Original Research Paper

Education

EDUROID : APPLICATION FOR QUALITY EDUCATION IN RURAL INDIA.

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ABSTRACT Eduroid a rural education application built to serve the purpose of education and improving its quality in Rural India.[1] According to the Annual Status of Education Report (ASER), the number of students going to school in rural India is increasing. However, more than 50% of the students in the 5th standard is not capable of reading a text book of 2nd standard. They do not know how to solve the basic mathematical problems. Hence, instead of focusing on uplifting literacy rate, it is the time that we focus on quality education. Children are required to be empowered with the equality education and knowledge that can be applied in their real life. The application aims on providing proper guidance to every student mainly focusing on their individual growth. Finding teachers nearby them not only save their resources from monetary aspects but also the time that they cannot put into studies as burdened with other chores and work load. Eduroid avails study materials to the students as per their age groups. Keeping the facilities of teachers in mind, Eduroid provides number of certified courses, beneficial for their further career. Since it is important for people in rural areas to walk hand in hand with the Government and the facilities introduced by them to help the rural people in the hardship of getting education, Eduroid has a portal for all the latest government schemes and loans for rural India building a direct bridge between government and people.

KEYWORDS : Elearning, Maps, India, Rural Education

INTRODUCTION
Technology is touching every aspect of society and changing it dramatically. But there is one very important and indispensable part of the society that has also been tapped by new innovations and discoveries and that is education. Like all other areas, in this case also urban areas are influenced to a greater extent than rural one.[2] Right to Education is the primary right of every citizen of India, whether a child resides in a high profile society or in a faraway not so developed secluded village, according to the Article 45 of Indian Constitution the basic elementary education must be provided to all the children up to the age of fourteen years.

Project Idea
[3]Most villages have poor connectivity from one place to another and that is often one of the main reason why, despite efforts by local governing bodies to build schools, often go in vain. Children, most of the time have to walk miles to reach these government funded schools and this often demotivate them to attend school on a regular basis. People belonging to remote rural areas have meagre incomes, which at times is too less to sustain a family of maybe four or five. Most likely, children from these families won't be sent to schools, instead would be asked to assist the earning member of the family to add up some extra income. Instead a solution can be build wherein the education of the children can be continued as per their flexibility under the proper guidance of a teacher who can reach them as per the convenience of both teacher & student.

The app 'EDUROID' shows and avails the teacher to the students, one nearby them for continuing their learning. Most of the schools don't have proper classrooms, teaching & learning equipment. 'EDUROID' supports E-Learning concept providing the necessary videos, books & other resources categorized into different age and class thereby ensuring that the knowledge and basic educational qualification matches with the standard qualification that child must have at his/her present age. Lack of accountability of teachers and school authorities has raised the rate of absenteeism. Moreover, non-teaching duties like election invigilation often keep teachers away from schools. Furthermore, teachers often have to report for duty far away from their home. With an inadequate transport system in rural India, the distance only adds to their woes and often results in absenteeism. A solution can be simply using QR codes for making a single teacher reach many students at a time from anywhere. QR can be used for tests or for anytime and anywhere quick learning acting as a full time lecture where a single QR will be generated by the teachers via app having a merge of video lectures along with suggested resources with it.

Helping teachers to share resources with the students more efficiently even in a low internet connection. Teachers are poorly paid as compared to the huge remuneration of a full-time Trained Graduate Teacher (TGT).Moreover, promising career prospects, which is quite a motivation booster, is almost nil for the non-permanent teachers. This leads to dissatisfaction, eventually resulting in a dearth of teachers because they move away to more permanent jobs. Thus using the predilection for certified courses nowadays can be used as a solution to this. Although there are a number of government welfare schemes that address these issues, they are often beyond the reach of those who need them the most .Also 'EDUROID' builds a bridge between people and government provisioned educational facilities.

REVIEW OF LITERATURE
Ms. Swati Yadav and Dr. Anshuja Tiwari has addressed the following issues in education of rural areas (2016): [4] Problems Faced in Rural Education in India
- Teachers of rural schools in villages and small towns receive low income so there is a possibility that teachers give less attention to children.
- Most of the schools do not have proper infrastructure. So they do not get most of the facilities such as computer education, sports education and extra-curricular activities.
- There are no proper transport facilities so children don't like to travel miles to come to school.
- There is no access to supplemental education.

Jineet Doshi has proposed solution in form of Information and Communication Technology (ICT) (2014) has become ubiquitous in today's world with an ever increasing adoption rate. [5]This paper showcases the promising results of an experiment done in some schools of rural India and the tremendous potential of ICT to help solve the problem of mass illiteracy. The proposed model is cost effective, robust, easily implementable and highly scalable. The system involved establishing a connected grid of tablet computers and MiFi devices, involving a local NGO, using the interactive software applications on these platforms which utilize the multimedia and interactive capabilities of the devices along with innovative fun based teaching techniques to help children learn effectively.

OBJECTIVE OF STUDY
The proposed system focuses on three main education depriving problems of rural areas and engenders the solution accordingly along with ease to access it.
1) To overcome distance problems by using maps for availing teachers to students nearby them.

2) To take care of resources for education of children using digitized method of QR and eLearning.

3) To keep teachers engaged and interested by providing useful certified courses as being a part of this noble cause.

4) To have people check on and apply to government education programs and getting required help.

RESEARCH DESIGN AND METHODOLOGY
The secondary data was collected through books, periodicals, journal and published material related Education of rural India for the study along with the preliminary surveys of stakeholders in rural schools.

Preliminary Survey
For solving the problems of rural education we have adopted qualitative approach in which we have analyzed different causes and effects of aspects influencing the education problems in rural places. This qualitative research involved interviews, persona creation and few market research analysis as mentioned below:

Few questions from Interviews of stakeholders conducted in schools of rural areas.

A] Parents
1) *How do you think that proper education will bring healthy change to your village?*
   In today's world every Individual should get proper education for betterment of his future & we have many dreams for our child which won't be possible without education.
2) *Is there any kind of assistance, provided by government?*
   We have filled few forms related to schemes. But no proper assistance have been provided to us from their side.
3) *How will video lectures help in increasing interest of students?*
   We actually have only one smartphone among us at home & we are not technically sound But video lectures can help because at time there are many students in the classroom and it becomes difficult for teachers to give them proper guidance individually.
4) *Any kinds of apps you have used before?*
   No we haven't been provided with any such hands on learning yet.
5) *Do your children share their progress report?*
   Our children only go to school for 2 days in a week and after returning back from they help us in our chores so we don't have any idea about their school reports on daily basis.
6) *How do you support you children's learning at home?*
   They do not really Study at home as they do not have the required resources to do so.

B] Students
1) *What subjects do you have? Do you attend school every day?*
   We have subjects like Maths, English and Hindi & we go 2-3 days in a week
2) *Do you understand everything that your teacher teaches you at school?*
   A few topics.
3) *Would you prefer learning by an app through videos or voice assistant?*
   Either is ok, but the main problem is internet.

C] Teachers
1) *Infrastructure for the students to study?*
   We have one school, where all the students of our village get their education. However to keep up with new syllabus we sometimes fell short on books and technology.
2) *What disappoints you most with education System of Rural area?*
   Students who come to learn doesn't have the basic knowledge and due to less no of teachers, proper attention is not possible for each student.
3) *How many students are accumulated in a class?*
   In a class having capacity of 30-35 students, there are almost as double around 60-70 students are accumulated in a single class irrespective of their age.

Furthermore, we have created personas of each kind of stakeholder to understand them easily and make Eduroid work for the same. Our Market research is based on ASER assessment which gives various proportions of children getting deprived of their education rights.

Data Flow Model
Zero level DFD of System
We have elaborated the process of learning, finding and requesting

teacher visits, tasks assignment, overall resource and user management. It has a basic overview of Eduroid system or the process being analyzed or modelled. It is designed to be at-an-glance view of Teacher, Student, map activity and QR activity showing the system as a single high-level process.

High Level Entities and process flow of system
• Managing all Student
• Managing all Teachers
• Managing all the tasks assigned to students by teacher
• Managing resources shared
• Managing Student's request for nearby Teachers
• Managing Teachers map activities
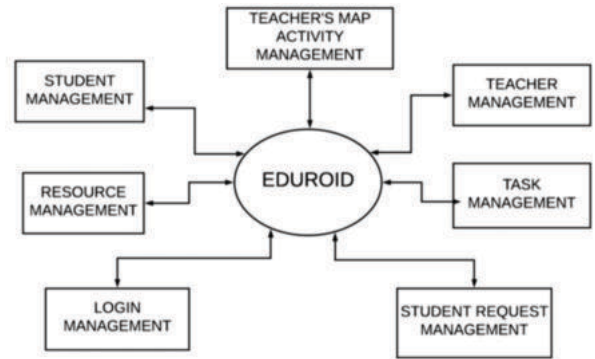• Managing all the activity log

Figure 1: Zero Level Data Flow Diagram.

First level DFD of System
It shows how the system is divided into sub systems (process). Each of which deals with one or more of the data flows to or from the external agent and which together provides all the functionality of an Educational application system as a whole. It also identifies internal data stores that must be present in order for the system to do its job, and shows the flow of data stream between the various parts of students, teachers, tasks, activity log and so on.

Main entities and the output of the 1st level DFD
• Processing Student records & generating its detail
• Processing Teacher records & generating its details
• Processing Student Request & generating the request for teachers
• Processing Teacher's map activity and generating the record for the same
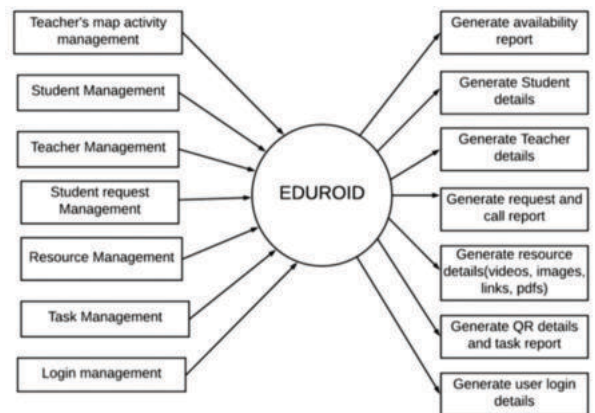• Processing Resources and generating the report for the resources.

Figure 2: First Level Data Flow Diagram

Second Level DFD
It may requires more functionalities of Eduroid to reach the necessary level of detail about Application functioning. Low level functionality of Eduroid
• Admin logs into the system and manages all the functionalities of Eduroid
• Admin can add, edit, delete and view the records of Student, Resources, Maps and teachers
• Admin can manage all the activity log, requests and QR codes shared.

- Admin can also generate report of students, teachers and Resources
- Admin can search the details of activity log, teachers and map activities.
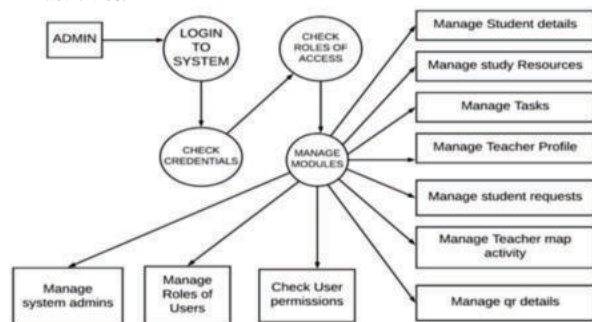

Figure 3: Second Level Data Flow Diagram

RESULTS
Benefits to Society
- Quality and access to education in rural schools as there are fewer committed teachers,
- Anytime learning material in the schools.
- Affordable education without dependence on any government body.
- Personal Guidance for students, resolving the distance issues for both teachers and students.
- Eduroid design promotes interactive learning, guided learning and distant learning at the same time making it a resourceful educational app for the rural education in India.
- Use of QRs to resolve low internet issues.

CONCLUSION
Majority of India still lives in villages and so the topic of rural education in India is of utmost importance. [6]Quality and access to education is the major concern in rural schools as there are fewer committed teachers, lack of proper text books and learning material in the schools. Though Government schools exist, but when compared to private schools then quality is a major issue. Majority of people living in villages have understood the importance of education and know that it is the only way to get rid of poverty. But due to lack of money they are not able to send their children to private schools and hence depend upon government schools for education. Every village is not provided with school which means that students have to go to another village to get education. Owing to this parents usually do not send their daughters to school, leading to a failure in achieving rural education in India. Eduroid builds a solution around these problems which resolves the overall of these issues of rural education in India. Eduroid tackles the distance, lack of resources and teacher issues all together with ease. Eduroid design promotes interactive learning, guided learning and distant learning at the same time making it a resourceful educational app for the rural education in India. Many hardships related to rural education are overcome in an innovative manner by Eduroid. Getting basic education becomes easy and students will enjoy learning on Eduroid.

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