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## INDIA'S RURAL EDUCATION DEVELOPMENT

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**Abstract** - India is one of the biggest countries in the world and the second largest in terms of population. It is an agricultural country, where the biggest fraction of the population lives in the villages. In terms of education it comes at the 168<sup>th</sup> position in the world, which is quite disgraceful. The ratio of the population living in the cities and villages in India is approximately 28:72 but the literacy rate in the villages is very poor. Nowadays when our country is running and trying to establish itself as a superpower, it necessitates the awareness of modern technology and skilled people with innovative ideas. This idea highly requires educational development to be successful. In this paper the process, progress, challenges and traits are briefly discussed and focus is on the usefulness of the internet for rural educational developments.

**Keywords-** Education, Internet, Rural Area

### I. INTRODUCTION

Education is the most primary factor for the development of any country. It plays the role of a bridge between the cultural tradition and modern development. It helps to understand the current trends and scientific developments going on in the world. Literacy is also one of the indicators for economic development. Therefore, we must understand the importance and implementation of education and its role in carving the future of the Indian youth. The literacy rate in India is not so good. Also, there are many challenges to improve it; such as lack of infrastructure, transport facilities and study materials.

As the main occupation of our country is cultivation and almost 70% of the population lives in the villages, it is highly required to improve the basic amenity in these rural areas. To train young India it is important to improve the education sector in rural areas of the country. This can be done by civilizing rural people for their basic needs. But there is a problem with infrastructure in rural areas. Basic requirements needed for basic education are poorly developed. Scarcity of class rooms results in open air classes which pose a big threat in summer and rainy season. Absence of toilets results in sanitation problems, thus resulting in health issues. Many of the villages do not have their own school within the village area and hence the students need to go to the nearby villages or cities for their education purpose. Due to lack of transportation and text book facilities, many of the students have to leave their study in the middle.

### II. ROLE OF INTERNET IN EDUCATION

To raise the percentage of literacy, it is highly required to develop an effective education system in rural areas. As the internet is the most effective and rapidly growing medium, it can be used as a solution. These networks play a vital role in many aspects such as education, sharing information, searching employment, social awareness etc. Nowadays, the rate of information technology related business in India rises rapidly. More than 9000 internet centers are established with uninterrupted networks for providing the services such as one way or two-way communication. But only few people access these facilities and have internet connection at their residences due to lack of information/knowledge. Also, a huge part of our population is unaware about other benefits of the internet networks such as educational tutorials, searching jobs, extending business etc. In the rural areas, the scenario is more inadequate. Due to lack of literacy and education, rural India is lagging in development. Therefore, it is highly necessary to support these areas for spreading the resources to develop their living standard such as ICT and wireless infrastructure. These types of infrastructure are very useful to raise the awareness and educational graph. Some of the used technologies are:

### A. ICT

Information and Communication Technology (ICT) is an education development strategy. There are many areas in India where children cannot get basic education because of personal barriers. To overcome such an issue ICT can be helpful as it is a mode of distance education. It also reduces the cost of education that in turn the student family has to bear because it reduces the cost of school infrastructure, salary of teachers at the cost of internet and device (mobile, laptop). Internet technologies are advancing day by day with greater coverage area and increased speed. Advanced internet tools like virtualization, cloud computing technologies and Moodle can be used as on demand services anywhere across the country and at any time according to your choice and comfort.

### B. Cloud Computing

Today is an era of cloud computing. This technology is a boom in the field of education. It is a technology that increases computing capacity with existing infrastructure. We can store any type of data on cloud that can be stored for many years online. Statistics says that in the year 2008 192 schools are using cloud computing technology around the capital city of India and the Ministry of Education has planned to expand this service to reach an additional 350 schools.

### C. Moodle

Moodle stands for Modular Object-Oriented Dynamic Learning Environment. It is an online learning service for internet based courses. It provides online courses with a credit based system. It includes all the basic features required to understand a subject like: Assignment submission, Discussion forum, Files downloading, Grading, Moodle instant messages, on-line calendar, on-line news etc.

### D. Wikis

Wikis are open source data available to anyone anywhere at the mere cost of the internet. It is easy to understand the concepts, technology behind science with the help of demo videos available at wiki. Furthermore wiki has an additional feature which provides an opportunity to anyone to edit the information content. Thus any one can share his/her knowledge which can then be available to others.

### E. Online Media

Various online media are there which can provide video, image or database information on any of the topics you can think of. Visual presentation and audio sound leave a long lasting impression on our mind as compared to theoretical concepts. Thus things have better clarity than in the previous era.

## III. CHALLENGES

In spite of these technologies, the education in rural areas is not as high as expected. The planning and implementation of the system and technology is crucial and various challenges need to be sorted out. At first the people aren't aware about these technologies and also their status and conditions are not supporting. Many of the basic and infrastructure related issues are also there. Some of the major obstruction are listed and discussed here:

### A. Unawareness

Unawareness is the biggest obstacle to spreading anything. In rural areas, most of the people don't know the benefits and uses of internet technology. They have no idea how much it is helpful for education and other facilities. Nowadays, the government has started several programs to attract the attention of the rural people towards it. These programs need to be implemented in a right manner to encounter this major challenge and establish a fruitful scenario.

### B. Poverty

Rural areas would have a high concentration of poverty. Apart from farming there is hardly another source of income. In India, the condition of the farmer is not good. Generally, they lie below the poverty line. At this condition they are highly worried about their basic needs and don't attribute any attention towards the other things. They are not ready to invest or spend their money/time on these technologies, which is not a suitable situation for other concerns to invest there.

### C. Lack of basic infrastructure

Acquisition of land is a major problem to stabilize the system of wireless network as agriculture is the major productive asset in rural areas. Also many other facilities, which are highly required to stabilize the system, are lagging. Handiness of equipment or parts, transportation and mainly uninterrupted electricity is extremely needed to stabilize the system and make it efficient.

#### D. Improper planning and goals

The government has been doing its own evaluations; conducted through external agencies without considering any ritualistic and social studies. Policies are made on their recommendations and have been pursued with effect. Due to this, by the time of the implementation of a certain scheme, the scenario is really different at the ground level with the projected one in the scheme. This difference made its adverse effects on the program and is the sole reason for the failure of the entire project. These failures demotivate the agencies along with the rural people to tend towards these types of programs. Again the next program gets launched afresh, without taking any reference and lessons from the previous program and sets high projected goals at its end.

To overcome these earlier discussed constraints and ultimately enhance the literacy rate, it necessitates implementing simpler learning methods. Approaches, which are more user-friendly and have capacity to reach to mass, need to be implemented. Learning methods are highly helpful to attract people towards education, in turn improving the literacy rate. Some easily available/implemented learning methods are listed below to meet the expected literacy rate.

1. Village knowledge centers
2. E-learning centers
3. Open universities and distance learning

#### IV. ONLINE LEARNING ACTIVITIES

All of these approaches need an efficient medium to interact. Among the various mediums, the internet is the best one due to its ability to connect worldwide anywhere and anytime. Also, there are plenty of study materials available there which are easily accessible.

To establish the internet, two approaches can be used: wired network and wireless network. In wired networks, the connection is established through the phone line or local area network (LAN) connection. It is a static/fixed connection facility, whereas the wireless network is easy to establish and reachable as compared to wired networks. Here, the requirement of the fixed center/station is not necessary and one can easily access the facilities with a moving device and condition. In other words, wireless networks support portability, which in turn allows greater flexibility. Apart from its mobility, the wireless networking provides several advantages over wired network such as:

- Wireless networking systems establishment needs enormous amounts at the beginning. Cost is one of the most prominent obstacles in the path of implementing this facility. Huge amount of money is required for implementation, operational and evolutionary tasks. Stabilization of wireless networks cannot be done by one person, it needs support from the government or sponsors.
- Rural areas have a widely scattered population. To connect such a type of population with a wire network is a tough task. Thus using wireless networks saves high cabling cost.
- Sometimes it becomes a really tough job to install a wired network. Such sites are known as difficult-to-wire sites. One of the examples of such sites is a village surrounded by mountains from all sides.
- Installation of wired networks is a time consuming task, whereas wireless networks can be installed in a day or two.
- Wired networks are more prone to breakdown or down time because of fault in cables. Thus wireless networks have enhanced reliability over wired networks.

#### V. BENEFITS OF INTERNET ACCESS

Access to the internet is a boom for students of rural areas. They could use the video conferencing application to solve their doubts across the country. Many educational programs, even on farming, are telecasted on the internet. Such programs can be easily implemented by viewing corresponding videos. Internet telephony services like Voice over Internet Protocol (VoIP) can also be used to connect to far peoples or friends. Improved communication is helpful to spread education/knowledge, which in turn enhances the awareness and lifestyle of the people, supporting the remote areas and bringing it under the mainstream of the world.

#### VI. SET-BACKS IN RURAL AREAS TO BE WIRELESS

In India many rural areas are still without wireless access and this is simply due to lack of technology. The major issues are regarding distance and investment. The residences are tens of miles apart and highly sparse. Due to this the signal propagating to each home is very difficult and costly. Therefore, companies don't seem it fruitful to invest needed money for the establishment and supply of internet services. Apart from these in rural areas the land acquisition is the biggest challenge. People aren't aware of the advantages of this technology and are not ready to give up their land for the implantation and installation of towers, as their prime source of income is farming. Due to this, the private sectors/government agencies have to face a lot of difficulties to establish the network and they lose their interest to do the same. Also, it is not easy to establish a wireless networking system by one alone due to the high establishment cost. Therefore, it is mandatory to make them aware and understand about the merits of wireless technology and ready to support the stabilization of wireless networks, which can be used for their own advancement and upgraded lifestyle. Lack of electricity is also a major setback, as the system continuously needs power to run. In absence of electricity, batteries or generators can be used, which

again makes a huge cost difference. There is also a need to upgrade the transportation facility and make the availability of equipment parts nearby to prevent or fix the system failure situations.

## VII. CHANGING SCENARIO

Rural development implies both economic development of the people and social transformation. The Indian government implemented various plans/schemes to make the people not only educated but aware about the recent technology and skilled on one or some of them with the help of internet connectivity. There are several projects/cases where these types of planning are established. One of the case scenarios is implemented in Maharashtra. The process and infrastructure of this project is briefly discussed below:

In Jalgoan district located in Maharashtra state, the WIMAX interconnectivity is established between the District Headquarters (DHQ) and 15 Taluka Headquarters (THQ) for enabling them to access the information. A Gram-panchayat Knowledge Center (GKC) has also been established by the gram-panchayat to coordinate between the rural citizens, DHQ and THQ using WIMAX technology and ensure the availability of the public services in all sectors and everyone could reach for it. Through this particular program the WIMAX model and e-governance models are designed and implemented to increase the living standard of rural people. Some other additional steps are also taken to make this program a grand success such as to spread the awareness among the people about the benefits of using the GKC functionality and trained them to run the WIMAX centers, the THQ and DHQ also act together as a rural library, information Centre etc. and promote two way communications with GKC. The merits of this model are listed below:

1. Rural women folk would be empowered and enlightened on countless issues
2. Opportunities to be socially responsive.
3. Property transfer, tax rules, tourism and transport etc. will be easily known, accessed and paid.
4. Information regarding individual vaccination schedules for pregnant women and infants, family planning, medicines, ambulance services, blood bank, lifesaving drugs etc. will be spread and implemented easily.

## VIII. CONCLUSION

Rural education is a major setback in India and it is necessary to develop it. The Indian government has launched several schemes to improve the literacy rate in the rural areas. As the economic stability of the people in India is not appreciable especially in rural areas, it is necessary to implement inexpensive and efficient solutions for this. Here, the internet is one of the best options. It is not only economical among the available different solutions but also easy to reach and has tremendous facilities. It is helpful in education, skill improvement, awareness and transactions. It has the ability to break the barrier and enhance the quality of life of the rural people, in other means play its useful role in the development of the country.

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