

# ICT based learning strategies for Educating nomads

Yogesh Kulkarni

Vigyan Ashram ( Indian Institute Of Education), Pune, MS, India  
[vashram@vsnl.com](mailto:vashram@vsnl.com)

Dr.Madhav Gaikwad

K.T.H.M. College, Nashik , MS, India  
[mggnsk@gmail.com](mailto:mggnsk@gmail.com)

## Abstract

Nomads all over the world have a glorious past. About 6% of Indian population is nomadic. Large numbers of children never go to school. Educating nomads and settling them in alternative vocation is needed to bring them into the main stream. Much is said on this on various platforms but with very little is done in this direction.

The author and his team in collaboration with KReSIT, IIT-Bombay are trying to evolve a learning methodology for the nomadic children. This paper describes an attempt to find an “out of box” solution to the problem of educating nomads. The new, developing ICT technology provides hope to provide quality education to nomadic students within their life style, at the place of their stay and time of their choice. The author is working with four tribes in Maharashtra.

Wandering Schools were started with the following four tribes:

1. Medhangi Jogi: Fortune teller, who tells the fortune using holy bull.
2. Masan Jogi: Tribes which stay near crematorium and survive on the offerings made on the dead bodies.
3. Paradhi: They are hunters. Also labeled as criminal tribes.
4. Gopal: They perform various physical exercises.

A model based on solar powered laptops for nomadic schools is being tried. Several available multimedia contents were collected and instructions are given to the students using multimedia. It is observed that a combination of educational strategies, including that of ICT's, will be useful in educating nomads.

Some more time and work is needed to comment and describe the results and propose a model for the future. However, initial test gives assurance that efforts will bring fruit.

**Key words:** nomads, ICT in education, wandering school, life skills education,

## 1. Introduction

Nomadic people are found all over the world. They move in a caravan from place to place in order to earn their living. 'Athapaskans' tribes in United States, 'Awa' in Brazil, 'Rom and Sami' from Europe, 'Baka, Bamuti' from South Africa, 'Chukchi' from Russia are part of the same story[1].

The Nomadic and Denotified tribes constitute a 60 million population all over India. There are over 200 tribes of pastoral nomads (they breed and herd cattle, pig, camels and other animals), and more than 300 tribes are of non-pastoral nomads[2]. Non pastoral nomads visit the village from time to time and offer essential services such as selling utensils, medicine, provide entertainment etc. Though they were an integral part of the society in the past, there is no demand for their traditional jobs in modern society. It is necessary to give the nomads alternative skills for bringing them into the main stream of the society.

Education plays a very important role in transforming the life of nomads. Government and various organizations started boarding schools (Ashram Shala) for nomadic children. Still, large numbers of students from these tribes are out of schools for a variety of reasons.

This paper describes an attempt to find an "out of box" solution to the problem of educating nomads. The new, developing ICT technology provides hope to provide quality education to nomadic students within their life style, at the place of their stay and time of their choice.

## 2. Educational problems with nomads

Dr. Radhakrishnan [3] says, "If you think that poverty is the main reason for these children being out of school and working or eking out a living, by picking rags, begging or stealing, I must warn you that your thinking is the result of your tendency to look for easy escape routes to wriggle out of problem situations, without attempting to solve them".

We must therefore try to understand problems of nomads with current educational systems.

- i. Formal education system is highly academic and teacher centric. There is a huge rift between the culture of the school and that of the nomads.
- ii. Those who are educated fail to get jobs. Failure of educated youth in getting jobs, is the biggest disincentive to the parents as educated unemployed youth are not ready to do traditional jobs.
- iii. To stay in a boarding school, students have to live away from the parents. It is difficult for parents to keep these children away for financial reasons.
- iv. Nomadic people have traditional wisdom - we need to recognize and use it in designing educational curricula for them. Our approach should be "What you know, teach; what you do not know, learn." Present curricula lack this.

- v. While educating these tribes, we need to focus beyond mere literacy and give training in life skills relevant to them.
- vi. Due to social stigma attached to the children, teachers often discriminate with nomadic children, which results in increase of student drop out.
- vii. Child labor is the main problem in a nomadic community. They are used for begging, performing physical exercises, cattle rearing etc. Sending children to boarding school means loss of income for parents. And when there is a daily question of survival, education always gets a backseat. Children will be allowed schooling only if they help their parents in earning their daily bread and learn in their spare time, at their residence. So there is a need of **wandering schools** where school will move with the nomads. We believe educating nomads is possible only through somebody from their community who stays with them in their life style and helps them to learn educational & life skills.

Some experiments were done [4] in the past to provide non formal modes of education for such disadvantaged children. But critics argue against it as parallel second-class education.

Mayer's[5-6] research shows that students ability to "transfer" information that had been presented to them in multimedia style showed "whopping 89 percent improvement in performance over traditional book-based methods". Sugata Mitra of NIIT [7] found in his "Hole in the wall" program that children using ICT based learning, required little or no inputs from teachers and learnt on their own by the process of exploration, discovery and peer coaching.

It has been observed that ICT is proved to be an effective tool in providing uniform quality of instruction. To solve the age old problem of nomadic education, an attempt is being made to see if ICT can provide some opportunity and solution?

### 3. The Present Experiment

The present education system focuses more on memorization and retention skills. Students get the information but very little of this knowledge is used for application in real life situations. To effectively train nomads, emphasis must be given on the life skills. "Life skills are the skills that people need to build a sustainable livelihood and to fully participate in society"[8].

We firmly believe that nomads could be educated only and only if,

- School stays and moves with them
- Teacher is one of them
- Does not hinder earning of their daily lively hood.
- Understands their capabilities and improves on them

The author is working with four nomadic tribes in Maharashtra. A wandering school was started in February 2005 and different educational strategies are being tried out to educate the nomadic children. Wandering Schools were started with the following four tribes:

1. Medhangi Jogi: Fortune teller, who tells the fortune using holy bull.
2. Masan Jogi: Tribes which stay near crematorium and survive on the offering made on the dead bodies.
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Age of group of students varies from 3 to 12 years. A school is conducted every day in a tent located near their residence, at a time convenient to the students. *An Instructor is selected from the same community, who stays with them.* An instructor is given a formal training on how to co-ordinate, teach, communicate etc. The author and his team visit the camp regularly and give instructions using multimedia. Several available multimedia contents were collected and instructions are given to the students using multimedia. Regular meetings, demonstrations and training for instructors are organized by the author.

The following subjects are selected for instruction:

1. Language
2. Mathematics
3. Science (Environment studies)
4. Arts and Vocational Skills
5. General studies (Health, Superstition, Information about their rights,
6. Personality development, communication skills,
7. Understanding and reacting to State and Central Government Scheme etc.

The following educational strategies are being tried out during the studies:

1. Instructor led
2. Using various educational games
3. Instruction using multimedia
4. Anchored instruction using video

**Instructor led:** The author with his team conducts training program for all the instructors. They were asked to conduct the classes in traditional way. Local government text books are used for training.

**Use of educational games:** Various educational games made from card board sheets and locally available materials such as sticks, seeds, empty match boxes were given to instructors.

**Instruction using multimedia:** Various educational CD ROMs, available in the open market and specially developed for this purpose are shown to students. Especially CDs on nursery rhymes, alphabets, numbers and stories were shown.

**Anchored instruction using video:** Video shoot of the surrounding areas of nomadic camp is carried out. The same is shown on the computer to students

who are asked several questions about their surroundings: identifying colors and objects; counting things; camera focused on wrong practices in the camp like unclean pots, dogs drinking the same water as people, children relieving themselves near kitchens; etc. Children are asked to comment on the video and discussion is led to logical conclusion. Video from one camp was shown to other camps.

It was observed that response from children to all the methods is encouraging. It will be wrong to say, any one of the methods is effective. Games and instructor led instruction has its own place. For example for conducting daily exercises, games and prayer, presence of instructor is needed. Instructors also ensure the children took a bath, cut their nails etc. Educational games engage the children and give them satisfaction of “Learning while doing”. They can play with the educational games. As said earlier, most of the games were made from local available material hence they can break it and play with it.

The computer has its own glamour. Students are able to easily handle the computer and also lead the lesson themselves. Children on their own come to the class, once the multimedia lesson is started. For instructor led classes, we need to forcefully bring them to the class. Multimedia content is useful for giving them various experiences such as showing them an unseen thing. Children in Magarsangavi had never seen the “sea”.

TCS [9] found that Multimedia instruction can teach adult illiterates in 30hrs of computer instructions. Computers in nomadic camps can be used for adult education. Child marriages are common in these societies, mainly for security of the girl child. Cases of AIDs are on the rise. It is necessary to train people on avoiding early pregnancy. It is difficult for male instructors to give training to closed society like this. But using multimedia and video may send the proper message without hurting social norms.

Government boarding schools are unable to attract and retain nomadic children. A regular syllabus is given through these schools. Government and NGOs are starting a non-formal education center at various places. Wandering schools on the nomadic camp will help in enrolling all children’s in the school. The school employs one teacher, who is often educated up to Xth class. Instructors are provided with short term training. It is observed that very often he is unable to deal with multi-grade class and social problems.

A look at a following table may reveal certain facts.

*Comparison between different learning schools*

<b>Problem</b>	<b>Boarding School</b>	<b>Non-formal School</b>	<b>ICT Based Wandering school</b>
Wandering Life Style	Student stays away from home	School on nomadic camp	School on nomadic camp
Discrimination from teacher	Possible	Learning in their own environment	Learning in their own environment
Learner centered Education	Motivation of teacher	Multi-grade	Possible
Quality Education	Motivation of teacher	Motivation and quality of a teacher	Possible
Topics on Health, Superstition, Awareness of Rights	Motivation of teacher	Instructor may not be able to handle tricky topics	Possible with the help of ICT

#### **4. The Model**

We have given one laptop per nomadic camp. There are 20-30 children per camp. Since no electricity is available on the camp, we have provided power using a solar panel that charges the laptop battery and also serves as power storage. A 37 Watt solar panel fitted with 12V, 40 Amps battery gives 500W storage. We are thinking of adding additional batteries for additional backup. Laptops consume only 15-20 Watt power.

Educational contents for various educational levels are preloaded on the laptop. Additional content on life skills and on taking care of specific needs of the nomads is planned. 3 students are using the laptop at a time, 1.5 hrs a day. An instructor is a facilitator whose job is to ensure that students are using the right lesson and keep the system working. One laptop can take care of varied educational needs of the multigrade and varied age group of students.

#### **5. Observations and Conclusions**

To cater to educational problems of nomads and for other disadvantaged groups, ICT can provide the answer. A computer symbolizes the modern tool and being able to operate them gives a sense of empowerment. This is very important for group suppressed for a long time. It seems feasible to develop educational strategies for educating nomads by combining modern tools like ICTs.

ICT is effective in handling issues such as health and adult education. A para-teacher is not fully equipped to handle such issues in a society like nomads. With the help of media, instructions can be planned with the help of experts. The role of the instructor remains that of a facilitator and minimum quality of instruction can be ensured.

Some more time and work is needed to comment, describe the results and propose a model for future use.

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