the social and environmental issues of the tribes shall inform the youth of the potentials of community conservation efforts, thus making the reassertion of their rights to land and resources - feasible - given the dynamics of modernization and migration.

## **Chapter: 11**

### **LIMITATIONS OF STUDY**

The study couldn't factor in climate informed curricula nor could it include climate resilience in the daily operations such as biogas as a clean fuel, cow dung in cooking, solar heating and rainwater harvesting that other schools follow.

#### **Towards sustainable livelihood choices and community-led resource management strategies**

A theoretical framework for the capabilities approach to contextualize education for children from families having tribal backgrounds, offers ancestral knowledge on sustainability as a means of co-managing local resources through vocational training and skill building programs, for the teenage group in particular. Kids of indigenous families amidst biodiverse buffer zones within forested landscapes, or those of migrated nuclear families in nearby towns and villages - all require a contextual curriculum that suits the aspirations of that unique culture. Environmental awareness of local biogeographies, cultural values and beliefs that drive community conservation efforts alongside sustainable development initiatives is a modality to promote inclusive action via education towards appropriating tribal rights.

The responsiveness of tribal societies to climate science, for example, can be interpreted as actionables - accommodated by tribal cultures in supporting the climate agenda, or adapting one's traditional practices to be less associated with climate vulnerability. In a study, on appropriating fairness to tribes for being the indirect victims of climatic irregularities, trajectories of adaptation over time suggest that justice and equity come alongside owning up one's responsibility to aptly respond to externalities. Equitable access to climate adaptation strategies is ensured only if tribal populations actively participate in maintaining ecosystem balance, or partake in collaborating with the state in its strategies to curb the effects of global warming.

A framework that ensures equity in appropriating costs and benefits of climatic abnormalities, to marginalized victims such as tribes - helps equip them in adapting to the

political dynamics of climate-justice. 'The framework situates justice within the systems of responsibilities that matter to tribes and many others, which range from webs of (biotic dependencies and) inter-species relationships, to government-to-government partnerships. Justice is achieved when these systems of responsibilities operate in ways that support the continued flourishing of tribal communities.' (*Whyte KP, 2013*) [39] Reallocating responsibility to conserve one's natural resources across minorities such as aboriginals, helps in fairly redistributing the benefits of collective conservation efforts - directly to those at-stake.

The framework for the economic growth activities common across tribal settlements - such as eco-tourism, sale of handicrafts and forest-produce etc. - as a means of reclaiming cultural heritage amongst newer generations, offers potential for upskilling knowhow without estranging the people from their relatability to place. A focus on primary skills required to bridge the intergenerational shifts in means of earning offers a refocus in pedagogical design for tribal schools that links them with land and resources. Prioritizing recommendations to policy shifts helps inform governmental decisions via such modalities of imparting educational services to the students of tribal schools. This vocational educational framework emphasises learning to be accessible to and catering to the dynamic requirements of tribal societies across place, political scenario and time.

Vouching for inclusive decision-making entrusts tribal folks in their collective efforts in managing climate externalities. While the framework of justice tied-to responsibility is crucial in mobilizing community engagement in the politics of climate science, it lacks the aspect of sustained livelihoods that make tribes want to play a role in shared-duties towards conserving natural resources. Another study indicates a framework that stitches assurance in means of earning with socio-environmental as well as political constraints of the surroundings. The built-narrative of policy wedded to state and society often leaves traces of how much environmental protection is prioritized within a geo-political landscape. Here the role of stakeholders is critical to developmental indicators explained below.

'The framework for analysing livelihood security of tribes, defined here in relation to five key indicators (Education, Food, Health, Habitat and Economics)' suggests the effectiveness in interventions planned and implemented by a 'range of formal, informal, organisational and institutional factors (parties) that influence sustainable livelihood outcomes.' (*Keerthana V & Shanmugam TR, 2019*) [17] The basis for a successful environmental economics model to reap profits from forest resource management lies in the nutritional and wellbeing areas of concern. Within tribal hamlets, nutrition and welfare are imbibed through seasonal harvests and medicinal value offered by the flora and fauna of the microhabitat shared by them and the wilderness. This wisdom of the health benefits of nature-derived medicine is documented across many indigenous cultures. What lacks here is contextual education that meets cultural expressive and indigenous knowledge needs of the young age-groups of tribal families. To ensure sustainability criteria to be met across the inter-generational divides, it is inevitable to link learning with life skills, offered by a host of stakeholders interested in improving the living conditions of such minority groups. From state-led interventions to NGO efforts, synchronizing the timely use of locally available resources with livelihood dependencies amidst the aboriginal folk has been the focus of effective natural capital management by the community themselves. This helps them gain direct access to seasonality in resource appropriation across the social structure, ensuring a certain degree of equity in distribution of nature's wealth to those choosing sustainable means of earning from forest produce. But if the learning system doesn't imbibe fairness in resource and benefit sharing, the societal hierarchies continue to be unjust and inequitable in reaffirming marginalisation of minority groups - both within and across ethnic communities.

However the study couldn't examine climate change vulnerability and responsive mechanisms in this regard. Though touched upon descriptively, a quantitative measure was difficult to arrive at resilience within communities.

## **Chapter: 12**

# **CONCLUSION**

The research concludes with findings that environmental science is a holistic and integrative subject that bridges disciplinary and theoretical understanding of nature and ecology into a practical and transdisciplinary way. And that art therapy and art engaged classes could facilitate cultural dialogue beyond any language constraint, both amongst teachers and students - in ways that sensitize the school with equality, plurality, secularism and regards for the environment and society.

### **Navigating cultural divergence in vocational training offered to tribal communities**

In context to designing curriculum and implementing learning strategies for tribal children using an appropriate pedagogic approach, the study situates the cultural ecology of the tribal and migrant populations into the educational framework used in tribal and semi-urban schools. This leads to the emotional and cognitive development of students in relating to ecosystem services offered via sustainable livelihood choices that the elders have relied on, while living amidst forested landscapes. It was found that environmental awareness and biodiversity consciousness are key elements through which younger generations respect and relate to their surroundings, cultivating conservative practices that result in a sustainable anthropocene for tribal societies to thrive in conflict-ridden politicized landscapes with or without migration. Thus it was essential to develop curricula and implement syllabus that emphasizes ecological sensitivity.

It was documented that tribal communities entail a rich diversity of cultural roots and unique relationships built over eras of engaging with evolving biomes. Variation in beliefs and norms positions tribes with identities that are unique to the collective consciousness imprinted in each clan and the bio-geographical boundaries that are reshaping and shifting with time. 'Cultural diversity' in the lens of cultural ecology presumably helps in shared accountability in community-led conservation. This was difficult to realise as a lived experience of communities in conflict with field constraints such as resource scarcity, access difficulty and deprived rights. It was established through

this research that teaching tribal kids to value cultural variance instills in them a sense of togetherness in collective stewardship of responsibilities towards ecosystem preservation and resource conservation.

In educational interventions for mixed tribal societies, which strengthen pluralistic cultural dialogues - similar to approaches in business - 'the institution or faculty (must) develop a systemic and integrated approach that enables staff and students to value intercultural diversity. The research literature on intercultural (diversity) suggests that intercultural competence is a dynamic, interactive and self reflective learning process involving staff and students with the potential to transform values, skills and knowledge.' (*Treleven L et al., 2007*) [38] This was an extension of transculturation theory that was applied to designing teacher training modules that inculcate inclusiveness and cultural expression while engaging in tribal learning alongside cultural diversity.

According to the aims of this thesis, teachers must be trained to channel non-compliance, intercultural friction etc. into co-dependencies where unique traces of origin define the expertise that is of value to diverse groups. As a part of culturally responsive teaching, unique skills offered to the group based on one's culture and interaction with their own environment, builds resilience for the interacting members as a whole. Applying knowledge dialogues across cross-cultural engagements boosts co-management of resources, thereby promoting fairness in shared benefits of a model for collective ownership, as experienced in the art 'melas' hosted at schools.

One of the barriers to accomplishing the research objectives of strengthened cultural diversity were ego-bound rigidity that values intra-tribe growth over inter-dependencies that prioritize the building of inter-tribe relations. The other trivial constraint, once the universalization of traditional identities is established - is language divergence. Many tribal populations share similar roots of descent, yet identify with regional narratives of claiming theirs to be truer and purer than that of other tribes. This 'diminishing and othering' is common across castes and faiths that have had similar struggles in preserving historical narrations.

While secularism, and respect for other cultures was introduced as moral values in the social sciences wing of the schooling programme across the rural-periurban terrain - it is more crucial to destigmatize popular beliefs that limit tribal cultures from dialoguing with each other and with the macro society. In preserving oral languages, oral histories and tribal folklore were used to consolidate the essence of a tribal life for the communities to revalidate their identity in peri-urban to rural engagements with larger society.

"Language revitalization' may confer protective effects' such as in realms of education, finance and wellness, 'suggesting that it is better understood through resilience. A more holistic framework also provides an intellectually coherent integration of language revitalization, language documentation, and language itself' amidst native societies. (*Fitzgerald CM, 2017*) [11] This thesis demonstrates a renegotiation of cultural differences to arrive at common grounds to define tribal nature, even in an urban setting. A-politicizing the tribal literature can reveal cultural traits that signify sustainability and conservation as principles in practice in their homegrounds. Climate and conflict resilience can thus be attained if the politics of tribal struggles could be reinterpreted without the power dynamics - indicating true tribal needs that must be met with or without migration.

Mere integration of tribal learning into mainstream education of rural India doesn't serve the true needs of the tribes as discussed in the published papers of this study. A curriculum that positions their ancestral dependencies on ecological processes equips communities with skills necessary to navigate migration or assert ecological identity on their cultural landscapes. Whether tribes choose to stay in or migrate away from forested landscapes, the role of governmental and not-for-profit interventions is to enhance the capabilities of tribal folk - anchored in their ancestral relation to land and resources.

A direct academic relocation of tribal learning that is void of environmental memory may leave future generations unequipped to deal with a gap in the continuum of relating to land and its resources. Focusing on emotional and cognitive abilities or tribal

skills that necessitate a continued engagement with natural capital, can help secure livelihoods for future generations. Ecotourism and small handicrafts entrepreneurial skills challenge and include tribal rights in dominant discourses around development.

With respect to vocational training amidst teenagers from rural backgrounds, "the process of skill development through establishments of institutions; launch of policy/programmes and their linkages with micro-finance" is essential in promoting sustainable development amongst rural youth. 'The distinctive nature/features of micro-finance' are interacting and constantly evolving alongside 'the dominant forces of societal structure, social relationships, social interactions leading towards collective interests and norms that shape the quality of life' amidst the rural populace. (*Singh V, 2016*) [35].

This is more-so true in tribal communities, where microfinance may have to be introduced via concepts of natural capital, collective ownership, and consensus of agreement keeping culture and ecology as focus. It is even more relevant to the sustenance of tribal occupations that they are supported by micro-credit schemes made available by NGOs that work with tribes, helping in the marketing of cottage-industry products in urban areas. There is a growing demand in the people of cities to reconnect with innate human characteristics associated with tribal living. In sectors of plant-derived medicine, cultural symbolism of tattoos and fashion garments that have tribal elements, or wood-fired cooking in earthenware, a return to the wilderness conceptually seems to dictate the ambience and decor at restaurants and resorts. Ecotourism can serve as a job opportunity for tribal youth, having immense potential in their engagement with their outer worlds. Eco-tourism as a potential sector is where tribal youth could seek rewards with a mindset of entrepreneurship and enterprise, building informal sectors like handicrafts, honey and spice markets etc.

## Chapter: 13

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## Appendices

### Appendix: 1

#### Curricular Framework for Art ‘Mela’ at Anaikatti

<b>Subject concept</b>	<b><i>Applied skill</i></b>	<b>Subject concept</b>	<b><i>Applied skill</i></b>
Apparel and Fashion in Mathematics	<i>Discounts and Sales Sizes and Measures</i>	Attires - diversity across cultural geographies	<i>Respecting faiths, understanding weather and choice of fabric</i>
Automotives in mechanized farming	<i>Use of machines, impact on manual labor, time-saving efficiency</i>	Dress code relevance in food processing	<i>Occupational safety, quality check on products</i>
Locally available resources	<i>Sustainability vs. Trade benefits</i>	Handloom skills	<i>Artisan employability</i>
Natural substitutes	<i>Safeguarding the environment</i>	Micro plastics and synthetic fibers	<i>Impacts of unsustainable practices on ecology</i>
Plant vs. Animal derivatives	<i>Soil quality vs. Animal ethics</i>	Revolutions in Garment sector	<i>Good vs. Bad choices</i>
Trading fabric and dyes	<i>Swaraj Movements of pre-independent India</i>	Consumer preferences	<i>Customer Trend Analysis</i>

## Appendix: 2 Stakeholder Engagement Plan

Stakeholders involved	Intervention methods	Possible outcomes
Kids of aboriginal descent	Classroom interactions	Documenting rich knowledge passed-down generations, with a focus on environmental awareness and social norms
Teachers from tribal backgrounds	Teacher training programmes, workshops and pedagogy re-design courses to include cultural contextualisation	Sensitizing teachers to the need for reviving sustainable livelihoods and resource management strategies into the curriculum for learning
Teachers from non-tribal backgrounds		Building empathy in linking parental and adolescent needs in light of preserving traditions amidst orientation to globalized living
Parents of indigenous children	Participatory Rural Appraisal, Focused Groups	Discoursing cultural confluence of beliefs and values linked to customary use of nature-derived medicine, being diluted with modernisation
NGO staff - field guides and teacher trainers	Designing training modules for target audience and purposive intervention implementation	<ul style="list-style-type: none"> <li>● Techniques to engage varied stakeholder needs towards successful integration of cultural context with the development agenda</li> <li>● Linking sustainable livelihoods and community based natural resource management to curriculum development at tribal schools</li> <li>● Designing a community engagement model for the vocational training programmes at learning centers for the indigenous people</li> </ul>



**Appendix: 3 Questionnaire**

<p><b>Questionnaire</b></p> <p><u>Purpose of the survey:</u> ----- to collect preliminary information on cultural practices of tribes, associated with their relations with nature, specific to medicinal flora</p> <p><u>Name of the ethnic Community:</u> Jenu kuruba</p> <p><u>Location:</u> villages in the vicinities of Nagarhole National Park and Aralam Wildlife Sanctuary</p>	<p><b>Knowledge of Nature (wilderness)</b></p> <ol style="list-style-type: none"> <li>1. Species Interactions (threat versus use-value)</li> <li>2. Health benefits vs. Resources as a means of earning</li> <li>3. Cultural practices, religious beliefs etc</li> </ol>	<p><b>Shifting means of living - migration, development and facilities towards secured wages in urbanized settings</b></p> <p>What is the community's perspective on continuing traditional legacies of wilderness living? Vs. Enhancing standards, switching livelihoods and adapting to the state's development agenda.</p> <p><b>Reasons for choice between traditional modes of sustenance vs. Modern avenues of growth and enhanced standards of living</b></p> <p>What factors (extrinsic vs. Intrinsic) enable decisions regarding formalized skill-ups to serve rural and urban job-markets vs. Staying rooted in culture and tradition of ancestry?</p>
<p>Name of the informant:</p> <p>Sex &amp; Age:</p> <p>Marital Status:</p> <p>Village of Residence:</p> <p>Region of Ancestry:</p> <p>Languages spoken:</p> <p>Years in honey collection (descriptive):</p>	<p><b>Ethnobotany as a lens to ecosystem services (plant-centric)</b></p> <ul style="list-style-type: none"> <li>● e.g. In the case of honey collectors, what efforts in conserving wild flora that the bees visit or nest on, are in place by the community?</li> <li>● What is the awareness level of species</li> </ul>	<p>Community effort in reviving indigenous skills and information, disseminated down generations</p> <p>Role of eco-tourism in replenishing a reunite with Natural resource use vs. Individual embedded in societal progress within the paradigm of globalization</p> <p><b>Association with Sacred groves</b></p>

<p>Allied sources of income (detailed):</p>	<p>regeneration, ecological aspects relating to plant-interdependencies (if any)?</p>	<ul style="list-style-type: none"> <li>● What customs drive faith in preserving sites of pristine origin?</li> <li>● How has the meaning of, or definition ascribed to - the upkeep of a sacred grove, changed with time?</li> </ul>
<p><b>Wisdom associated with livelihood(s)</b></p> <ul style="list-style-type: none"> <li>● What is the nature of skills acquired from the means of earning through dependency on natural resources?</li> </ul>	<p><b>(Human-centered) Concepts of Sustainable Harvesting</b></p> <ul style="list-style-type: none"> <li>● What practices direct the tribe to respectful use of nature's reserves?</li> <li>● How are the practices effective / dysfunctional in current times of forest fragmentation and encroachment?</li> </ul>	<p><b>Education centric understanding of baseline learning levels and modalities in the existing tribal schools</b></p> <ul style="list-style-type: none"> <li>● Environmental awareness</li> <li>● Cultural values and beliefs</li> <li>● Sense of community vs. Individual aspirations</li> </ul>

**Appendix: 4 Nature Classrooms Tenets suggested by the research**

Environmental Sensitivity	Contextual To Pedagogy	Cultural relevance	Learner specific
Adaptable	Age integrative	Practical / Applied	Explorative
Sensitive to varied views	Scalable	Inclusive of cross-cultures	Health conscious



Source: Seasons Watch

**Appendix: 5:Assessment report at Bengaluru Rural North Campus**

The migrant kids were void of nature sensitivity and had to be reignited via nature walks, gardening and farming activities	They had no context to sense of home due to their displacement and associated vulnerability due to marginalization in peri-urban settings	The mixed cultural cohort lacked a common point of celebrating cultures as their customs and festivals were unique and diverse	While teachers used strategies to engage in diverse learning styles, consolidating the basic grade-level concept as a class wasn't possible
Adapting the NCF to this tiny school was challenging in a way that it was tougher to integrate learnings at the applied level	The mixed-age cohort mode of learning proved beneficial to this aspect of the NCF, where learnings were shared across grade levels	Hands-on activities involved size, alpha-numeric puzzles, shapes, color and texture, as well as clay molds and planting of saplings	Student enquiry into learning wasn't as evolved to reach the explorative zeal. Yet basic concepts led to preliminary quests to find reasoning and rationale
Cross-cultural acceptance was at a high without any intervention, though conflicts and tensions also arose quite frequently	Scaling down the NCF to Montessori level of covering basic concepts made it even more difficult to execute learning modules beyond the comprehension stage	Cross-cultural dialogue only could be possible via art and music, using non-linguistic modes of communication to build inclusivity	Health of students was still a sector to be prioritized as malnourished kids weren't taken care of by working parents, and were left until the late evenings at school

Environmental crafts and nature drawing proved impactful to resensitize them to the new ecology	Belongingness was re-envisioned for the schooling community, embedded in the culture of the peri-urban village	Harvest festivals, the arrival of rains and water or sun gods were common points of confluencing cultures	The primary year program was planned as a MAG cohort and not staggered across grades 1 to 5
The specific needs of each child could be met through the small cohort mixed-age grouping approaches of peer-assisted and senior-led learning	No intervention required	No intervention required	Why and How were questions that were encouraged in the learning process
Circle times and non-competitive sports with rewards for participation helped minimize inter-cultural conflicts	Learning modules were restricted to understanding basic conceptual knowledge	Songs must be multicultural, oral histories and traditional folklore could be a merger across cultures	Organizing potlucks funded by CSR initiatives needs to be planned effectively to ensure student nutrition



**Appendix: 6 Syllabus**

<u><i>Subjects</i></u>	<u><i>Perspectives as skill-building and exploring knowledge</i></u>	<u><i>Outcomes as progress in learning</i></u>
<i>Language and Literature</i>	<i>Folklore, Oral stories, Plays and Community Narratives</i>	<i>Cultural specificities pertaining to belongingness, identity, indigenous wisdom and acknowledgement of ways and efforts of forefathers / ancestry</i>
<i>Social Sciences (civics)</i>	<i>Folktales, Beliefs, Customs, Oral History, Communal Norms, Biogeography and resources</i>	
<i>Math and Phy</i>	<i>Measurement units existing alongside traditional trading practices and Familiarity with equipment used / phenomena observed in day-to-day living</i>	<i>Skillsets relevant to measuring land and commodities, relating to physicality of experiential learning</i>
<i>Chemistry and Biology</i>	<i>Environmental chemistry and ecological biodiversity as basis for exploring concepts - nature-centric learning</i>	<i>Nature of natural resources, renewability vs. awareness on depletion, community conservation interventions</i>
<i>Financial and Computer literacy</i>	<i>Markets of trade, Apps and Use of internet to avail schemes / incentives, Form submission awareness etc</i>	<i>Sustainable livelihoods and entrepreneurial initiatives towards building-on natural capital management</i>
<i>Arts, crafts and play</i>	<i>Body mindfulness, cultural expression and sustainable art, livelihood links to skills as forms of art</i>	<i>Art therapy, healing from cultural shifts, co-ownership of land and resources</i>

## **Appendix: 7 Curriculum Development**

This component of research started for and with Vidya Vanam Senior Secondary School (VVSSS) - Anaikatti, TN. But along the process of scaling down and diversifying learning modules for lower grades and varying student compositions across states and towns, another school in suburbs of Bengaluru - Karnataka with a migrant student population and an age distribution across Kindergarten to Primary School levels was selected to test for adaptability, recontextualization and adoption of learning modules across disciplines, cultures and not limited to tribal schooling.

Post the rich survey of multiple intelligence and learning styles across higher grades at VVSSS: the mapping of exam results and subject choice with kinesthetic, visual and auditory based learning approaches suggested a framework to integrate disciplinary knowledge. An extra-curricular disciplinary integration that helped bridge diverse subject understandings was suggested towards holistic pedagogical design and implementation of the set syllabi.

The syllabus took into account social backgrounds of students and teachers, cultural wisdom of families passed down lineages, and the educational board requirements alongside organizational envisioning and learning model upscaling.

Environmental Science, Performance Arts, and Civic Sense as a part of the Sciences and Humanities integration programme at grades 8 through 12 was best suited to incorporate learnings across disciplines of natural and social sciences, languages and numeracy. Ecological awareness, expression of thought and emotion, and societal integration were the core tenets of this course module, towards proactive and responsible citizenship.

The curricular framework is nestled below in tabular form and its execution is explained for any other tribal school to follow. The modular learning strategy fixates children as central to the educational experience, and accommodates teacher preferences in an unbiased manner.

<b>Thematic Area of Focus</b>	<b>Scope of Subject / Discipline</b>	<b>Skills Addressed / Modalities Covered</b>
<b>SOCIAL / CULTURAL</b>	<ul style="list-style-type: none"> <li>● Social - studies as a bridge to explore one's familial past and role in society</li> <li>● History as a means of anchoring in traditional wisdom</li> <li>● Geography as a mode of understanding one's positionality / placing in terms of availing resource access and effective use</li> <li>● Civics sense to rationalize duty / responsibility and right in conserving and managing resources</li> </ul>	<ul style="list-style-type: none"> <li>● Socializing via role plays and theater Narrative building exercises towards essay writing Historical analysis of ancestral folklore Story-telling strengthening emotive use of language and expression Geographical sense of space and mapping of resources</li> <li>● Spatio-temporal analysis of trends in access to / availability of - resources</li> </ul>
<b>ENVIRONMENTAL/ ECOLOGICAL / NATURAL</b>	<ul style="list-style-type: none"> <li>● Pure sciences bridging need for effective resource utilization strategies</li> <li>● Principles in Physics pertaining to water harvesting, land-use linked to climate and weather</li> <li>● Chemistry of industrialized farming as against organic / rainfed agriculture using local bio-geo-climatic conditions</li> <li>● Biology of sustainable practices and conservation efforts linked to ecosystem services and NTFP usage</li> </ul>	<ul style="list-style-type: none"> <li>● Renewable resources and biogeochemical cycles</li> <li>● The nature of principles of Nature Earth-centric design and innovative practices</li> <li>● Gobar-gas as case-study Bio-farming techniques</li> <li>● Ecological principles and functioning Model-making and science-exhibits Indigenous knowledge specific projects</li> </ul>
<b>LIVELIHOODS SUSTENANCE LINKED</b>	<ul style="list-style-type: none"> <li>● Skill-driven hands-on training in aspects of traditional means of earning / living, in alignment with sustainability in</li> <li>● resource-use and conserving forest landscapes</li> </ul>	<ul style="list-style-type: none"> <li>● Math and computer skills alongside presentation / reporting Sustainable livelihoods framework contextual to tribes</li> </ul>

<b>MIGRATION DISTRESS &amp; VULNERABILITY RELATED</b>	<ul style="list-style-type: none"> <li>● Equipping via handicraft and cultural expression - a mitigation to migrating, building resilience in living in the jungle. e.g. Ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>● Informed choice in aspiring towards rural / urban lifestyles</li> <li>● Building capabilities within forested zones to ensure use-rights are reclaimed</li> </ul>
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### **Ecological Sensitivity**

Environmental awareness is ingrained in tribal families. Living in close proximity with nature, they share a therapeutic bond that essentiate sustainability and survival instincts. Tapping into this cultural knowledge reveals depths of ancestral wisdom that situate tribal children in a harmonized relationship with natural resources. This sub-module develops their sensitive attitude towards their immediate surroundings, and roots them in sustainable infrastructure and means of living.

- 1. Nature capture**
- 2. Nature art**
- 3. Nature essays and poems**
- 4. Floral and faunal biodiversity**
- 5. Pollution and resource depletion / scarcity**
- 6. Folklore and local ecologies**
- 7. Cause to Impact studies**
- 8. Mitigation versus adaptation strategies**
- 9. Problem solving rationale**
- 10. Case studies, documentaries and film / book reviews**
- 11. Conservation versus protection / preservation strategies**
- 12. Debates and discussions on ecotourism, resource-use rights etc**
- 13. Stakeholder dialogues and policy drafting processes**

## **Artistic Expression**

Emotional intelligence could be nurtured by ways of performing arts, painting and sculpting. Grounding kids from aboriginal families in their cultural arts paves the way to be recognised, as well as take pride in their healthy sense of societal identity, vouching for visibility, engagement with the outer society and inclusiveness. Theater, folklore and traditional dance-forms offer a potential to revive cultural expression amidst marginalized communities.

- 1. Art as Therapy**
- 2. Music, Mandala and Meditation**
- 3. Clay Work (including sculpting)**
- 4. Art History**
- 5. Performance Arts (vocals, dance and street-plays)**
- 6. Embroidery**
- 7. Wood Work and Mechanical Engineering**
- 8. Automobile / Electrical and Electronic Workshops**

Arts as a medium offers vocational and therapeutic training of young minds towards creating a positive output from imaginative design, of a finished-good having a use-value or aesthetic sense. Explorative service to the larger public, in critically examining the purpose of the completed item - serves as a form of cultural expression in building community identity. A historical analysis of the existence of culturally associated arts and crafts across regional to international levels creates opportunities for the marginalized to reclaim status and inherent rights in greater public discourses and forums of cultural exhibits and celebrations. Arts also serves as an enterprising opportunity for the youth to form and run organizations that market and exhibit folk craftsmanship.

## **Civic Sensibility**

Citizenship and responsibility offer an opportunity for students of indigenous backgrounds, necessitating inclusive governance and democratic plurality. Inducting them to the whereabouts of the state and the nation, builds a pathway for representing minorities in larger society. It also serves as a model for proactive and participative involvement of stakeholders in policy decisions.

- 1. Concept of Aboriginal Identity**
- 2. Indigenous Rights and Privileges**
- 3. Tribal Wisdom and Ancestral Knowledge**
- 4. Diversity and Inclusion**
- 5. Defining what constitutes Tribes**
- 6. Origin of Native Folklore and current relevance**
- 7. Traditional Practices and present-day significance**
- 8. Societal exclusion and marginalization**
- 9. Minorities and recognition / visibility**
- 10. Youth Mobilization and Activism**
- 11. Eco-Tourism and Handicrafts**
- 12. Role of NGOs in acknowledging Adivasis**

**Table 2: Learning modalities and objectives at Higher grades (VVSS school)**

Learning Content	Modes of Engagement	Objectives of Session
Environmental:	<p>Nature walks and photography            Nature drawing and painting            Nature writing and poetry            Exploring biodiversity of flora and fauna, and its decline            Documenting pollution and resource depletion / scarcity            Analyzing folklore on local ecologies cause to Impact studies            Mitigation versus adaptation strategies            Best possible solution rationale case studies, documentaries and film / book reviews            Conservation versus protection / preservation strategies            Debates and discussions on ecotourism, resource-use rights etc            Stakeholder dialogues and policy drafting</p>	<p>To sensitize tribal students with their ecology and to help them learn and value the laws of nature stemming from cultural roots via oral histories, this module engages the kids in regaining identity with aboriginal wisdom.            It equips the community in being inclusive in stakeholder decisions around resource management that promotes participation in sustainable living.            The module also attempts to address human-wildlife conflict and helps indigenous folks to reclaim their use-rights over forest lands.            Lastly, it positions the state to include eco-tourism in policy recommendations that revalidate tribal efforts in conserving species and habitats.</p>
Arts-based:	<p><b>Art Therapy</b> - sketching and painting on varied surfaces: wall murals, glass and fabric  <b>Mandala and Music Meditation</b> - coloring, painting and creating rangoli patterns  <b>Clay Therapy</b> - sculpting and pottery  <b>Art Theory</b> - analysis through a historical lens of art  <b>Performance Arts</b> - theater, vocals and dance-forms  <b>Embroidery</b> - knitting, block-prints, stitching, dyeing and weaving</p>	<p>The module on art as a medium of cultural expression serves as a revalidation of one's roots and an opportunity to heal from the traumas of marginalization, migration and resettlement.            Minorities have been denied rights, isolated from basic amenities and services, and are misrepresented in larger society.            This therapeutic form of building identity helps anchor fragmented clans in a united supportive framework of participative governance and economic growth.</p>

	<p><b>Carpentry / Metalworks</b> - polishing / plating, filing, chiseling, sawing and nailing / welding</p> <p><b>Industrial / Automotive</b> - fabrication, assembly and fuel / engine designs</p>	<p>In the face of rural development, urban and industrial expansion - their exploitive use in labor must be stopped.</p> <p>Entrepreneurship and dignity in labor, alongside vocational training offers financial and social security to them.</p>
Socio-cultural:	<p>Concept of Aboriginal Identity  Indigenous Rights and Privileges  Tribal Wisdom and Ancestral Knowledge  Diversity and Inclusion  Defining what constitutes Tribes  Origin of Native Folklore and current relevance  Traditional Practices and present-day significance  Societal exclusion and marginalization  Minorities and recognition / visibility  Youth Mobilization and Activism  Eco-Tourism and Handicrafts  Role of NGOs in acknowledging Adivasis</p>	<p>This module extends the social role that tribes play in safeguarding their environs, in being one with nature's principles, and in practicing sustainable living.</p> <p>It anchors the youth in taking steps towards reclaiming lost identity and rights, by balancing aspirations of migration with cultural and biogeographic preservation of their homelands.</p> <p>It empowers teenagers to reflect on their contributions to legalizing collective societal ownership and co-management of land and resources, with ancestral knowledge as the basis for continued existence in the face of threats like displacement and rehabilitation.</p>

Numeracy and Linguistics was considered essential apart from the subjects that cover arithmetic, algebra and geometry under Mathematics, or English, Hindi / Tamil as first, second and third languages. Logical reasoning and Verbal dialogue were given emphasis in relating to daily transactions and measurements, and to build constructive and critical arguments in comprehension and discourses around communication. The modules on linguistics and numeracy had to be scaled down to the kindergarten, pre-primary (pre-PYP) and primary-year (PYP) programmes of the school to cover basic concept and skill building at lower grades.

This component had to also be contextualized for a peri-urban school in

Bangalore - having a migrant demography of mixed cultures across India. The curriculum for number skills and languages was designed based on the cultural geography of the mixed-age-group cohort of Little Buddha Gurukula Academy (LBGA) - Rampura, B'lore North.

**Table 3: Learning objectives and modes at Lower Grades (LBGA - peri-urban school)**

<b>Learning Content</b>	<b>Modes of Engagement</b>	<b>Objectives of Session</b>
<ul style="list-style-type: none"> <li>• Math-logic:</li> </ul>	Numeracy of forested landscapes Number-sense in tribal hamlets Counting seasons and lunar calendars Trade and assets shared in non-monetary forms Collective measures of length, area, weight and volume	This learning module builds on concepts learnt through mathematics in the practical aspects of daily trade and measures. It enables students to have numerical rationale around the ways of life external to their home environs.
<ul style="list-style-type: none"> <li>• Languages:</li> </ul>	Merging tribal linguistics Gaining visibility amidst regional language use Documenting indigenous script, oral histories and folklore Finding commonalities amongst mainstream and aboriginal etymologies Linking adivasi dialects with geo-cultural roots of origin	The multilingual module equips students in clearly communicating their needs and points of view with the external society of castes - both major and minor. It vouches for tribal inclusion and a sense of cultural identity, also preserving traditional folklore and indigenous wisdom passed down generations.

**Grade-wise staggering and scaling of designed content:**

It was essential to map-out the basics and level upwards across the three macro-disciplines identified above. Curricular mapping was performed in consultation with subject-teachers and the draft was sent to the board members and school authorities to examine the relevance of activity-based holistic schooling for the students in an all-inclusive tribal learning center. The educational resources locally available were made

use of to tie together a syllabus that is inclusive of the learning needs of the marginal populace.

**Table 4: Staggered concepts across grades and disciplines (VVSSS)**

Disciplines	8th Grade	9th Grade	10th Grade
Natural Sciences	<p><b>Physics (applied to Geography)</b>            Atmospheric processes that connect to geography of weather and climate Directionality, Time Zones and Distances            Latitude - Longitude Coordinate System            -----</p> <p><b>Chemistry (linked to bio-geo-chem cycles and bio-chem of life)</b>            Carbon, Nitrogen and Calcium cycles Sequestration and Global Warming            Eutrophication and inorg. Fertilizers            Shells, Corals and Molluscs            -----</p> <p><b>Biology (extending into Geology / earth science and biogeography)</b> Niche, Biome and Species Diversity            Food chains and co-dependencies amidst ecological services            Floral and Faunal symbiotic relations and ecosystem imbalance Impact of</p>	<p><b>Physics</b>            Climate change and physics of solar radiation, melting glaciers and sea level rise            Volumetric and Area calculations of trapped heat and water flows vs. stocks            -----</p> <p><b>Chemistry</b>            Alternate agriculture using permaculture            Soil chemistry and life/health Chemical based drugs and alternative medicine            Naturopathy as a livelihood - skills involved            -----</p> <p><b>Biology (extending to social history of conservation)</b>            Human intervention and impacts of ecosystem dis-service on biodiversity            Habitat fragmentation and role of humans in forest encroachment Ecological inter-</p>	<p><b>Physics</b>            Solutions of water harvesting and diverting rivers, afforesting deserts            Impacts of dams and hydroelectricity            Mechanism of solar and wind power as cleaner alternatives            -----</p> <p><b>Chemistry</b>            Water and food based links to contamination, preservation, enzymatic reactions and protein deformations            The choice for organic food and unprocessed farm produce. The era of natural farming, biological farm input, reduced food toxicity and decentralized pharma and food-source markets            -----</p> <p><b>Biology</b>            The ecological design principles involved in organic farming or setting up sustainable spaces            Links to natural remedies and solutions of the problems of the urban society</p>

	<p>deforestation on land use versus developmental agenda of maximizing resource utilization</p> <p>The case of population rise, modernisation and forested landscapes as eco-tourism spots</p>	<p>relatedness and causes of self-regulative failure</p> <p>Feedback mechanism and systemic processes of environmental preservation</p>	
Social Sciences	<p><b>History</b></p> <p>Extending biological concepts to solve issues concerning societal digress from environmental / eco-consciousness</p> <p>Case studies of historical lessons in managing forests by communities vs. govt.</p> <p>-----</p> <p><b>Geography (extension of Physics)</b></p> <p>Terrain, altitude above mean sea level and impacts of Global Warming, Climate Change etc.</p> <p>Pollution and its effects on Air, Water and Soil</p> <p>Causes of Resource Depletion, Forest cover and Biodiversity loss, and Habitat Degradation</p> <p>-----</p> <p><b>Civics</b></p> <p>Duties and responsibilities in collective land ownership and framing</p>	<p><b>History</b></p> <p>Listing social problems to biodiversity protection and community conservation of resources and forest lands</p> <p>-----</p> <p><b>Geography</b></p> <p>Understanding bio-geographies around the world and climatic zones deciding vegetation types</p> <p>Deciphering connects with lifeforms and their dependencies on earth processes and natural cycles</p> <p>-----</p> <p><b>Civics</b></p> <p>The effectiveness of community based conservation, a critique against state-led protection and preservation measures</p> <p>Stakeholder engagements and</p>	<p><b>History</b></p> <p>Deciding the best possible outcome to contextual problems regarding socio-ecology</p> <p>Basing solution choice on case studies specific to systemic and temporal analysis of tried-and-tested resolutions</p> <p>-----</p> <p><b>Geography</b></p> <p>Geo-politics of state-imposed borders, national territories and the concept of an unbound nature</p> <p>Geographies of culture, identity and citizenship</p> <p>Anthropo-centric determinants of boundaries and ownership</p> <p>-----</p> <p><b>Civics</b></p> <p>Plausible study of co-owned, co-managed communes that include marginal voices</p>

	resource use strategies Community rights over indigenous knowledge, resources and ancestral land	collective choice, who gets how much of a say	
Artisan Skills	<p><b>Art Theory</b> - analysis through a historical lens of art</p> <p><b>Performance Arts</b> - theater, vocals and dance-forms</p> <p>A discourse on drama. Book reads, movie clubs and discussions - read-aloud poetry etc -----</p> <p><b>Practice</b></p> <p><b>Embroidery</b> - knitting, block-prints, stitching, dyeing and weaving <b>Carpentry / Metalworks</b> - polishing / plating, filing, chiseling, sawing and nailing / welding</p> <p><b>Industrial / Automotive</b> - fabrication, assembly and fuel / engine designs</p> <p><b>Art Therapy</b> - sketching and painting on varied surfaces: wall murals, glass and fabric</p> <p><b>Mandala and Music Meditation</b> - coloring, painting and creating rangoli patterns</p> <p><b>Clay Therapy</b> - sculpting and pottery</p>	<p><b>Theory</b></p> <p>Diving deep into the philosophy of forms of non-purposive and purposive art -----</p> <p><b>Practice</b></p> <p>Linking art and craft to livelihoods, evaluating ecotourism as a business idea -----</p> <p><b>Therapy</b></p> <p>Artistic expression to build a healthy sense of tribal identity Explorative performance arts as a means of cultural expression and reflection</p>	<p><b>Theory</b></p> <p>Personal portfolios, installations and documentation of the process -----</p> <p><b>Practice</b></p> <p>Assessing and facilitating the tangible feasibility of the sale of indigenous handicrafts -----</p> <p><b>Therapy</b></p> <p>Channeling restorative identities towards cultural exchange and merging of cultures across geographies</p>

While the higher grades of the tribal school adopted the curricular design mentioned above in the respective disciplines, it was more relevant for the semi-urban school to use a downscaled version of pedagogical approach to build on language and number skills for Kindergarten, Pre-PYP and PYP.

**Table 5: Numeracy and Linguistics for a peri-urban school at lower grade levels (LGBA)**

Concepts / skills addressed	Kindergarten	Pre-primary program	PYP
<p>Numeracy of forested landscapes            Number-sense in tribal hamlets            Counting seasons and lunar calendars            Trade and assets shared in non-monetary forms            Collective measures of length, area, weight and volume</p>	<p><b>Arithmetic</b>            Number count - leaves and seeds Student height and weight markings / measures            -----  <b>Algebra</b>            Days of the week, relation to days of the month and days of the year            -----  <b>Geometry</b>            Phases of the moon, outlining of shape drawings and coloring / painting Seed sticking, leaf print painting and use of vegetable patterns in crafts linked to estimation of their measures</p>	<p><b>Arithmetic</b>            Counting saplings, gardening spacing and measures of tree shade via mud tracing            -----  <b>Algebra</b>            Comparative age group categorization of height and weight measures of students            -----  <b>Geometry</b>            Dot sketching of moon phases, tracing and pencil shading, shadows of the earth on the moon Charcoal sketching, rangoli mandalas themed with lunar calendar</p>	<p><b>Arithmetic</b>            Linking farming skills to days taken for harvest of produce, after sowing grains, sprouts or vegetables            -----  <b>Algebra</b>            Greeting cards, measures and sizing self-designed cards, linked to art and craft            -----  <b>Geometry</b>            Gift box volume, gift weight, sizing the cuboid Selecting cartons for the gift size and wrapping paper estimates</p>

<p>Merging linguistics tribal</p> <p>Gaining visibility amidst regional language use</p> <p>Documenting indigenous script, oral histories and folklore</p> <p>Finding commonalities amongst mainstream and aboriginal etymologies</p> <p>Linking adivasi dialects with geo-cultural roots of origin</p>	<p><b>English / Hindi</b> Nursery rhymes, poems and stories that contextualize rural India</p> <p>-----</p> <p><b>Tamil / Malayalam / Telugu / Kannada</b> Oral folklores of grandparents in native place of students</p> <p>-----</p> <p><b>Tribal and North / East / West - Regional</b> Merging cultural beliefs by drawing similarities with tribals elsewhere in India and other nations, by making charts of one word in many languages and multiple meanings</p>	<p><b>English / Hindi</b> Rhyming words, homophones - vocal practice</p> <p>-----</p> <p><b>Tamil / Malayalam / Telugu / Kannada</b> Folktales narrated in the regional dialects with body-language and facial expression</p> <p>-----</p> <p><b>Tribal and North / East / West - Regional</b> Word meanings across all dialects specific to the cultural cohort Sentence structure and formative pronunciation skills without diluting on word stressing</p>	<p><b>English / Hindi</b> Writing and spelling of similar sounding words</p> <p>-----</p> <p><b>Tamil / Malayalam / Telugu / Kannada</b> Skit / Drama in making kids perform plays in native language on stage</p> <p>-----</p> <p><b>Tribal and North / East / West - Regional)</b> Retaining regional accents and scripts that may be partially borrowed across state boundaries Commonalities across state dialects and emergence of new scripts via interpreting ancient scriptures</p>
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The emphasis of the module on linguistics are as follows:

- Cross-cultural dialogue
- Western and North Languages
- Mother-tongue and Regional scripts
- Barriers to conversing in mixed-culture cohorts
- Sign-language, emotional expression and empathy building
- Sensitivity to diverse / plural dialects
- Art and Performance in communication

## Student profiling

With a teacher strength of 5 teaching and 2 support staff, the Pre-KG to 3rd grade student ratios are distributed as below:

Grade	Boys	Girls
Pre Nursery	2	9
Lower Kindergarten (KG)	10	6
Upper KG	5	6
1	1	1
2	1	1
3	1	2

The teachers names and qualifications are as below:

- Divya (BA - Kan, Pol.Sc.)
- Chaitra (BSc - PCM)
- Mamimegale (BA - Eco)
- Sneha (BBA)
- Suma (BA - Kan)

It was noted that students from rural India whose parents have migrated to semi-urban B'lore around Rampura village, who can't afford the fee of a mainstream school, admit their kids into the play-home setup that Chandrakanth Sir has established in collaboration with Sri Vani Public School in the same area.

The support received by children of migrant labor families assures no gap year in their academics, as they seek affordable seats at a later grade into recognized schools of the Karnataka State Educational Board. The plan for this play-school was to integrate vulnerable poor and marginalized students hailing from other states who have a gap in education, to be bridged into the flow of schooling in a new state environment without lagging behind in grade-wise conceptual prerequisites.

Since the school strength in total across Pre-Nursery to 3rd standard is quite low, a mixed-age-group (MAG) method of pedagogical engagement was suggested with a holistic and integrative approach to curriculum design. A special emphasis was on visual arts, drama and skit so as to celebrate cultural events as a schooling community and build on hands-on activities besides basic knowledge and skills across subjects and ages.

Craftwork, nature walks, gardening, environmental studies and non-competitive local sports were implemented to bring in a traditional aspect to learning via folk songs, rural handicrafts, folk dance, and nutrition-based food festivals. Harvest festivities and oral histories from their birth villages were incorporated into the schooling process to foster cultural exchange and harmonious relations.

**Assessments:**

A cumulative assessment per week per term was incorporated into the reports, with a qualitative description of performance based on individual student capacity. The scores were subjective and scaled based on earlier scoring and progressive improvements in each subject.

An example of a term report exemplifies the need for quality based evaluation of accomplishment in every baseline concept gathered and advanced skill applied. Taking gardening as an example, the guidelines and instructions for task completion were developed and executed, following which the rubric for assessing student involvement was filled.

<b>Child progress</b>	<b>Beginner remarks</b>	<b>Advanced remarks</b>
<b>Able to pot the soil mix</b>	Is learning kinesthetic skills	
<b>Shows hand-eye cord in sowing seeds</b>		Has a keen eye and focus on minute details and tasks
<b>Is patient in observing sprouting</b>	Is very impatient and asks many constructive questions	
<b>Is nurturing in daily watering</b>		Reminds themselves to daily water the pot at the lunch break time
<b>Is able to see the joy in harvests</b>	Is unable to cope with the drying up of their own plant	

<b>Shares and celebrates with cohort</b>		Is able to find joy in their best friend's plant flowering
<b>Saves seeds for next cycle</b>	Is able to plan for the friend to reap greater rewards	
<b>Attempts resowing</b>		Takes additional care and learns through earlier mistakes
<b>Master at gardening</b>	Is able to accomplish fruiting in second attempt	

The reports for all students were made in a similar manner incorporating task success status and enabling positivity through the use of language that fosters collaborative and non-competing learning.

**Qualitative progress summary (example):**

- The student engaged in playing with the potting mixture provided after a bit of hesitancy regarding cleanliness. The soil spilt over the brim of the pot and a messy work environment was maintained.
- Handpicking of single seeds was an easy task while the student plowed a hole with care and dabbed the seed into the layer below. Minute detailing skills observed.
- The student asks important questions on how and why and is eager for the plant to sprout before time. An excitement is shared with other disinterested students, making the child an optimist and a motivator.
- The child isn't aware of instructions shared earlier and overflows the pot each day. This is an acceptable trait of nurturing, given the age.
- After being sick for a week the kid returns to see a dried sapling that managed to grow and perished in the sun's heat. The kid cries the whole day, hinting at sensitivity and empathy being the major traits.
- When the kid's best friend shares the flower of their plant, they both nurture the single pot for the next week and enjoy seeing the formation of fruit and seed.
- The child asks if they could re sow the seed and enjoys learning the entire process again.

## Appendix: 8 Fashion and Fabric Mela

### - Vidya Vanam Senior Secondary School

The thematic annual celebration for the academic year 2022-23 was focused around embroidery and textiles as an elective offered at the senior high level for developing vocational training skills for the students from marginalized backgrounds. The school community brought together basic to advanced understanding of the fashion sector and industry of fabrics, across geographies, climates and markets of trading clothes wear.

From religious differences in attire to mechanization in sourcing raw materials from the farm, the advancements in biotechnology of cotton as a cash crop were also discussed.



Fig 1: Attires across faiths



Fig 2: Integrating automobile studies with agriculture under the theme of fabric and clothing

The relevance of choosing natural substitutes over synthetic material were discussed under various occupational hazards and employee comforts during heavy workloads.



Fig 3: Applying understanding of uniforms in the school kitchen

The diversity of cotton to silk weaving across the southern states were linked to sericulture and its impact on evolution of silk moths were discussed with regards to ecological repercussions of extensive silk trade.



Fig 4: Types of saree material available in the local regions

Artisan skills such as block printing using natural dyes and nature prints were showcased to create an environmental aesthetic to change customer preferences.

The central installation composed of natural fiber and its use in displaying harmonious relations with nature while opting for sustainable clothing as conscious consumers.



Fig 5: Artisan skills in the handloom sector Fig 6: An installation with rope and floral fabric depicting sustainability

The need for recycling torn clothes, altering them into bags, pillow cases and kitchen towels etc. were discussed. Patchwork as an upcycling skill was demonstrated in making quilts, blankets and shawls.

The impact of synthetic polyester mix in the fabric sector on the environment was highlighted, discussing bioaccumulation of microplastic in soil biomes and oceanic life.



Fig 7: Signifying the need for upcycling clothing towards sustainable practices

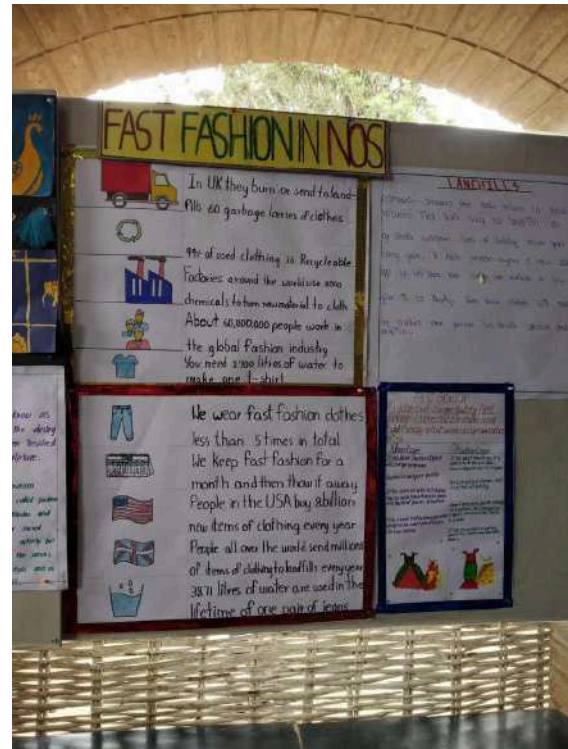


Fig 8: Impact of Fast-fashion fabric on the environment

Costumes in ethnic wear, marriage ceremonies and clothing of various occupations including sports, police, medical and school were portrayed as charts and models.

Excessive wastewater generation in dyeing of textiles and the use of chemical detergents in washing were highlighted, alongside harmful effects of biomagnification of microfiber across food chains.



Fig 9: Traditional local attires during weddings in the region



Fig 10: The impact of textile industry on ecology and environment

Historical import of textiles into Kanchipuram was displayed as a unit of social sciences connecting the significance of trade routes and inter-state relations.



Fig 11: Display of silk derived clothing across regions

Sericulture and its value in trade relations was discussed, keeping political and cultural symbolism associated with owning silk fabric as a class distinction amidst the locals. It was also highlighted that such sectors depend on mulberry farming and may impact the local flora and fauna considerably.



Fig 12: Impact of farming on soil erosion as a model

The connection of mulberry or cotton farms with non-seasonal erosion of top-soil and nutrient leaching while using chemical pesticides were discussed. Groundwater contamination and ecological change was also highlighted with monoculture cash crops that may be fertilizer intensive, impacting local food produce.

The elective - food production, was linked to the mela by incorporating the use of comfort wear during cooking in high heat environments to reduce occupational hazards, and ensure food quality preventing contamination.

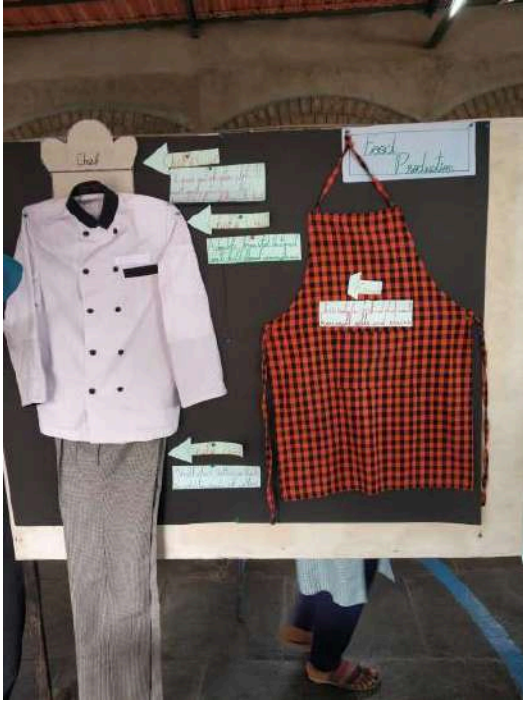


Fig 13: Attires in the food industry, linking learnings to food processing / production



Fig 14: The history of Jeans and the future of shoes in the fabric industry

A zoom shoe model discussing miles walked, access to internet zones and making work from home more active - was suggested by a middle school student. In the backdrop was the history of jeans production and its customer preference evolved over time.

The comparative strength of spun yarn of varied plant-based vs. animal-derived fiber was connected to physics of use in various circumstances, understanding wear and tear, weight load, durability and skin comfort. Plausible animal ethics alternatives such as jute or hemp were discussed alongside genetic modification of cotton and impacts of synthetic fiber on skin and the environment.



Fig 15: The strength of loomed wool fiber vs. plant derived choir substitutes

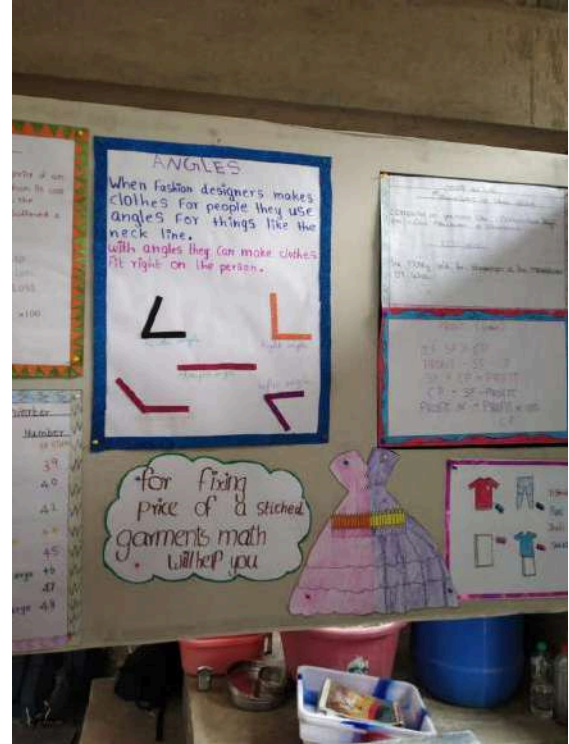


Fig 16: Stitching and Tailoring skills linked to mathematics of measurements

The use of arithmetic and geometry in vocational training was highlighted in this section of the display, signifying that basic concepts of mathematics are applied in fashion design courses, and relevant in such occupations.



Fig 17: Evolution of the use of fabric across civilizations

A historical review of garments and fabric was displayed in a section of the exhibition, offering lessons learnt in the evolution of the fabric sector.

Market trend analysis, profits and offers, were applied to the garments industry in the sales department, offering insights into relevance of margins and MRP estimation.



Fig 18: Pricing, sales and discounts in the fashion sector



Fig 19: Leaf prints and the use of natural dyes in fabric dyeing

A workshop on the use of naturally derived dye substitutes, with the importance of indigo plant trade during British rule, were discussed. The impacts of synthetic dyes upon skin and environment were highlighted.



Fig 20: A student displaying the revolution of technology shoes as a part of fashion and fitness

The display of the working mechanism of Zoom shoes was a success point in futuristic thinking of students. The health check regarding miles walked, and the information on maximum network receptivity proved beneficial as a design concept during the post pandemic era of work from home.



Fig 21: The spin-wheel symbolizing the Gandhian 'charkha' and local weaving

Mahatma Gandhi's efforts in grow local, consume local - symbolically marks the prominence of the Indian Charkha in handlooms across state borders. This was displayed to pay respect to the Indigo and Cotton movements steered during the pre-independence era of British rule in India.



Fig 22: The use of fabric across seasons depicted as a model

The relevance of wool and cotton in the Indian weather system was discussed through climatic variations across geographies. It was also contextualized to the sub-humid monsoons in Coimbatore.



Fig 23: The use of measures in the fashion and fabric sector



## Teacher Vulnerability and Wellbeing through Art-Therapeutics

It is important for teachers' wellness to be focused upon in order to be able to transcend a healthy learning space for children. Teachers need to introspect on their inner marginalized experiences to resolve any vulnerability within. Only then can they truly acknowledge and work beyond the vulnerabilities of kids from minority groups like SCs and STs.

Group therapeutics offer vision-building exercises so that teachers practice nonviolent communication. Teachers undergo personal development workshops to resolve any discord amidst colleagues and tangentially align with the true purpose of education. Creating a safe space for being true to one's feelings offers adults to own their past childhood and to be aware of patterns that project an unresolved inner child in adult behavior.

Adults who are conscious of their own apprehensions in their upbringing make responsive and empathetic teachers who are able to steer a healthy child development pathway for the kids they interact with. Thus, it is of even more significance that the mental health of teachers is taken into consideration while promoting inclusive learning for marginalized societal groups.

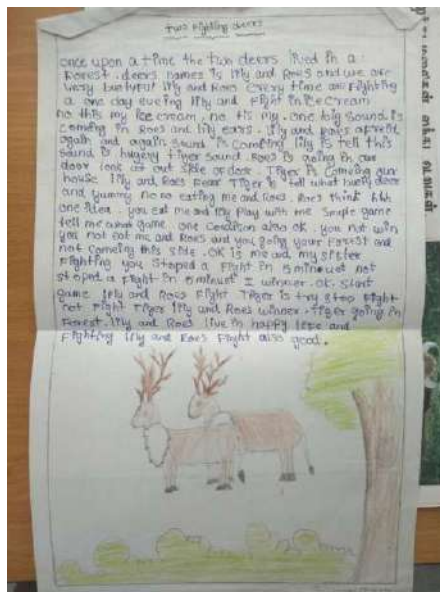


Fig. 38: An assignment of a kid depicting lessons from nature

## **Appendix: 9 Case 1: Individual Counseling**

### ***A monologue between Art History and Social Studies on the roof of the teacher's quarters***

**Case Synopsis:** The teacher (male, 29) suffers from excessive alcohol intake, a stressed work environment and bouts of depression that question the existence of the self, with a critical mother-figure projecting failure of expectations onto her son.

- Counselor's Understanding

The client is musically inclined and reaches a trance state of bliss while surrounded by the musical vibes of self-made stringed instruments. The patient has an aggressive tendency with mild bipolar disorder symptoms, acting in unpredictable theatrics at times. The individual faces trust issues and seldom reveals the discomfort of the mind to friends and colleagues. The person also suffers from withdrawal symptoms of Marijuana intake, yet copes with the same using nicotine.

- Structuring Sessions

Initial sessions involved building trust by sharing one's own struggles in life, one's spiritual path to enlightenment and one's belief in an irreligious supra-existence. The following meetups involved expression of the nondominant creative streak through music and painting, through immersion in dialogues around artistic expression and divinity, of seeking a guru and finding purpose through meditation.

- Treatment Phases

These included shifting gradually from alcohol and drug abuse to caffeine and smoking milder cigarettes. The other aspects included trusting the healer / counsellor through the sessions and follow-ups regarding sleeping and eating patterns. The patient suffers from acidity as skipping meals is habitually substituted by intake of spirits. Final stages include dedicating time for walks as the client is slightly obese and lethargy sets in easily while the client contemplates going for long nature walks.

- Materials Used

Art canvases such as fabric, boards and walls for mural paintings. Paints and brushes, water-colors, acrylic, oil-based etc.

Wood, string and hollow gourds to make musical instruments.

Carpentry tools for the finishing and tuning, varnish for the aesthetics of the stringed instrument.

- Desired Results

Allowing for artistic expression via music and drawing, the client builds a narrative to restore a healthy sense of identity.

Scarred emotions due to an unhealthy relationship with the mother are healed by journaling and exploring the expression of grief via singing.

Dominant maternal expectations from the son in his escapist attitude get subdued with the mom-figure understanding the plight of her child.

A restored healthy boundary in relationship with the client's mum ensures a transformation of a failed identity complexity to a successful and proud plus healthy competency of the patient in his choice for independence.

- Client Homework

Dialoguing with the mother to make her aware of what the individual is going through. Finding time for artistic exploration in the form of music and painting.

Scheduling meals and daily walks to overcome acidity and lethargy

Seeking help in times of depression by engaging with colleagues and slowly weaning out of substance abuse.

- Future Scope

The teacher has a tremendous potential to engage with children through theatre and to cure the self of childhood trauma.

The client is a mirror reflection of what the internal struggles are. For e.g. the client may be queer but projects a homophobic attitude in ridiculing a colleague, the client is body shaming others because of inacceptance of one's own weight.

#### Rapport:

- This exercise was the toughest to build as the patient rarely opened core wounds of traumatic pasts.
- The patient hid behind a veil of intellectualization and spirituality.

#### Ego Strengthening:

- The client had a superiority complex masking a feeling of failure and inferiority.
- The ego was intact, but very unhealthy inward - projecting ridicule to hide one's own insecurity.

#### Counselee Needs:

- Brisk walks, an active life. A shift from the dingy room environment that bears a risk of Schizophrenia setting-in.
- Daily routine scheduling, watching the diet and controlling the urge of junk food.
- Interacting more with the community, involving oneself in projects of passion.

#### Session Goals:

- Enabling a healthy sense of ego development with positive reinforcement aligned with hobbies.
- Expression of anger with mother through journaling one's rage of being controlled and critiqued.
- Walking to uncover breath and stamina as symptoms of obesity.
- Conscious intention making to reduce the consumption of alcohol and narcotics.

### Case Overview:

- The patient is indulgent in drug and rum abuse due to a sense of a failed son, a misfit in society, and a wanderer with a dissolving sense of home.
- The client has a strong ego-identity with a creative streak, yet unable to channelize that into the daily chores at work, although well-read and capable of steering the Art History department.
- The individual seeks a counter-argument for the sake of fun, without being compassionate and strongly defends one's point of view with weak defence on facts.
- The person lacks empathy in building relations out of mockery and sarcasm, and projects scars onto others as perpetrators of self-inflicting misery and being misunderstood.

### Psychopathology Name:

- Borderline bipolar / schizophrenia
- Failure complexity and inferiority
- Addiction to narcotics and alcohol
- Inner-child scars of an overly critical parent



*Fig. 39: The concept of Freedom explored by children as a part of Social Sciences*

## *Case 2: Group Therapy*

### *The Physics, Biology and Linguistics of Mental Health in a classroom environment*

**Case Synopsis:** This mode of intervention worked for three teachers who are reluctant to have individual sessions, in fear of being judged and labelled individually as psychologically ill. Names have been changed to respect confidentiality of clientail details. Jaya (25), Rehmath (43) and Selvy (45) are women who teach Physics, English and Biology for middle to senior school. They complement each other and make a robust team that caters to specific needs of children.

Selvy has been with the school for over five years and is interested in farming and food. She is married and stays in the neighboring village, while her husband works for the school as a lab instructor. Rehmath has lost her husband and has a son studying in another town. She recently joined the school and heads the English department as a primary language and medium of instruction across the higher grades. Jaya is completing her B.Ed. and has passionately been teaching physics for almost two years now.

While Rehmath stutters and stammers, she lacks oratory confidence which is essential in communicative subjects as an instructor of English. She has been through the trauma of loss of a loved one and a rigid convent teaching experience with no flexibility and freedom bestowed onto her in the past. She struggles to hold the class decor and doubts her own capacity to teach. While this new work environment offers autonomy, she is always feeling inadequate in her competency as a teacher. She feels stretched and stressed and is a workaholic in the making, keeping herself occupied with tasks even after school hours and on Sundays. Her meticulous planning and notebook correction consume her through the week, giving her very little time to socialize. She is a reserved personality who judges the intent of people before sharing any information.

Jaya on the contrary suffers from somatoform induced by work pressure and a constant struggle of 'I am not enough'. Her perfectionism extends to obsessive compulsive disorder where she repeatedly ponders on planning and invests a considerable amount of time executing tasks that take less time to complete. She avoids conversing

with strangers and claims to be occupied with chores all the time. She takes time to trust people and is an introvert like Rehmath. She suffers with back and shoulder pain and shows signs of low immunity almost throughout the year. Fever and flu are common symptoms of stress-induced fears around being able to complete tasks on time. She takes many leaves and her OCD guilts her into a failure in being able to be fully present with children. She beats herself up for not being able to give her fullest to the learning of children.

Selvy is a calm and composed woman who is a channel for perseverance and clarity. Although she skips meals and dedicates herself to work, her work-life balance isn't as much a struggle. She holds her presence in the classroom and is receptive to learning new ways. She trusts people and is sociable, critical of her competencies and able to receive feedback without draining herself in overworking.

- Counselor's Understanding

The clients form a cohort of colleagues who share a personal relationship beyond the professional roles they have. The apprehensions of two patients in need of therapy are complemented by a third member who is open to mediating healing for the other two. This bridge enables group work to be a success by addressing individual mental illness without pinpointing one's disorder in particular. This way, shaming and judging are avoided for conscious clients to be vulnerable to the healing process.

- Structuring Sessions

The first meeting included a general getting to know each individual and creating a safe dynamic to build on interpersonal trust. Follow-ups included investing in deeper personality identification by sharing stories of family, growing up, why they chose teaching as a profession etc. The next session was the most challenging, in bringing them all together to express their own fears and hesitancy with life. At the end, they realized the value of group therapy and are practicing it daily with a mentally sound moderator - without the presence of a therapist.

- Treatment Phases

Getting clients to share their feelings around insecurities of how they are perceived, or how they view their own persona, was tough. Since the subjects of study were facing challenges in speaking clearly, muffled voices and swallowed sentences were common in the initial stages. Body language and posture correction needed candidates to take full-portraits of each other to show signs of lacking confidence. Combatting psychosomatic sickness was another hurdle in accomplishing trust and overcoming fear of being misjudged or misunderstood.

- Materials Used

For non-dominant hand scribbling, a notepad and pen were used. For auditory skill enhancement a recorder was used.

For stance correction a mobile camera was used.

To create a safe space to express one's emotions, rituals of consecration with incense and lamp oil were used.

- Desired Results

It was expected that the confidence building exercises would reduce stress-related symptoms like somatoform and stammering. Clarity of speech was ensured by non-dominant journaling of fears and insecurities. The observant presence of the therapy-incharge person allowed for the group to engage in bonding exercises towards depending more on the group for further support.

- Client Homework

Patients were asked to video / audio record their practice in teaching so that body posture correction and voice modulation foster confidence in engaging with kids.

Clients were asked to assess each other's presence of mind while role-playing the classroom environment. This allowed for awareness of behavior and persona in a class setting to be guided by a conscious stance and oratory skill.

- Future Scope

Group therapy offers colleagues a mechanism to share one's discomfort and cope with the challenges of teaching as a profession. Self Help Groups in non-teaching staff could address grievances at work and restore a sense of community bonding through faith restoring in a sense of togetherness and envisioning a collaborative effort towards a cause.

Rapport:

- It was tough to build rapport with married and widowed women. There were apprehensions by the young candidate too. The therapist being male was at a disadvantage in breaking ice initially, but with persistence the vibe of trust and honest expression was restored. Towards the end, the familiarity with one another's life provided empathy in nonviolent communication of personal needs.

Ego Strengthening:

- Their egos were clashing initially as envy of studies and youth, a settled life, and independence creped in. But by the end they valued each other for their unique insights and approaches in forming a constructive team.

Counselee Needs:

- Rehmath needs deep listening while Jaya needs compassionate communication. A common mental wound found in all three was a rebel streak and feminism contrasting strict fathers and brothers.
- It was also found through the sessions that Selvy had the ability to empathetically listen as well as respond sensitively to shared feelings associated with past experiences of the other two candidates.

#### Session Goals:

- To open up one's vulnerable core in emotive expressions of fear, grief, rage etc.
- To transcend feeling stuck into potentials of overcoming anxiety, depression, anger etc.
- To materialize emotional wellness by resolving issues relating to restlessness, sadness, violence etc.

#### Case Overview:

- The cohort of candidates complemented each other in skills related to task completion at work. Selvy gained insights from Jaya on meticulous proofreading and from Rehmath on planning lessons.
- Rehmath was able to voice modulate and pace her oration to an understandable and clear pitch.
- Jaya was healthier post three sessions and acknowledged that psycho somatoform is curable by breathwork and meditation, a yoga routine and watching one's diet plan.

#### Psychopathology Name:

- Rehmath: Inferiority complex, post-traumatic stress disorder and workaholism
- Jaya: Somatoform disorder, work-related stress syndromes and OCD.
- Selvy: undetected psychopathology



*Fig. 40: A sketch by a student on the theme 'wildlife'*

### ***Case 3: Peer-assisted Healing***

#### ***Communicating via the Language of Art and Music in a tea shop every evening***

**Case Synopsis:** Jiju (44) and Praveesh (41) - names changed - are music and art teachers across primary to middle school. Jiju hails from Kerala while Praveesh is originally from West Bengal. Both don't understand Tamil, nor do they follow what each other says in their regional languages.

Jiju is obese and has chosen to skip breakfasts, indulge in black tea and stay away from milk products. Jiju is introverted and his speech isn't clear but has a good command over voice modulation while singing carnatic music in Malayalam. His hand-eye coordination while playing the Mridangam (a percussion instrument in South India) is commendable. He suffers from alcohol withdrawal syndrome and has a lisp while speaking. He is often caught off guard, lost in thoughts and suffers from sudden sleep due to obesity.

Praveesh is single too, highly intuitive and meditative. He can transform a kid's painting into a masterpiece with the right guidance. His artistic skills are exquisite and he dedicates most of his lonely time in ceramic sculpting, woodwork and practicing sketching or painting in his room. He is fond of dogs and communicates with ease to

children even though he doesn't know their language. He has a walking stride disorder and repeats phrases when not confident. He has stage fear and shys away from the limelight.

- Counselor's Understanding

The clients are creative and artistic in audio-visual ways. Both have an active tactile body-kinesthetic to guide them through their profession.

Strengthening confidence in overcoming introverted stage fright may be suggestive of a language and cultural barrier that they may face in daily interactions.

They need to work in tandem to realize each other's core strengths in building friendship that helps them overcome day to day struggles.

- Structuring Sessions

During informal sessions initiated at a local tea shop, over evening walks - their strong bond prevented them from opening up to therapy.

After a few meetings they were accepting of interventions in regulating mental health.

- Treatment Phases

Staggered therapy involves breaking away from codependency that reaffirms a lack in confidence.

Spending quality time with the self in practicing art or music was suggested to wean out from negative reinforcements.

- Materials Used

A percussion instrument, audio recording device and a soundbox to maintain rhythm.

Art stationery, images of landscapes that need to be captured through artistic expression, portrait setups of objects to be depicted via mediums of paint, charcoal etc.

- Desired Results

Progress in confidence building was brought about by immersive career growth opportunities that valued core inputs.

Drawing competitions with children and singing classes with kids were engaging and reassuring of client potential.

- Client Homework

Rising early, maintaining a healthy diet plan, scheduling a meditation routine and practicing one's professional skills as a reflective exercise.

Introspecting on what one's career choice means for oneself in terms of reinforcing personal identity and building an extroverted exhibition of true talent.

- Future Scope

Their potentials in organizing musical events and showcasing art exhibits may pull them out of a cultural barrier, enabling them to overcome the hurdle of language and communication.

Rapport:

- It was challenging for the therapist to intervene and highlight a limiting belief that is staggering their growth.
- After five individual sessions there seemed to be a reluctance to broaden from a close-knit friendship into exploring outer relations.

Ego Strengthening:

- Confidence in the self must be developed to overcome negative dependency on each other for rescue and solace.
- The feeling of stuckness, repetitive challenges faced in interacting with the external folks - must be overcome by breaking patterns of fight or flight reaction with awareness.

Counselee Needs:

- The intrinsic need of both clients was to be understood and acknowledged for the efforts they put into creative disciplines.

Session Goals:

- To shake the clients out of a comfort zone where stagnant energies are reaffirmed.
- To enable career path focus to address a lisp or any movement-related disability.

- To overcome insomnia and hypersomnia by scheduling routines for diet and exercise

Case Overview:

- Pravesh faces sleepless and restless nights, while Jiju risks sleep apnea and doses even during the day - despite adequate sleeping during the night.

Psychopathology Name:

- Jiju - obesity induced apnea, hypersomnia and lisp
- Pravesh - repetitive walking stride, insomnia and minor stuttering



*Fig. 41: A sketch by a student on the theme 'wildlife'*

## **Art-induced Gratification of Wellness for Non-teaching Staff**

Support staff are underpaid, understaffed and overworked in any organisation. They are taken for granted and expected to come on weekends as well as government holidays. They arrive before employees and leave after all have left. Their families remain neglected as their choicelessness toils away into excessive labor each day.

From serving meals, to keeping workspaces tidy, toilets clean and kitchens free of dirt - a school operates on the sole efforts put in by the working class who are responsible for housekeeping. Thus, their wellness is most affected by an unempathetic work culture that is busy in educating children without bridging value systems associated on humanitarian grounds for giving gratitude to the labor class.



*Fig. 42: The representation of a barren landscape by a student*

In a hierarchical and negligent system - true inclusivity starts in how we treat our maids, workforce and drivers. To cope with marginalisation at work, non-teaching staff form informal bonds and groups to survive the chaos of exhaustion and extractive labor. Their resilience is strongest in the face of exclusion and their commitment to work is commendable in times of sickness and stress.

### ***White Paper 1: The Art of Joyful Cooking***

Making food from ingredients has more to it than the skills of cooking. Devoting love into what we serve as a meal for a community is the most important element of consecrated cookery. The kitchen staff tirelessly rotate menus and satisfy the students and teachers through two meals and snacks each day.

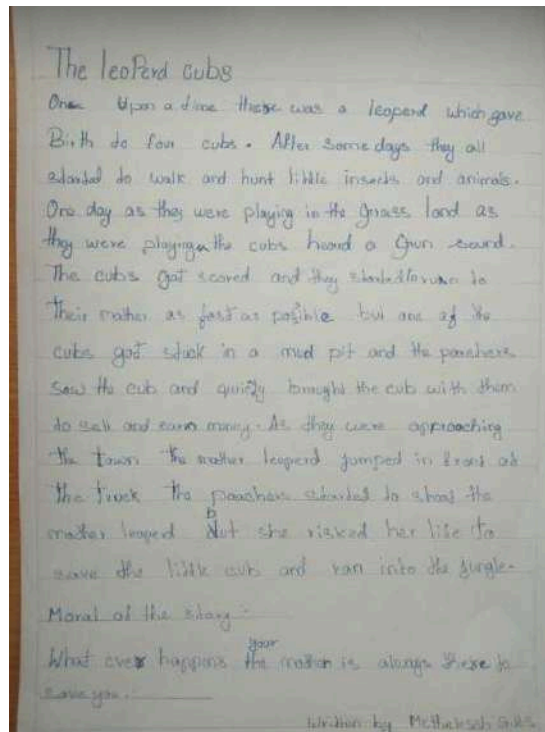


*Fig. 43: Serving the evening snack of the Mid-day Meal at the school kitchen*

As a part of the mid-day meal scheme offered by the government, hygiene and taste are maintained while supplementing a nutritious balance through the week across all age groups. From South India to East Indian recipes, the team of Bihari chefs headed by Ramesh and Kamlesh are responsible for all food-related orders even during festive occasions.

### ***White Paper 2: The Art of Effortless House-keeping***

Support staff need to be included in the vision of the school as significant members of the community. Having weekly offs on rotation basis is crucial to their investment in menial yet important jobs. Their healthcare is of utmost priority while providing them with health cards and inducting them into financial literacy.



*Fig. 44: An essay by a kid eliciting maternal instincts in nature*

Mostly governed by Prakash in the admin team, a smooth functioning team of housekeepers ensure daily cleaning of classrooms, passageways, staircases and toilets. They even ensure the dining hall is mopped before serving a meal and the kitchen is scrubbed off grease each day.

### **Significance of therapy for teachers and support staff:**

Be it individual, peer-assisted or group-steered - counseling and therapy offer solace to staff and enhance dedication in service with gratitude and complete presence. Be it educators or the employees of the management department, humans need to be heard and their internal conflicts need to be resolved for them to exhibit work efficiency.

Therapy in indirect ways and counseling in direct form suggest team building spirit that is essential for systemic smooth functioning and organizational ease in managing the workforce. Human capital thrives on the social engagements that enhance

attendance at the workplace and enjoying one's roles and responsibilities with full zeal and enthusiasm.

**Role Play Therapy as a strategy for community engagement in educational spaces:**

Including the schooling community in a theatrics of local governing bodies strengthens a sense of civic duty and a healthy citizenship as a whole. It is suggested that at a cultural programme, proactive participation of all in a stage performance may highlight accountability and respect amongst the stakeholders of the school.

Performance arts is an impactful medium to explore reaffirmation of dignity in labor and responsibility towards the school as a family unit. Role plays essentiate such values that have a lasting impression on the active collaboration in the daily operations of an educational facility.

***Ooru Panchayati - Enacting Scenes***

It is important that each role is distributed to members who are unfamiliar with the tasks done by an individual. By role switching, we sense the burden in each other's shoes and understand responsibility at scales. Bringing in humour adds to the insightful learning that helps build sensitivity and empathy in interpersonal relations.

Muppan - headman

A student in the higher grades could play the role of a principal who is bound by orthodox ways of commanding over the school.

Mannukaran - knower of the soil

A member from the housekeeping staff could enact the role of the head-chef to arrive at the hurdles he faces in ensuring food security for the entire village.

Kuruthala - village messenger

An astrologer, this role could be played by a meek old woman who is observant and wise in discerning the operations at school. Her insights could help the community grow and evolve.

Vandari - village accountant

This role could be played by a business studies student who could assess the daily expenses of school functioning and calculate profits from fees and funds.

Thalaveni - youth representative

A teacher could play this role and head the student council, realizing their grievances and needs in education.

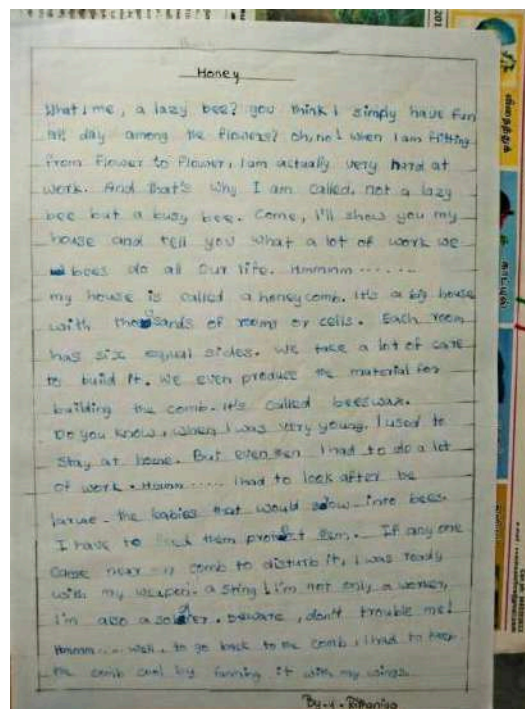


Fig. 45: An essay by a kid valuing community and citizenship - lessons from nature

Many other roles and characters could be developed to make the enactment enriching and insightful for the audience.

**Script:**

Mani, a Kuruthula (messenger) who serves for decades - runs to Muppanna, the headman of a village in the remotes of Tamil Nadu's forested hills. The Britishers had colonized the forest and its labor force in order to export rich spices to their central north western mainlands. The ship wasn't filled up with the promised yield as the rains were heavy and destroyed most crops such as pepper and cardamom.

Mani climbs the only cemented slope to the Panchayat house - built at the top of the hill. He prefers the soil, hence digs his bare feet through the mushy rivulet flowing beside that road, and reaches breathing heavily. "Muppanna, Muppanna" he squeals with a breathless voice and warns him of the message sent by the disappointed white men. Muppan takes a calm yet deep breath and passes a dialogue to fill the silence, "To what extent do these foreigners want me to go hunting for spices that they've never used before?". And Bhandari anna, the Vandari or accountant, smirks a witty smile, wanting to add his sarcasm in this matter.

But he is stopped by the urgency of the matter-at-hand to make calculations on how the forest could promise a better yield next year, to assure the British folk of a bountiful shipment. "Maniyappa," says the Mannukaran (the village soil scientist), "I have surveyed a few potential plots that are private forests now under the ownership of rich landlords. Maybe the yields from there could add up to this year's promised export?" The accountant goes silent with a smile which hints at the headman on what must be done.

The next day, the headman drafts a letter to estate owners levying hefty tax on encroached forests, and asks for a heavy percentage from their still-standing yields. He explains the non-maintenance of forest produce leading to the proliferation of invasive species, frequent summer fires and soil erosion from hillsteps. He documents rules of harvesting and bears the costs of upkeep onto the rich farmhouse buyers, to abate further land purchases.

Mannukaran was never addressed by his name, though he had the most wisdom of the soils. He is always silenced by Bhandari Sir who assures to generate maximum revenue from forested landscapes without an understanding of sustainable ecologies. But the youth know better, whom to believe for secure profits. Vimla, the Thalaveni (representative of youth affairs) trusts Mannukaran like an uncle, and addresses him as Mama (uncle) in all official gatherings.

"Mama, if we strip the elite landowners off their entitled yields, wouldn't they transform their lands into resorts with exotic trees? Why would they continue to be held responsible for generations of trade that the government has signed with invaders in rule?" With this, Vimla shakes the next day's meeting in an argumentative squabble that has no ending. The wise soil-man stayed silent throughout the discussions.

When asked about his opinion, he thanked Vimla for bringing up an important issue in forest resource management and suggested that incentives be given to those farm estates protecting the biodiversity of the forest. A green tag for maintenance of eco-friendly resorts, a subsidy on land tax for those who maintain non-conversion of land use from forests to ecotourism ventures, and an involvement of the land owners in the management of forest produce yields towards international shipping, were suggested.

The accountant saw profits for the governance system in doing so, the headman found a grip on how land revenue issues must be sorted, and the youth found job opportunities in managing the eco-tourist sector. As for the messenger and the soil expert, their conversations with nature on its current needs went on a philosophical ride down the road untraversed.

### **Significance of role play as a stage performance modality:**

This play could be enacted by students and serves as a moment for parents, teachers and the support staff - as adults to enlive the pre-independence era of India, and learn from wisdom as well as mistakes of the past. Embedding this narrative in a whole-school performance event can help children integrate their disciplinary knowledge into practical application in real-world scenarios. The use of theater and stage offer a

sinking-in of the urgency of ecological consciousness and the awareness around mismanaged forested landscapes.

**Focussed Group Discussions:**

Grades 6th - 8th: Moon Drawing Experience



Figs. 16-20: Moon paintings by children of the school

While most girls fantasized the hues around moonlight, boys stuck to comic-style sketches in a monotone of shades of grey - to thematically engage in ISRO's national online moon-drawing competition on the occasion of International Moon Day. The students romanticized nature, dreams, loneliness and love as feelings that dictated the

experience. While some were fascinated by wolves howling on a full-moon night, others suggested the presence of silhouettes of birds such as owls, bats and nocturnal creatures against the bright-lit sphere of shaded white.

From depicting the moon in a star-lit outer space of darkness, to mountainous view tops and rocky cliffs, the representations even stretched to urban highways and rising / setting lunar scapes.

Cats on walls, birds nesting on branches, heart-shaped balloons and lovers, picturesque waterfalls and crescent swings were concepts imagined by young minds through their exposure to and relatability with moon sightings across media and literature.

Some abstract art included life on the moon portrayed by a single barren tree, a floating island (piece of earth) against the white circular backdrop nestled with a tree relic, and the shadow of a tree with hills and a pitch-black sea.

The shades and tones of the moon varied from white, grey patches and pale yellow cheesy depressions - to pinkish orange hues around the spherical outline, and bluish yellow to dark skies studded with shiny starlets.

The emotional expression of each kid was highlighted as the moon theme triggered deeply buried feelings of wellbeing and illness of the mind. The thematic painting of the moon addressed their subconscious relation with nature as a channel to tune into unresolved anger, guilt and grief. Use of watery reflections in two drawings indicated an immersive and reflective exposure to one's persona, developing one's emotional quotient.

Shadows, dark skies and deep blue seas represented the depths of emotional engagement in their paintings. The most challenging aspect was to keep the moon as a central medium around which life happened, the universe existed, or dreamy states were framed. Each star represented a tiny desire, a spark to continue living. And applying white over a dark background was as tough as maintaining a white core around each

starling - while painting the sky in multiple hues and transcending shades that merged seamlessly.

### Grade 12th pass (Aluminites): Career Branding and Envisioning

Five Alumni students of 12th grade who passed the academic year 2021-22 were interviewed in a focus group dialogue on their rationale for opting certain subjects during their study tenure, mapped to the career choices they were making for their future.

Table 1: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Vaideki	V	A	K	19	F	Tamil	Dance	Geography
Satishkumar			K	22	M	Tamil	Economics	Applied Math
Jai Adithta			K	24	M	Tamil	Sociology	Political Science
Swathi		A		22	F	Tamil	Music	Psychology
Abhishekdev			K	23	M	English	Computer Science	Automotive

While Vaideki exemplified multiple intelligence across all three learning styles, her choice of subjects validated her average VAK score across the categories of multi-modal learning. Tamil being a subject taught majorly by articulation of speech and pronunciation in oral form, it was selected by Vaideki, Swathi -'an auditory learner, Jai Adithta and Satishkumar - both tactile learners.

Vaideki chose dance in the kinesthetic realm of learning, while Swathi chose music as she was inclined to audio-aesthetics. The three boys chose kinesthetic subjects like automotive, applied math and political science to leverage their tactile skills in machine making, playing with numerics, and policy framing.

The five had a dream company to run that balanced-out their skills to make a strong team of young founding members. Their brainstorming on ecotourism led them to

design the company logo, to create a name and vision statement, as well as to come up with ways to endorse the brand of the company. They realized the potential of the tourist industry in their villages and planned a unique set of products and services to be included in their business enterprise.

They brought together learnings from varied disciplines into framing the product and service launch initiative, keeping in mind diverse skill sets. It was a remarkable experience to showcase their talent, as they plan to attend regional arts and crafts events in Kerala to refine their business strategy.

It was promising and enriching to see the school's pedagogy brought to fruition by their own alumni. This entrepreneurial model could serve as motivation for other schools to incorporate teaching approaches that use multiple intelligence and include different learning strategies into the effectiveness of classroom engagement. The strengthening of such a plural modality of learning can only be attained by child-specific cultural appropriation of syllabi to include environmental sensitivity in their teaching methodologies.

### **Alumni Meet:**

Five students of the previous year's 12th grade batch visited school to express their continued interests in visual arts. They are the 3rd cohort graduating from the school.

Prakash R hails from Vadakkalur, Tamil Nadu. He is a trained Bharatnatyam performer and shares a passion to travel with his peers. He wishes to pursue Bachelors of Fine Arts at Kochi, and covid has staggered his academic progress. He has taken a break from studies to explore 'Binale' - an art event at Alleppey, Kerala.

Ponnurasi N is from Thuvaipatty, Tamil Nadu. He connects his love for nature with artistic expression. With his peers, he wishes to co-found an NGO 'Karoli' which in Tamil signifies creativity, philosophy and art. They plan to do mural paintings and earn

through redecorating public spaces with their abstract art and unique style of bringing alive dead places.

V. Tejasvi (Dejashvi) is a 20 year old NIOS graduate who took Home Science, Environmental Science, Tourism, Painting and English as subjects, similar to his batchmates. He stays at Thoovaipathy, Kerala - which shares borders with Tamil Nadu. He too wishes to enroll himself in a BFA degree at Kochi soon. As a founding member of his new venture, his interests lie in establishing a boutique towards the sale of tribal handicrafts, reviving culture and identity.

M. Bharath and Sharmila R are still in the process of passing their Tourism exam as it was a new subject introduced by CBSE at the time of Covid - and they couldn't attempt the exam back then. Bharath comes from Dhasanoor, Kerala and Sharmila's native is Kondanur, TN.

### **Student Interview:**

Hima is a 10th grade student in this academic year who has taken up Apparel / Embroidery as an elective subject in the creative fields of skill building under CBSE curriculum.

While her birth-name is Vinoda, her peers address her by her pet-name, and this brings in warmth amidst peer relations.

Her teacher also shares a pet-name that children address him with. Palash (Somnath) has majored in textile from Shantiniketan, West Bengal - and chosen to live a simple life with a house-wife - here at Anaikatti. He got married a year ago, but worked for five years with the school. He is the senior-most non-Tamil speaking teacher with no tribal exposure, to have understood learning needs - given his language barrier.

While Hima paints monochrome and complementary color schemes using water colors, the teacher and student share a trusting and cordial relation with necessary boundaries, to create a safe learning environment.

### Cases: Rationale for subject choice in the 11th grade

The graduated students of 10th grade entering 11th were assessed on their Multiple Intelligence quotient using the basic Visual-Auditory-Kinesthetic scoring questionnaire shared by the Institute of Holistic Mental Health, Tirippur - Tamil Nadu. The VAK scores were then super-imposed on their choice of subjects, to infer relations between gender disparity, learning styles and subject specializations. Each case suggested a contrasting career path based on the student's interests and skill sets towards pursuing a livelihood. This model of recognising dominant modalities of engaging in learning also informs teachers in developing modules to help curricula be delivered in interactive ways, keeping in mind multiple intelligence for the cohort of students.

Table 8. List of 11th grade students, their VAK scores and their chosen subjects

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Raja			K	23	M	English	Automotive	Business St
Marcus			K	21	M	English	Food Prodn.	Chemistry
Sandhya		A		24	F	Tamil	Food Prodn.	Chemistry
Surendran			K	23	M	English	Food Prodn.	Chemistry
Santhosh		A		20	M	Tamil	Accountancy	Business St
Lakshithaharini	V	A		21	F	Tamil	Food Prodn.	Chemistry
Monesh			K	23	M	Tamil	Accountancy	Business St
Arfath		A	K	16	M	French	Tourism	Bharatnatyam
Buvana		A		22	F	Tamil	Food Prodn.	Chemistry
Arivu			K	23	F	English	Physics	Comp Sc
Srimanikandan			K	21	M	English	Tourism	Comp Sc
Asmith	V			22	M	English	Automotive	Comp Sc

Kumaresan			K	24	M	English	Automotive	Comp Sc
Sreebhavana		A	K	21	F	Tamil	English	Comp Sc
Thilakesh		A		18	M	Tamil	Accountancy	Business St
Gokul			K	25	M	English	Automotive	Comp Sc

### Case 1: Audio-Kinesthetics and Gender - exhibiting livelihood skills

Arfath is a friendly student who relates to an auditory-tactile mix of learning modes, with both scores being the minimum compared to the scores of his peers.

In the dual mode of audio-kinesthetics, Sreebhavana scores the maximum and is the only other student to have both these multiple intelligences dominating collectively.

Table 9: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Arfath		A	K	16	M	French	Tourism	Bharatnatyam
Sreebhavana		A	K	21	F	Tamil	English	Comp Sc

Both being auditory and kinesthetic simultaneously in their approach to learning, Arfath has challenged his score to the creative side of artistic expression - choosing French as a second language, and Indian Classical Dance to complement Tourism. Though he may struggle theoretically, academically lighter subjects will give him the confidence of overcoming any learning difficulty.

Sreebhavana may also struggle through academics, and has hence solely opted out of social and pure sciences, by only choosing computer science as a possible career choice, alongside Tamil as second language.

## Case 2: Gendered preferential learning styles and choice of linguistics

While Sandhya stands at the highest VAK scoring in the category of Auditory learner, Marcus shares a minimum K value with another student in his class who is tactile dominant.

Table 10: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Marcus			K	21	M	English	Food Prodn.	Chemistry
Sandhya		A		24	F	Tamil	Food Prodn.	Chemistry

Sandhya's auditory score is reflected in Tamil as a second language, since it consists of predominantly vocal and oral styles of learning. Her audio-mode of learning also confirms the instructions she needs to listen to in Chemistry practicals and cookery. The choice of one of the pure sciences actually compliments food processing as a career alternative.

Marcus, being Kinesthetic and Christian, chooses English as first language as his lack of auditory dominance limits him from also investing in Tamil as a subject of academic importance. His choice of the other two subjects remain the same as that of Sandhya's, but are based on his motor development skills linked to hand-eye coordination while cooking with chemicals in a lab environment.

### Case 3: Gender and the Dichotomy of Sciences of Labor

While Raja and Arivu share the same average K value, their kinesthetic dominance results in differing subject choices

Table 11: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Raja			K	23	M	English	Automotive	Business St
Arivu			K	23	F	English	Physics	Comp Sc

Genders being the deciding factor here, both are tactile learners who enjoy laboratory and workshop environments. Yet Raja chooses mechanics, while Arivu opts for being fascinated by the physical principles and properties. Both subjects share the same foundational basics, yet are either skill-driven or theoretically inclined.

The second choice of subjects switches the theory of business operations with practicals of computer applications. This balances out the theoretical and practice-based subject choices for each of the students, leaving room for tactile rigor.

**Case 4: Audio-visual cues to linguistics, decor and instruction versus skills towards livelihoods**

Lakshithaharini is the only student with audio-visual intelligence in her cohort. Srimanikandan shares a minimum tactile learner dominance scoring with his other classmate.

Table 12: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Lakshithaharini	V	A		21	F	Tamil	Food Prodn.	Chemistry
Srimanikandan			K	21	M	English	Tourism	Comp Sc

Lakshithaharini being the only student with audio and visual modes of learning may find cuisine aesthetics, hospitality industry service and experimentation to be appealing. Her auditory-dominant learning style reflects in her decision to pursue Tamil as a second language.

Srimanikandan being kinesthetic, with the minimum K score in his cohort, chooses a new subject offered at 12th grade by CBSE - Tourism. Alongside his interests in the ecotourism industry, he safely chooses to be computer literate, although ICT may be a challenge if taught only theoretically.

### Case 5: Majoring in diversity - from design to mechanics of cars and bikes

While Asmith's visual aesthetics is reflected in his V value that stands as the sole only-visual learner, Kumeresan with an action-based activity-mode of learning chooses similar subjects but for an altogether different career choice.

Table 13: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Asmith	V			22	M	English	Automotive	Comp Sc
Kumaresan			K	24	M	English	Automotive	Comp Sc

Asmith is dominant in the visual learning style, and wants to pursue design elements within the automobile industry, for which computer-aided drawing may be necessary.

Kumeresan being another classical struggling learner in mainstream schools, chooses to materialize his kinesthetic skills in engine assemblage and machine fabrication workshops, where again ICT is mandatory in an automated factory setting.

**Case 6: The auditory audit of language and numbers - versus the tactile potentials of fabrication and assembly in the automobile industry**

With Thilakesh at a minimum auditory score, and Gokul at a maximum score related to body-movement and hands-on approach to learning, they both classify with other boys who are predominantly kinesthetic learners - as struggling students requiring special needs in a theory-heavy curriculum that doesn't accommodate multiple intelligence. Thankfully, the school they are in allows room for negotiating through diverse learning styles.

Table 14: Distribution of visual, auditory and kinesthetic learners with their subject choices

Student	V	A	K	Max VAK score	Gender	Elective Subject	Supplementing Subject	Complementing Subject
Thilakesh		A		18	M	Tamil	Accountancy	Business St
Gokul			K	25	M	English	Automotive	Comp Sc

With Tamil governing Thilakesh's choice as a second language, his auditory learning style will surely come to use. Accountancy may require a tallying operator to be sound in numerics, and businesses may require convincing oratory skills. Thus he may excel in administrative humanities as a career choice.

Gokul has typically chosen a career path like any other boy in his class who shares interests in mechanical operations, alongside a backup in computerized automated-intelligence and robotics.

**Significance of Career Counseling:**

Teenagers are unaware of job prospects. The electives offered are vast in scope and specialized in certain domains, making transition very difficult. Such discussions on passionate endeavors and paving the way for a secured profession, require immense planning with the child's needs as central to the process of career advising.

It is also important that students pick up on interpersonal skills while engaging in group tasks that require co-dependent relations to be built and honored through an ethical team-sharing experience. The learnings across cohorts could be so unique in shaping a child's future demeanor in facing challenges at the work-front. Making kids ready to engage with the outer world at secondary and higher-secondary levels is an essential part of framing culturally apt curricula and designing syllabi on the principles of human interaction with ecology.

The VAK scoring thus offers guidance to teachers to form teams, to engage groups in critical reasoning, and to diversify learning strategies both within and across sub-cohorts. It also serves as motivation for students to make informed choices about their electives, specializations and fields of interest.