

How FabLearn changed my perspective towards involvement of technology in the maker space

Ridhi Aggarwal, FabLearn Fellow

In a contextual and cultural maker space our focus has been to use contextual material and how children can re-build it, iterate with it to construct new knowledge. Some 3-4 years back, in the name of technology, only mobile phones have penetrated the place where we were working and that too not every household possesses it. So no-tech or low-tech was the basis of our philosophy to operate in that village.

We also thought that introduction of technology generally brings in a lot of aspiration and alienation among adolescents and youth. The research also talks about the ill-effects of technology as to how people get detached from their roots and doesn't give due importance to the context, ecology and relationships. Technology is seen as a factor of consumerism as compared to a tool for creation which has resulted in educators like us to be a bit apprehensive about its use. It also got reiterated from our association with 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.

Being a part of the FabLearn Fellowship by Columbia University has given me new perspectives to reflect upon. On one hand I have been exposed to the exciting work of other maker educators from around the world and on the other hand knowing about the great thinker and educator Seymour Papert has opened up new horizons in our work.

As Papert criticised the usual paradigm about the use of computers in education. In one of the classical use is where computer automatically adjusts the next problem being presented to the user based on how accurately one has answered the previous question. Papert views these programs as glorified personalised worksheets that fail to capitalise on the unique power of computers. And this glorification was the fear which would addict the children and attract them towards them but would not really make them think. Papert deliberately sought not to build computer programs that aim to get students to do something specific like solving math problems or repeatedly practice a particular concept. Rather, he viewed computers as tools that should empower children to explore topics meaningful to them. Papert believed computers could uniquely help students develop a deeper and a more intuitive understanding of mathematics that no previous tool could.

For his vision, he created Logo in which users create on-screen geometric patterns and simulations by giving programmed instructions to a "turtle" icon on the screen. This gives students concrete opportunities to practice usually abstract mathematical and problem-solving skills. This idea of using computers as a tool to enable children thinking and making with it in addition enhancing one's own mathematics skills gave us the starting point to introduce computers but we had to find a common ground to start.

Mathematics was that common ground as the communities rich knowledge base in chikan kaarigari embroidery which focuses on patterns actually served as a link between contextual knowledge and Logo turtle. We had often used their embroidery as a base to introduce patterns to the children but this time we integrated that with Logo turtle. We asked them to make some patterns, explore for themselves and then make new patterns from their own exploration.

Constructionist learning focuses as much on the process of making as in the end result of it. Children not only tried out new patterns on Logo but they also translated them in their embroidery and showed it to their parents and community which gave their art a new dimension. This is how we started opening doors for introduction of computers and technology into our maker space. And now slowly and steadily we have started taking small steps by introducing Arduino and ways to integrate technology in our context. Going further as our community is rich in art and craft forms we

started to think how can we integrate technology and maker space part in enhancing the craft forms.

At this stage another FabLearn webinar with James Rutter from Haystack Mountain School of Craft gave insight as to how maker space can be well integrated with art and crafts. An example that stayed with me was how in a jewellery designing workshop a person had to turn the coils many a times to make a particular piece of jewellery and how that person thought of making a module with 3D printer so as to ease the process of making jewellery. A beautiful example of how maker-space can be an integral part of an art and craft space.

These inputs from the FabLearn community gave our maker-space a new vigour to integrate technology with the rich traditional art and craft into our work keeping our values intact all the time.