

Indigenous knowledge: a key to context-based learning in the 21st century

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Abstract

21st century is the era of plurality and global connectedness. In contrast to the culture of homogenization and uniformity popularized during the industrial times, the knowledge society under 21st century aims for creative diversity and decentralization of practices (Stevens, Miller & Michalski, 2000). In education, this calls for a movement away from a standardized, centrally planned approach to a curriculum that incorporates elements from the ground context of the learners. A starting step in this direction would be to acknowledge various forms of learning that exist outside of the formal space of schools and extend to the culture, communities and language of the students. Here the concept of indigenous knowledge comes into the picture. The idea of indigenous knowledge has been the center of academic interest over the issue of intellectual property, participatory and feminist research movements as well as sustainable development initiatives. In education, however, indigenous knowledge could be seen as an important learning resource since it is based on the rich experiences learners gain from their close communities. Indigenous knowledge is valuable from an epistemological point of view as it provides an alternative to the popular overly abstract, fragmented and theoretical idea of knowledge to a holistic, integrated and procedural one. The paper provides a complete theoretical backdrop related to the significance of contextualized learning and indigenous knowledge for the learners. The authors have also tried to identify some success stories and initiatives where indigenous knowledge has contributed as a learning resource at institutional level across the world.

Keywords: Indigenous knowledge, contextual learning, learning resource

Introduction

In the 21st century, where the educational world is preoccupied with International curriculums, context-based indigenous form of learning may sound redundant if not outright contradictory. For a majority of people, education is the only source for upwards social mobility. However, the process of education is not always exactly free from biases, power dynamics and ideologies (Apple, 2004; Giroux, 2001). There are always some dominant

groups whose culture, habits, language and lifestyle are favored by the formal educational institutes (Grenfell, 2009; Bernstein, 2000). These differences on socio-economic and political grounds make one think- on which plane should we visualize the education for 21st century? And how do we make sure that education for 21st century is cross-cultural and pluralistic instead of being a lopsided interpretation of it, normalized by the affluent section of the society? If we accept the popular interpretations of 21st century curriculum, are we being fair to the common masses who might not possess the basic socio-cultural capital to succeed in such a system? Making sure that the curriculum at any given time and century is culturally relevant is one of the solutions to this problem.

According to NCERT's position paper Work and Education (2005), almost 93% of the entire workforce in India is engaged in the informal sector. The students coming from these households carry with them rich social and cognitive capital, which is not only ignored by the schools but also discredited as inferior. The modern-day formal education could be perceived as a process of deskilling the learner where he/she is alienated from the knowledge base he had acquired from his family and community. To succeed in the formal setup, the students from the indigenous and traditional communities do not just have to pick up the cultural capital of the dominant class, they have to give up their epistemological system, language and values. In this way, the formal education system not only devalues the knowledge which is culturally grounded; it also devalues the identity of the students who do not belong to the dominant class. The fact that official school systems have a detrimental effect on the background knowledge that children had earlier acquired about nature, culture and values in their communities is no surprise (Magni, 2016). Acknowledging the indigenous knowledge as a form of culturally-relevant and contextualized learning and integrating it into formal educational spaces has the potential to counter this exclusionary and top-down nature of education. This paper, therefore, advocates for the integration of indigenous knowledge in the formal educational curriculum with reference to the spirit of the 21st century of holism, plurality and heterogeneity. For formal education to move beyond the principles of fragmentation and centralized control dominant in the industrialized society, the curriculum of 21st century needs to shift from the traditional framework of knowledge, which is standardized, to learning which is rooted in the socio-cultural context of the students. This idea is further elaborated in the following section.

Situated/contextual learning versus standardized/established knowledge

Learning in the traditional educational setup works on a vertical model where a competent authority or teacher is expected to pass on a well-defined knowledge or skill to an individual. However, in the informal work-related situation, learning could be seen as a continuous process that is neither stable nor well-defined ahead of time. Such situated or contextualized forms of learning consider knowledge as “*constructed through interaction with the environment, in a dialogue with others, through horizontal interaction and reflection*” (Du-Plessis, 2010 as quoted in Carm, 2014). Knowledge here is created by making sense of the new information along with the prior knowledge and experiences of the individual. Its contextualization takes place within the culture and language of the individual. The following table differentiates this situated form of knowledge from the standardized one:

Conceptualization	Established/Standardized	Situated/Contextual
Learning	Cognitive, passive, divided into separate branches	Incorporated into community and identity, holistic
Types of knowledge	Codified in abstract texts and symbols	Indigenous, embodied/context- sensitive
Understanding built	Universal/abstract	Identity transformation
Transmission	Vertical instruction by figures of authority	Horizontal, collaborating with others

Table 1.1: Established/Standardized Versus Situated /Contextual Knowledge

(Adapted from Carm, 2014)

In traditional societies, Indigenous knowledge serves as a repository of situated knowledge evolved over centuries as a mechanism to adapt better to the local environment. The term “indigenous” refers to the original inhabitants of a particular area. Indigenous knowledge is the product of everyday practice and is continuously reinforced by experience, tests and errors (Ellen & Harris, 1996). The concept of indigenous knowledge and contextualized learning would be elaborated on in the next sections.

What is indigenous knowledge?

“Indigenous” is often used to describe something which is native to a particular area. The term **Indigenous knowledge** comes from indigenous people who are the original inhabitants of a particular geographic location in contrast to groups that had settled or

colonized the area later on. According to Cobo (1900), “Indigenous people are the descendants of groups which were in the territory of the country at the time when other groups of different cultures or ethnic origins arrived there.” Indigenous knowledge is, therefore, the knowledge that is weaved within the ecology of a group. It is built on the experience tested over centuries, adapted to the dynamic, changing, local culture and environment (IIRR, 1996). In the contemporary discourse, however, indigenous knowledge has become an umbrella term that refers to all kinds of knowledge which are culturally and ecologically grounded in a particular region instead of being defined in terms of indigenous people and their origin. It is therefore not relevant to know whether the people in question are the primary inhabitants of an area, the significant thing is to understand how people in a specific region interpret and connect with their environment (Langill, 1999). Terms like Traditional knowledge, local knowledge and Indigenous knowledge are often used synonymously with each other.

According to the Anthropological Survey of India (ASI), Indigenous knowledge is derived from a diverse spectrum of occupational groups and population, such as farmers, local medicine-men, fishermen, etc. whose knowledge is connected to a particular place and is often likely to be based on periods of occupancy spanning across number generations. Indigenous knowledge is what helps a community in sustaining itself and its culture. In India, traditional and unorganized occupational practices like farming, marble carving, fabric printing, pottery, etc. serve as sites for indigenous knowledge. Unfortunately, the experiences and insights of people engaged in these practices are not only excluded from the formal educational institutes, but they are also treated as inferior to the modern forms of knowledge which is often highly theoretical, decontextual and Eurocentric in nature. (Hall & Tandon, 2017; Visvanathan, 2005; Visvanathan, 1997). To understand the need for incorporating indigenous knowledge in the formal curriculum, one needs to be familiar with the theoretical underpinning focusing on culture as a resource in the learning process.

Culture as a source of learning: a socio-psychological perspective

The socio-cultural perspective in Psychology pays emphasis on the role of social interaction as well as cultural artifacts around the individuals in aiding their learning. On a social level, others can help the learners to interpret their behavior and thoughts to reach a common understanding and maneuver through their existing Zone of Proximal Development (ZPD) (Sewell, 1990). This is often achieved with the help of processes like scaffolding and mediation that involves the use of verbal clues and careful instruction (Moreno, 2009; Sewell, 1990). Traditional societies have long been relying on manual work like hunting, fishing,

farming etc. for their survival. The procedural knowledge of these practices is passed informally by elders of the community to the young children who work in close proximity to them. Learning here takes place through the mode of apprenticeship, where the contextual setting itself acts as a source of naturalistic learning for the people. In contemporary society and even in white-collar jobs, apprenticeship still serves as an experiential and informal form of learning where a group of people sharing a craft or profession work together in an authentic setting (Brown, Collins, & Duguid, 1989). Similar to this is the idea of situated learning first introduced by Lave and Wenger (1991) that acknowledges the importance of the socio-cultural context of the individual in their learning. According to them, learning is a context-specific phenomenon and cannot be isolated from the place of its origin. Learning tends to be more effective when any idea or concept is evoked from the cultural contexts of the students instead of being introduced as an abstract entity that Sarangpani (2005) calls “disembodied propositions.” Moving beyond the role of significant others, the idea of situated learning highlights the role of culture itself as an important resource in the learning experiences of an individual (Carragher, Carragher, & Schliemann, 1985).

All cultures provide their member with some form of tools to foster their learning (Miller, 2002). These tools could provide specific strategies for organizing information, mother tongue, or mnemonics (Kövecses, 2003). It implies that the development and organization of learning resources without taking into account the context of the learner is not only futile but harmful to the learners since it imposes information and world-views that may be in direct conflict with their earlier experiences. It is in this spirit of constructivism under 21st century that as pedagogues and curriculum designers we welcome alternate paradigms of knowledge instead of labeling them as substandard or primitive.

Indigenous knowledge: An enriching resource for the classroom

The last section explored how contextualized learning within indigenous knowledge could aid the learning process from a purely theoretical perspective. In this section, we are going to highlight various instances and concrete examples of how indigenous knowledge has or could potentially contribute to the existing formalized curriculum.

Perhaps the most successful initiatives taken at the formal institutional level to incorporate elements from the local environment into the teaching-learning of Science is Hoshangabad Science Teaching Program (HSTP), Madhya Pradesh. The textbooks under HSTP used local terminologies already familiar to the children. Moreover, the experiments described in these books ensured the use of indigenous materials, which were already present

in the surroundings of the learners (Masih, 1991). The program also included a component of field trips or *Paribhraman* through which students could directly interact with nature, collect specimens of various plants and other objects in their local environment and note down their observations. Some more examples like the Alaska Rural Systemic Initiative (AKRSI) serve as examples of a shift in pedagogy from teaching about local culture to teaching through culture. This initiative emphasized on “Pedagogy of place.” Under this, preparation of local maps by the students and activities such as the organization of native science fair, oral histories as well elders residence programme within the school premises took place so that they could participate in the teaching-learning process with the students (Kushman & Barnhardt, 1999).

Another such example from India includes a course based on environmental education for rural students called “*Our land, our life*” (OLOL) or “*Hamari Dharti Hamara Jivan.*” The course was started in 2002 in the mountainous region of Uttranchal after rigorous testing and development over 15 years (Jackson, 2003) and it runs in all government schools of Uttranchal. It was felt that the existing formal school curriculum did not cater to the needs of rural children and distanced them from the traditional knowledge and practices of their community- affecting the livelihood in the village. The Organic Farming Association of India (OFAI) along with a local NGO Uttarakhand Seva Nidhi Paryavaran Shikshan Sanstha as well as Uttarakhand Environmental Education Centre (UEEC) therefore decided to develop a land-based curriculum. The curriculum was initially meant for standard 6th to 8th but was later expanded to standard 1st to 10th (Jackson, 2003; Coelho, 2012). One of the primary purposes of the curriculum was meant to provide an alternate form of education that emphasized the well-being of man-made and natural environment (Coelho, 2012). It focused on issues of local concern and connected the classroom with real environmental issues. The curriculum was a result of two types of thinking- an alternative form of education where rural community, their needs and livelihood can be prioritized and a rediscovery of the traditional farming methods which have proven to be more safe and sustainable than chemical agriculture. OLOL curriculum views the village as an ecosystem and covers topics such as land degradation, soil erosion, water scarcity, local natural vegetation, constructing fuel-efficient stoves etc. The course was developed with the support of the local community, especially the women. A study on OLOL by Honward (2010) reveals that although curriculums that integrate indigenous knowledge in school are direly needed, however, adequate emphasis must be paid on updating such curriculum, otherwise it might become meaningless for the new generation. OLOL curriculum, according to the author, should

include more current issues of local concern such as climate change in the Himalayan region. It means that instead of merely romanticizing traditional knowledge, curriculum makers also need to be in touch with the dynamic and evolving nature of knowledge itself. Blind focus on traditional knowledge is against the integration of knowledge, which is essential for the learner of 21st century. Adaptability of content and pedagogical means therefore can be considered to be of utmost importance to the curriculum of the future.

Teacher-education curriculum has also witnessed an adaption to the needs of the local community through initiatives like the Bokamoso Pre-school Teachers Training Project in Botswana (South Africa). Under this, the teachers of Botswana and surrounding regions were provided in-service training in the local mother-tongue of the students. The curriculum was built around themes suggested by the community members and local NGO's. The teachers were also familiarized with the local and indigenous knowledge and traditional skills of the marginalized communities through a series of guidebooks. The project was known to have made a significant impact on the involvement and sense of ownership of learning among the community members and students (Le Roux, 2002).

The above example demonstrates how the cultural relevance and experiential nature of indigenous knowledge could prove to be an invaluable resource in the curriculum. This integration would benefit not only the school but also the community. Criticality however, is important while dealing with any form of knowledge. The study by Honward (2010) on *Our land, our life* curriculum shows that mere emphasis on indigenous knowledge is meaningless unless it resonates with the routine lives of the students. Similarly, Shukla & Chand (2003) shed light on some of the traditional practices like superstitions and misbelieves that could be harmful to the overall well-being of the community. In some cases, the transmission of indigenous knowledge could be heavily sexist and biased towards only certain members of the community. Surely, both indigenous and western knowledge have their weaknesses, but it is expected that their integration could bring about some positive changes in the world-views and perspectives of both of these epistemologies.

Conclusion

We have discussed some of the examples of how indigenous knowledge could be incorporated in the formal learning spaces. This integration does not only make sense from a pedagogical perspective, but it is also important from the standpoint of social equity, especially in availing educational opportunities. Perhaps, the biggest argument in favor of culturally relevant pedagogy is that it can translate into education for the masses. This aspect

of education is something that cannot be compromised with no matter what century we are living in. Engaging traditional knowledge in the formal curriculum is also in contrast with the top-down, centralized approach, which resonates with the spirit of 21st century. Learning at the grass-root level perceives the local context as a primary vantage point to venture into the world. It also allows the curriculum to be designed according to the needs of the local community and the learning resources available to them. Learning which is localized provides the kind of flexibility and adaptability that is required from the curriculum of 21st century. A culturally responsive pedagogy acknowledges that each learner comes with a unique set of experiences and socio-cultural backgrounds. Under it, students can work with the members of their communities over issues of local concerns such as- decreasing groundwater level, the spread of seasonal diseases, sanitation, vaccination etc. Such avenues are not only helpful in bridging the gap between home and school, but they are also excellent opportunities for students to learn from their communities about things that matter to all of them. This approach is also effective in deconstructing the elitist nature of the formal educational institutes and developing skills related to civic sense, collaboration, problem-solving- all of which are essential to the learning of 21st century. Indigenous knowledge is not just a repository of facts but also an amalgam of traditions, spirituality, values and strategies of survival. This holism, which lies at the center of indigenous practices, might help in eradicating the overly intellectual and abstract nature of standardized knowledge. The experiential learning gained by individuals informally through their communities has an interdisciplinary element to it, which makes it more useful and relevant for the individuals.

The 21st century is an age of multiple paradigms and super-complexity. We no longer live in a time where one form of believes and practices in the social or intellectual world would threaten the other to the extent that there is no scope for co-existence. Similarly, in the case of knowledge, the presence of context-specific pedagogy does not compromise with the standardized, formal learning. They both can co-exist and complement each other (Visvanathan, 1997; Visvanathan, 2005). The experiences of the child-related to going to field or weaving, painting can be used as the premise on which one can build the formal concepts in educational spaces. It is only through the representation of all forms of knowledge and culture practiced by the members of the society, we can ensure the pluralistic and democratic nature of education.

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