

BREAKING SILOS THROUGH STREAM EDUCATION AND USING THE WISDOM PROFILE TO ENGAGE WITH CULTURE

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What is an integral approach to STEM education that addresses the socio-ecological aspects for sustainable development in rural schools? We present the theory and practice of the same in breaking the silos of individual subject learning to transdisciplinary learning of Mathematics, Environmental Sciences, language and art.

India is a country of diversity with many disempowering ISMs coming from strong socializations especially in rural India. How can we use our wisdom profile (Monica, 2017) to broaden the social profile to be an asset of inclusion rather than exclusion both for society and the environment.

The theoretical framework is based on the work of Sri Aurobindo to make a national education that is integral (Aurobindo, 1921), Seymour Papert's theory of constructionism (Papert, 1986), and more recent work by Dr. Monica Sharma on radical transformational leadership based on the conscious full spectrum response model (Monica, 2017).

In this paper we will focus on approaches we had adopted in Isai Ambalam a rural school in South India in making culture and celebrations of Pongal, Karthigai Deepam, Aadi festival, Christmas inclusive, eco-friendly, meaningful and engaging not only socially, but also integrated in STREAM (Science Technology Research Engineering Arts and Mathematics) education with awareness of the environment.

The stories behind the festivals were seen from the perspective of universal values (like equality, care for people and planet, responsibility, well-being) as well as an opportunity for changing lifestyle at school and home to be more healthy and environmentally conscious. For example, we looked at traditional sweets that are made with jaggery instead of refined sugar as sweets in celebrations. Children studied about the health benefits as well as made these sweets at the school and then at home with parents. In Karthigai Deepam we made traditionally Maavali, a natural palm flower based charcoal firework that is non-polluting and only creates sparks based on human powered centrifugal force. In Pongal, we looked at Kolam (the traditional patterns) and also looked at breaking the social patterns on only girls/women doing so. In addition, we looked at traditional strategy game of Aadu Puli as a tournament. We explored the Indian solar calendar used in Tamil Nadu and planned the Aadi festival with planting seasonal vegetables in our school garden. We also studied about Monsoon, graphed and compared rainfall data in the month of Aadi in different states of India. We had studied the palm leaf craft for a week to make 3D objects like birds, stars, fish. For Christmas we decided to make our own decorations with palm leaf craft. We also made many innovative fair games and engaged with children from other schools with.

Aurobindo, Sri. (1921). *The Human Mind, A system of National Education*, Tagore & Co. Madras (pp.1-8).

Monica. S. (2017). *Radical Transformational Leadership: Strategic Action for Change*, North Atlantic Publishing, at Berkeley, California (pp.63-73, pp.236).

Papert, S. (1986). *Constructionism: A new opportunity for elementary science education*. Cambridge, MA: M.I.T Media Laboratory, Epistemology and Learning Group (NSF Grant Proposal).

