



## Where Children Construct Knowledge

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***For education to be liberating, learners have to be active subjects not passive objects as in the present education system - Paulo Friere***

Work is inextricably linked to learning. If our education system pretends to have something to do with learning (not just creating a work force for industry) then it has to incorporate work in its curriculum. It is a must.

It should be very clear that work in education has nothing to do with vocational training. This is just skill acquisition which most people in vocations learn on the job.

We are sharing an example of a malnutrition study which lingered into bio-diversity, impact of market on nutrition, etc. The study was done by middle school children and won the first prize at the state level of National Children Science Congress.

At one point, for two reasons we were desperate to have a doctor associated with the school. One, our idea of the Adharshila Learning Centre was of a place where we indulge in activities going on around us in villages and those which we thought were needed or which the children wanted. Two, we wanted to link our educational activities to other related fields. Malnutrition in children was one important theme.



After informal surveys of children coming to our school, we realised that many children had suffered malnutrition or some prolonged disease in early childhood. Also we know from our experience that during pregnancy, mothers almost never get any extra diet. In fact they don't want to eat more as they fear that a bigger body will create difficulties at delivery. And of course government statistics tell us that more than half the children suffer from malnutrition. We realised that malnutrition in children and pregnant mothers had a direct bearing on the academic and other capabilities of children and hence the importance.

Finally we got an Ayurvedic doctor who actually knew how to make some interesting things like Ayurvedic tooth paste, balm etc., which he taught the children. We devised a programme to check out the health of children in the surrounding villages. In a few classroom sessions the children learnt to identify malnutrition not just by height and weight but by looking at skin, hair, nails, eyes, swelling etc.

Teams of children went around in surrounding villages, looking at children and tabulated the information and found the number of children suffering from varying degrees of malnutrition – Grade I to Grade IV in official parlance.



Now the question was – what to do about it? Two suggestions came up:

One was to make a supplement to give to the malnourished children. Most probably this was influenced by the sattu – provided in schools in lieu of mid-day meals.

The other suggestion was to motivate children to go to the hospital. At that time there was a scheme where severely malnourished children were admitted to the hospital and the attendant was to be paid a minimum wage.

The supplement was well received but, while some families bought it they found it expensive as all the children in the house would eat it. Almost nobody went to the hospital.

The doctor on his own initiative put the news of the survey in the newspapers. As malnutrition deaths are a very serious matter, the administration responded by sending a big district level team of doctors to hold a health camp in a nearby village.

Next year, while doing a science project, some children were surprised to know that malnutrition was so rampant. They were under the impression that theirs was a modern farming area. People were using hybrid seeds, chemical fertilizers and pesticides. They were selling tractor loads of cotton and soyabean. The children also had the impression that people were well off in the area. There were many motorcycles, tubewells, motor pumps in the village. Many people were in some job or the other. So how come there was malnutrition amidst seeming prosperity?

So they set out to explore what the people were

eating. They were also asked to interview elders in the village to find out what they used to eat when they were young.

The children interviewed more than twenty older men and women and listed 130 food items between them. These included absolute delicacies ranging from varieties of mushrooms, leaves, flowers, tubers, seeds of plants, rare fruits from the forest, three or four varieties of honey and many resins/gums, exotic meats and fish, crabs. Almost 70% of the items came from the forest and river. The farm food crops were also full of diversity. The children listed and collected seeds of more than eleven varieties of jowar (sorghum) and at least five or six types of grains. Hey! We forgot the milk products. Those who had cattle had abundance of milk, curd and ghee. Those who didn't, at least got free buttermilk.

Basically we learnt that the loss of bio-diversity in farms and total depletion of forests had a very strong connection to loss of variety of food.

Now the children next examined the reasons for the loss of forests and farm diversity.

Once again they came up with stories of how deforestation took place when contractors came in trucks. The people worked to cut the trees for 25 paise a day. They also heard 'once upon a time' stories, when people never needed to go to the market except to buy salt and later for kerosene (previously they burnt castor oil, which they themselves extracted). And they told this with great pride. Gradually people were taught to buy things – for example, bidis – distributed free in weekly markets, urea – literally thrown by the local traders, black tea offered free after a long trek from the mountains.

This has led to the people becoming so dependent on the market and credit system that they are forced to do farming for cash. This has resulted in displacement of food crops by seemingly more profitable cash crops. The best lands previously reserved for maize and jowar was now taken over by cotton and soyabean. Food crops were shifted to low quality land. Oilseeds have almost vanished. There is hardly any diversity of crops in the farm.

The whole exploratory process gave the children

new insights and some ideas were fixed in their minds. This study was selected to participate in the National Children's Science Congress. The chief guest at the National Science Congress was Prof. APJ Kalam. From the dais, he was explaining the benefits of bio-diesel, from both the environmental and farmers' viewpoints. While examining the project, the judge asked the students how they justified their anti-cash crop stand as Professor Kalam just said that "planting bio-diesel is more profitable for farmers." Without batting an eyelid Suresh, one of the participants, replied that the President doesn't know about farming. If farmers start planting plants for biodiesel they will die of hunger and become totally dependent for food on the market! The judges had never thought that they could critically look at someone of the stature of Professor Kalam.

The confidence of knowing something is a very big thing. We were all the more excited when we realised that studies by the Food and Agriculture Organisation and Dr. Vandana Shiva had also come to a similar conclusion of linking food insecurity with loss of biodiversity. But still the government programme to fight malnutrition is hooked only to mid-day meals and food supplements.

The findings from this health/local history research done by children was published as a small booklet titled – 'Khichdi biscuit ki behas ke aage', as at that time some MPs were lobbying in the parliament for a French biscuit to be given instead of cooked meals in the mid-day meal scheme as it supposedly contained all nutrients.

#### **But what did the children learn?**

Besides what the children learnt about malnutrition and its reasons and local history, there are subtle messages which they get. For one, all the data was collected through interviews of village elders. One of the learnings was that knowledge is not confined to books and the literate. 'Illiterate' adivasis too are knowledgeable. This is a big boost to confidence, especially for adivasi children as in the standard schooling they invariably end up with an inferiority complex about their society and culture.

Apart from that, they learnt to tabulate data and draw conclusions. A lot of basic math was done – percentages, averages, addition, division etc. Of

course they had a lot of practice in listening, writing, editing what they had written. Translating from the local language to Hindi was a big task. Presentation skills were developed, mainly making charts and reports and then explaining the charts to the audience.

You may be wondering what this narration of children's work has to do with 'Work and Education'. But it seems that this is Work and Education! We learnt that such work done by children classifies as Work and Education when we were told that one of our student projects of research on the theme of Famine was cited in the Work and Education Paper taken out by the NCF group.

So now we have learnt to narrate such projects when asked about Work and Education!!

#### **Conclusion**

There is a lot of learning happening when children explore things/issues in a free flowing manner which is the way learning happens in the normal course of life. Over time very few things are retained, most recede to back alleys of the brain. In this natural system of learning, we are never forced to quantify what or how much we learnt. But the problem with school curriculums is that they always want to quantify learning outcomes and judge children based on this. This creates tension in children and also teachers who engage children in such projects. So it was necessary for me too to write that they learnt Math, Hindi, tabulation etc.

This is, no doubt, a very nice and engaging way to learn, but sadly, mainly because of our exam-based evaluation system, most of our schools are not structured to handle this. Another limitation is how we view time. We are constantly worried about children 'wasting' time and hence trying to engage them in some meaningless activity or the other. Also we have to finish a list of topics in a given time frame. Learning is secondary.

If we really want to incorporate work as a way of learning then it will need a radical change in the system and structure of school and the mind-set of teachers. That it can be done has been demonstrated at Adharshila Learning Centre and many other innovative learning centres.



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