

Learning Over Education: Democratizing Education Through The Internet

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ABSTRACT

This paper describes the relevance of self-learning over school based structured education for the underprivileged children in India. The paper discusses the biggest hindrances in education for these children along with the shortcomings of traditional educational systems in meeting their knowledge requirements and how unstructured ways of learning instigated by the Internet are better equipped to fulfil their learning requirements.

Keywords

Literacy, education, learning, knowledge, India, Internet

1. INTRODUCTION- EDUCATION IN INDIA

Education is an essential tool for personal empowerment, eradicating poverty, curbing population growth, achieving gender equality and ensuring sustainable development, peace and democracy. [1] In spite of tremendous efforts from the government and non-government organizations, India's literacy rate is still 74.04 % [2] as compared to 99% of that of Sweden [3]. Even though the country has seen a rise in student enrolment, the quality of education and learning outcome has gone down significantly. [4]

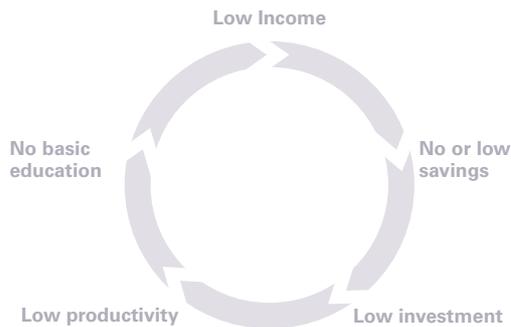


Figure 1. Vicious poverty loop [5]

Poverty and education are closely linked to each other in a vicious loop (see Figure 1). The existing educational model and traditional resources have been unable to help economically underprivileged children break away from this loop due to many reasons (analysed in section 2).

On one hand, the country is struggling to meet the basic educational needs and on the other is seeing a tremendous growth in information technology infrastructure and the use of internet and smart devices.

This paper attempts to analyse the problems in the existing educational set up in the country and explores the use of the Internet as a tool in overcoming some of these problems and in bridging this gap in knowledge deficit and its accessibility. Use of the Internet as a knowledge gathering medium gives rise to an interesting argument between learning and education, which is also discussed in this paper in context of economically backward children and young adults in India.

2. PROBLEM ANALYSIS

2.1. Research Methods

Qualitative research was done to understand the information and educational requirements of 13 to 25 year olds with household income of less than \$300 per month. The study also inquired into the shortcomings of the existing schooling model in meeting their educational needs. Along with primary research, a range of published literature in the field of education and use of the Internet in education were reviewed. The primary research was conducted in first and second tier cities in India, (Ahmedabad, Bangalore, Delhi, Mumbai, Noida). These cities were chosen for their versatility of population since they attract high number of people from different parts of the country.

The ethnographic tools used for contextual research and information gathering were observations, direct interviews, surveys and immersion. [6][7] During ethnographic observation and immersion, time was spent with the target subjects to see and hear them in their own environments, at home and at work, to fully experience their daily lives as they went about it. It was crucial to be in the midst of the key sites and scenes of their lives in order to understand their constraints, what they found meaningful, experience the other little seemingly unimportant nuances of their lives and how they went about handling them. Direct interviews and surveys were done to gather factual information regarding the concerned topic.

The data gathered was analysed to find patterns in subjects's lives with regards to their information needs and their current ways

and challenges in meeting those requirements. Some of the key observations are mentioned in the next section.

2.2. Findings and Interpretations

The ethnographic and secondary research highlighted some key bottlenecks in the educational needs of the target subjects. Along with socio-economic factors, the traditional education system formed the backbone of majority of these causes. Few of the reasons were:

1. Poor or no access to educational institution.
2. High cost of good quality private schools.
3. Current forms of teaching, poor infrastructure, quality of education, redundant course structure makes education unattractive to them.
4. Massive gap in pupil to teacher ratio (1:42 in India as compared to 1: 10 in Sweden) [8]
5. Lot of children have to start working at a very early age to support their families, leaving no time to attend schools.
6. There is a huge gap between what is taught in schools and the knowledge these children need to survive in the real world. These children need specific skills in their field of work which is missing in the training they receive at school.
7. Cost and time spent in school doesn't have as much value as working in that time does.
8. Social systems make learning for young girls even more difficult. In a family, boy's education is given higher priority over a girl's. A girl's personal safety is another concern for not allowing her to go out and attend school. [9]
9. Parents themselves aren't well educated most of the times in this economic bracket, they don't understand the importance of sending their children to schools. [9]

The Indian government lays emphasis on primary education up to the age of fourteen years. The Indian government has also banned child labour in order to encourage more children to finish at least elementary school. These measures have however been largely unsuccessful in promoting basic education, as these laws haven't been strictly enforced.[10]

3. PROPOSED SOLUTION

3.1. Learning Over Education

The research analysis along with other issues highlighted the drawbacks of the standardised teaching structure of the existing education model. Broadly, almost all teaching-learning interactions can be classified as one of the following:

1. Those where the teacher or external resources determines the learning content and methodology.
2. Those where the teacher or external resources determines the learning, in consultation with the learners.
3. Those where the learners determine their own learning outcomes and how they will go about it.

The last mode of interaction encompasses the theory of constructivism. Constructivism theory talks about cognitive growth and learning. One of the foundational premises is that children actively construct their knowledge rather than simply absorbing ideas spoken to them by teachers. It posits that children actually invent their ideas. They assimilate new information to simple, preexisting notions and modify their understanding in light of new data. In the process, they gain complexity and power and with appropriate support they develop critical insight into how they think and what they know about the world. [11] The last mode of interaction is better suited to the earlier mentioned scenario where our learner needs specific working knowledge in a specific context more than generic theoretical education.

This methodology of education is hard to integrate in traditional schooling system due to the presence of great social diversity in India. Traditionally the Indian society was hierarchically arranged and the different communities and caste groups showed a pattern of social distance in which low caste, tribal and minority groups were discriminated against and looked down upon. Uniform and standardized learning resources help in bridging these differences and ensuring equal opportunity to all groups. [12]

An ideal sustainable self controlled model of learning in this context requires an alternative, independent platform for each individual learner.

3.2. Internet- The Free Virtual School

Internet is an omnipresent, vast resource of information, interaction and collaboration. It has the potential to negate most of the bottlenecks being faced in the course of learning by the target users. It has proven to be an excellent platform for contextual learning and has the flexibility to be used as either an assistive tool with the existing schooling system or as an independent education hub.

One of the most lucrative aspects of using the Internet as an educational resource is the fact that as a medium it has a very small learning curve to master, especially for the age group in discussion.

The same has been demonstrated by Hole-in-the-Wall project by Dr.Sugata Mitra. The central idea behind Hole-in-the-Wall is that groups of children learn on their own without any direct intervention. Dr.Sugata Mitra found that children using learning stations (PCs connected to Internet buried in a wall) required little or no inputs from teachers and learnt on their own by the process of exploration, discovery and peer coaching. Hole-in-the-wall experiment revealed that underprivileged children, without any planned instructional intervention, achieved a certain level of computer literacy. They were able to self-instruct and obtain help from the environment when required. [13]



Figure 4. Hole-in-the-wall installation in Delhi, India

More popular One Laptop Per Child (OLPC) (see Figure 5) mission is based on similar fundamentals of joyful and self-empowered learning and has gone on to provide rugged, low-cost, low-power, connected laptops with specially designed content and software. [14]



Figure 5. School children with OLPC XO in Khairat, India (Photo credit: OLPC Project / CC By 2.0)

3.2.1 Advantages of the Internet as a School

3.2.1.1 Cost

Cost of education is one of the prime reasons why most of the kids drop out of school. They see more value in working on tea stalls, as day labourers or as domestic help where they can earn money. Internet being the source of learning transcends this problem by being virtually cost free. Though there are costs to be incurred on owning a device and accessing the Internet, there are several models already in practice that take away the cost burden from the learners themselves, OLPC, subsidized Aakash tablets & for profit NOKIA Life tools for examples.

3.2.1.2. Customizing of Content

As discussed before, the structured course content for all is of little relevance to these individual kids. Their own curiosity is their biggest motivation to learn and the Internet gives them the freedom

to customize their learning to their specific needs and questions. Their learning requirements could range from very basic life skills like counting currency or reading time to more academically inclined topics. A lot of these children are employed as helpers and skilled workers; Internet provides an excellent platform to build on their existing knowledge. Most of these kids grow up in difficult social settings, a lot of them with parents, family and friends who are incapable of satiating their curiosity of younger years.

3.2.1.3. Flexibility of Time

The Internet provides freedom to access information at any time convenient. It is not bound like the strict timings of school. Children can chose to learn whenever it is convenient for them, in between or after work or just when it is the right time to learn something.

3.2.1.4. Self Paced

Considering the diversity of social conditions in the country, backgrounds, caste and culture, it is unwise to assume that every student would grasp a new concept in the same amount of time. Schools put the additional pressure of time on learning and examinations, eventually heightening the fear of failure and leading to several psycho-social problems.

Input through the Internet is self regulated and as one controls the pace of learning, it becomes more comfortable and enjoyable to assimilate new ideas.

Salman Khan of the Khan Academy [15] has adopted a similar model. Khan Academy today is the largest free source of educational tutorials. These close to 2100 You Tube videos (see Figure 6.) have been watched 41 million times, they demonstrate simple concepts in maths and science in unintimidating voice of Salman Khan himself. Learners can take their time and go through these videos as many times as they need to understand the concept and then work on exercises and track their progress through the website itself. These videos succeed in providing two most important components to learning, space and time.

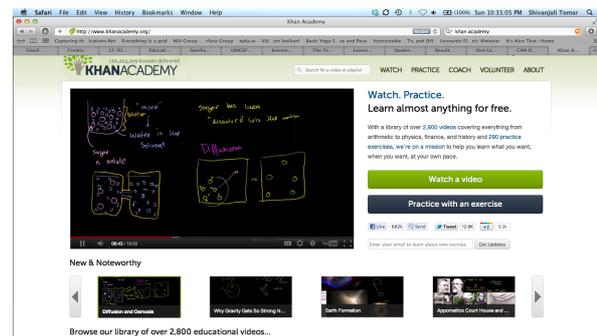


Figure 6. Khan Academy website

3.2.1.5. Interactivity

The Internet along with up-to-date information also provides it in different media. Different levels of interactivity with the same information give learning more flexibility. Inter-linked topics and related information are provided on the same platter, thus, broadening the scope of learning manifolds.

4. CONCLUSION

The Internet based approach to education comes with several challenges. Hardware cost for the Internet enabled devices is still high, though the government of India has announced subsidized \$35 Aakash tablet for students, it is still struggling to meet the technical specification at the time of writing this paper. Recurring cost of broadband usage is still unaffordable by a large section of this economic segment.

India has 216 different languages, which makes mass accessibility of information a concern.

The Internet provides a bright hope for democratizing education for masses across the globe and across economic segments. It shifts the paradigm of learning by taking the onus of teaching from educators to making it the onus of students to learn. (see Figure 7.) It is a tool that can be exploited for eradicating illiteracy which will significantly help in solving some of the biggest issues the country is facing today with population growth, poverty and gender inequality.

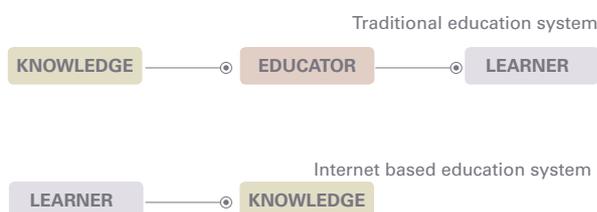


Figure 7. Shift in education paradigm

Knowledge and skill sharing culture has established itself well on the Internet and it now opens up plethora of areas for further investigation. One of the key concerns in the future would be to develop models to successfully integrate the Internet with existing learning spaces or to look into scenarios where the Internet technology would eventually replace physical classrooms as the main point of interaction.

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