

Culturally responsive maker-space learning model towards meaningful education for marginalised communities

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Abstract

The following paper discusses on various aspects of maker spaces in Ramdwari village bringing a meaning to traditional practices by establishing a link between local practices and conceptual knowledge and frameworks.

Keywords

Contextual; Cultural; Maker-Spaces; Grass-root innovation

Description

The organisation started working towards co-creating every village as a centre of innovation and every child as an innovator facilitating social change since 2013. It is working in 5 public schools of Lucknow district and one after school learning program in village Ramdwari.

The organisation is a not-for-profit organisation working in the field of alternative education. Out of the various project locations, one of the maker-spaces resides in village Ramdwari of Sitapur district in Uttar Pradesh since 2013.

Lack of education amongst the population, poor infrastructure facilities, culturally rooted orthodoxies, social inequalities, recognition of local knowledge were some of the challenges to the development of the village Ramdwari people. With no other aid in sight, the founders themselves decided to step up and co-founded the organisation to bridge the gap in the education system of the village and work towards the goal of community development through education.

The maker space is based at Ramdwari village of Mahmudabad Tehsil, Sitapur district, Uttar Pradesh. The village has a population of 1,497 people based on 2011 Census. The total literacy rate is around 54% out of which male literacy rate is 59% and female is 48%. The literacy rates are far lower than the state average of 68% and national average of 74%. Families are engaged in agriculture and women are housebound, engaged in daily chores and looking after the children. Young boys and men migrate to west India in search of stitching and embroidery jobs for livelihood. Adult literacy is almost non-existent and even the children do not study beyond classes 4-5. The boys often start working before their teenage years and the girls are married off by the age of 13-14. The villages lack basic infrastructures such as roads, sewage, and toilets in homes and even medical facilities. The learning community is engaged in various local practices, art and culture like chikan-kaarigiri, bamboo weaving, zardosi and many more.

Description of the educational experience

Coming from the backdrop of Krishnamurthi school of thought and democratic schooling, our values evolved around freedom of choice and expression, learning by doing and making learners active and informed members of the civic society. We thought of integrating it in the student's thinking and mindset but the road wasn't smooth. In our first project with children we failed miserably. The children were asked to make something innovative in an 'innovation lab' from the decontextualised material given to them. They only made things that were familiar to them and could not make anything new or innovative. Now when we reflect back it was a useful lesson which

taught us that it is imperative to build community context and children-lived experiences together in the teaching-learning process. As we went deeper, some local issues and problems erupted. For instance, villagers had to walk 5 kilometres to charge their cell-phones as the village did not have electricity supply. After some sessions around alternative sources of energy and some exposure through books and videos, children at the centre assembled the related material and made a solar mobile charger that helped the community to charge the cell-phones in the village itself. This form of education attracted the community's attention which led to boys joining the after school learning program along with the girls.

There were lots of interesting projects that started taking place but certain deep-rooted problems also erupted. Issues around gender became apparent when objections were raised by the community against boys and girls sitting together in our classes. Girls' mobility outside the village was frowned upon. We adopted the storytelling pedagogy and looked closely at its impact on shifting the mindset of the community and children towards each other. When the boys of Ramdwari village centre listened to the story "Cycle par sawaar auratein (female on bicycles)" in which a young brother helped his sister to ride a bicycle so that she could go and study in a school, they were inspired to attach an umbrella on the top of a bicycle and a plastic sheet at the back so that the girls of Ramdwari could attend school during rainy days. The umbrella covered their body and the plastic sheet covered their bags. It showed us some snippets of children starting to think and question the gender issues and also working on the same.

As children started to engage in the education process with us, enrolments in formal schools started to increase with both boys and girls joining mainstream schools. When children were exposed to mainstream schools they felt completely disconnected with the school curriculum as it lacked connections with their local language, culture and art and also dominant ideologies were being continuously reinforced. The interest that had been generated was soon beginning to die as the school education lacked connections with their local knowledge. Therefore we felt the need to explore ways of integrating local and community knowledge into the curriculum so that children continue to ask questions, challenge the status quo and move towards social justice. We had a dialogue with the community members in which we found numerous examples in which connection of local knowledge with mainstream education is there. One of these being extraction of peppermint oil from the crop which involves a process of evaporation and condensation. We applied the local knowledge of peppermint oil extraction which was known to all the villagers to help the children understand the concept of water cycle. This made them realise that the local knowledge can be extremely scientific and logical.



Learning from the above example, the children collaborated with the potter of the village to devise a matka-cooler (earthen pot cooler) which kept the water cool during summer and when attached with a fan and a battery, provided cool breeze to all of us. The children started applying local knowledge to solve local problems, but still the questions of freedom of choice and social justice wasn't being addressed very centrally.

Then came the turning point when discussions around Citizen Amendment Act (CAA) and National Register of Citizens (NRC) started and children began to raise questions about their freedom to live and move in their own

country.

In one of the sessions, we tried to give the children exposure to different revolutions that had happened across the world whether it was a movement against slavery in North America or Narmada Bachao (Save Narmada River) movement in Madhya Pradesh. Children were exposed to stories, videos and art forms which transformed their thinking. In the movement against slavery, the activists made a quilt to make a route to escape. Also the documentary 'Stitches Speaks' which celebrates the art and passion of the Kutch artisans and traces the multiple journeys made by the participants towards defining their identities in forming Kala Raksha Trust and School for Design influenced the young minds of Ramdwari village.

Apart from the above, children were given exposure to stories, poems and songs along with their historical context of various activist writers like Ismat Chughtai, Faiz Ahmad Faiz, Safdar Hashmi. With such a background

of positive activist movements that happened across the world, the children of Ramdwari also started to raise their voice for their own rights. Among other things, they made slogans, depicted stories through their local Chikan-kaarigiri art and held silent demonstrations. It was the beginning of a big change towards innovation. The students researched on local practices and objects (like umbrella, bicycle, hand-pump, bamboo basket), studied various concepts associated with them, made prototypes of grass-root solutions to solve local problems which can be implemented in the community.

Some of the examples of educational experience are as follows in which the intent is to nurture socio-scientific temper through contextual and cultural maker spaces.



1. Learning about constellations through Umbrella : It is a local object which children in the community explored to understand the mechanism of the same. They explored the principles of hydraulic pressure in operating an umbrella. While observing the clear night sky in the village and looking at stars and the moon, the children thought that can they depict the constellations on the umbrella. Stars and moon are quite important in the community practices as many of the festivals or traditions are dependent on their movement. The children tried, sewn the thread inside the umbrella and when they opened the same, constellations were quite visible. It made connections for a child building from their local practices and

linking to a more scientific knowledge giving importance to contextual and cultural making.



2. Understanding Intricacies of air pressure Hand-pump : It is also a local object in which intricacies of hand-pump were explored by children engaging with making a prototype of a hand-pump after observing it in detail. The children studied about the concepts related to crank, valve and washer by making the functioning of the same through contextual and cultural maker spaces. At the end the children applied the concepts in depicting a fictional story. By making the prototypes of mechanisms which were used in the working of hand-pump, the children could understand how so much water could come outside from the bottom of the earth.



3. Applying the principles of bicycle to solve grass-root problems : The children took apart the various parts of the bicycle and understood the mechanisms of the same. The children then researched various applications of bicycle which was in use in day-to-day life of the community and how it can be applied to solve the problems in the community. It led to children making a bicycle-enabled fodder cutting machine, cleaning garbage from the drains in the village to avoid flooding of roads during rains and umbrella on the top of the bicycle so that children could attend school during rains.

(Refer to the link : <https://bit.ly/2ZS3pd7>)

Conclusion

- Results

In summary, the contextual and cultural maker spaces in village Ramdwari has been able to provide the right stimulus to children and to the community for continuing with education and understanding the merits and relevance of the same. The girls are able to break the stereotypes by challenging the status quo by working in maker-spaces and pursuing higher education. It has been an important element that a village in which children used to hardly study beyond grade 5 are completing a minimum of grade 12 while inter-mixing the conceptual as well as hands-on knowledge and skills. The children started to value the knowledge in their local traditional art, craft, practices and objects and linking the same to build a far greater and deeper understanding of the concepts.

The experience of working with children was full of learning as lot of places as an educator one finds to be without answers and it is through continuous exploration, trying out newer solutions that one gets to understand the things more deeply. The most fascinating part is that the path is not frozen but one has to carve out its own looking at different perspectives. We would like to involve more of adult community members in the contextual and cultural maker spaces so that there is deeper amalgamation of traditional knowledge with the newer generation. The community members have been able to understand the merits of education which led to girls not getting married at the age of 12-13 years while were allowed to pursue higher education. The boys who were asked to migrate to bigger cities now are completing their education.

- Broader Value

Now, over the years, what we have seen is evolution of new learning models nurturing socio-scientific temper in the community emanating from local practices and traditions, local research, building up of conceptual understanding through contextual and cultural maker spaces and applying the knowledge and skills to further delve on the same as well as solve some of the grass-root challenges moving towards social justice and equity.

The knowledge of marginalised communities were not given due preference and recognition and due to this they themselves do not understand the worth of it. This new learning model helped children and community in understanding the worth of their own traditional knowledge. It helped to understand various concepts and principles through their community knowledge and expand it further in creating new knowledge.

Additionally, I would like to share that resources are never a constraint in the rural learning community, in-fact they have the maximum in terms of contextual material and cultural know-how. We tried to build from the local practices, objects and environment through a contextual and cultural maker spaces in which the solutions are co-created which led to greater acceptability and its implementation. One of the key learnings of contextual and cultural maker spaces is children co-owning the space and driving lot of innovation projects in which we acted as facilitator in the learning process.

- Relevance to Theme

Our work revolves around contextual and cultural maker space which lies in the theme of 'Maker Pedagogy' and the relevant topic is 'New learning model'.