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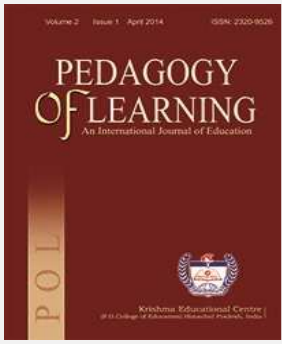

Integration of ICT in Ekalavya Model Residential Schools: a Case Study

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Abstract
This piece of work intended to unveil the ICT integration in Ekalavya Model Residential School (EMRS) of Odisha. The study was undertaken under case study approach by selecting the case purposively for convenience of the researchers. The data were collected through checklist, questionnaire, observation schedule and FGD from teachers, students and the principal of EMRS under study. The findings of the study revealed that teachers use ICT occasionally in their courses. The most frequently used hardware by the teachers in their courses was computer and then printer. The least frequently used hardware by the teachers in their course is camera and mobile. It becomes harder for computer instructor to pay attention for better understanding and supervision of ICT integration. However, the contractual nature of appointment of computer teacher also lessens the interest to work hard for better integration of ICT in this school. Furthermore, inadequate number of computer teachers, frequent power cut of electricity supply, less time allotment for students in a slot etc. are prevalent problems in the smooth integration of ICT in EMRS.

Keywords: ICT Integration, curriculum transaction through ICT and benefits of ICT

I. INRODUCTION

Information and Communication Technology (ICT) is known as an important trend in school education and it serves as a tool for knowledge upgradation, improving quality and reducing workload for students and academic staff. In India it is found that some students have good ICT knowledge but some are very poor due to lack of infrastructure, computer, and competent teacher etc. The reviews of related literature such as: Mohanty and Jena (2012), Kumari(2012), Christopher and Harriet (2014), Paul and Mondal (2012), Senapaty (2013) highlighted on successful integration of ICT both in higher education and school education with its immense potentialities for quality education. Further, studies conducted by Parra (2012); Aguilar (2012); Granados (2015); Unesco (2008) and Herrera (2015) revealed that ICT influenced the teaching learning process to a greater extent by becoming an eminent educational tool for improving quality of education, quality students and quality institution as a whole. However, no study was found on tribal education and also there is no study found on Ekalavya Model Residential School. So, the researchers are keenly interested to conduct a study on Ekalavya Model Residential School. These schools were initiated by the ministry of Tribal Affairs, Government of India for providing free high quality education to meritorious tribal children with integrating technology for enhancement of the learning experiences of the students. These schools are affiliated to Central Board of Education (CBSE). Out of 165 Ekalavya Model Residential Schools (EMRS), there are 13 (thirteen) EMRSs in Odisha. In Odisha, it is managed by the Odisha Model Tribal Education Society (OMTES) supported by SC and ST Development Department, Government of Odisha.

The investigators are very much interested to unveil the potential use of ICT in Ekalavya Model Residential School (EMRS) in the process of education with regard to availability of ICT facilities, curriculum transaction, classroom practices, students learning activities and different problems faced by students and teachers in the integration of ICT in EMRS. Hence, the study is entitled as "Integration of ICT in Ekalavya Model Residential School: An in-depth Study".

Research Questions

1. What are the ICT resources available in Ekalavya Model Residential School under study?

2. What is the extent of ICT integration in teaching of curricular subjects in Ekalavya Model Residential School?

3. What are the problems faced by the students and teachers of Ekalavya Model Residential School under study in integration of ICT in learning-teaching process?

Objectives of the Study

1. To find out the availability of ICT resources in Ekalavya Model Residential School under study.

2. To study the extent of integration of ICT in teaching of curricular subjects in Ekalavya Model Residential School under study.

3. To study the problems in integration of ICT in teaching learning process in Ekalavya Model Residential School under study.

Operational Definition of the Key Terms used

Integration: Integration in the present study refers to the blending/combining of ICT into the curriculum to enhance the teaching-learning process of Ekalavya Model Residential School.

ICT: Information and Communication Technology refers to the technologies for collecting, storing, processing, communicating and delivering information. It involves the use of computer, internet electronic mail (e-mail), satellite, telecommunication, global system of mobile (GSM) and Global Packet Radio Services (GPRS), world wide website (www) etc for better facilitation of educational process. In the present study ICT is confined to use of computer, internet electronic mail (e-mail), satellite, telecommunication, world wide website (www), social networking, and smart class in the teaching learning process of Ekalavya Model Residential School.

***Ekalavya Model Residential School*:** Ekalavya Model Residential Schools were initiated in India by the Ministry of Tribal Affairs, Government of India for providing free high quality education to meritorious tribal children and it integrated technology in the school to enhance the Learning Experiences of the Students. In this study, EMRSs of Odisha supported by SC & ST Development Department, Government of Odisha are *Ekalavya Model Residential School*s.

Delimitations of the Study

The study was delimited as follows:

(i) One Ekalavya Model Residential School.

(ii) Class IX and X Students.

(iii)Teachers concerned with classes VIII and XII.

II. METHODOLOGY OF THE STUDY

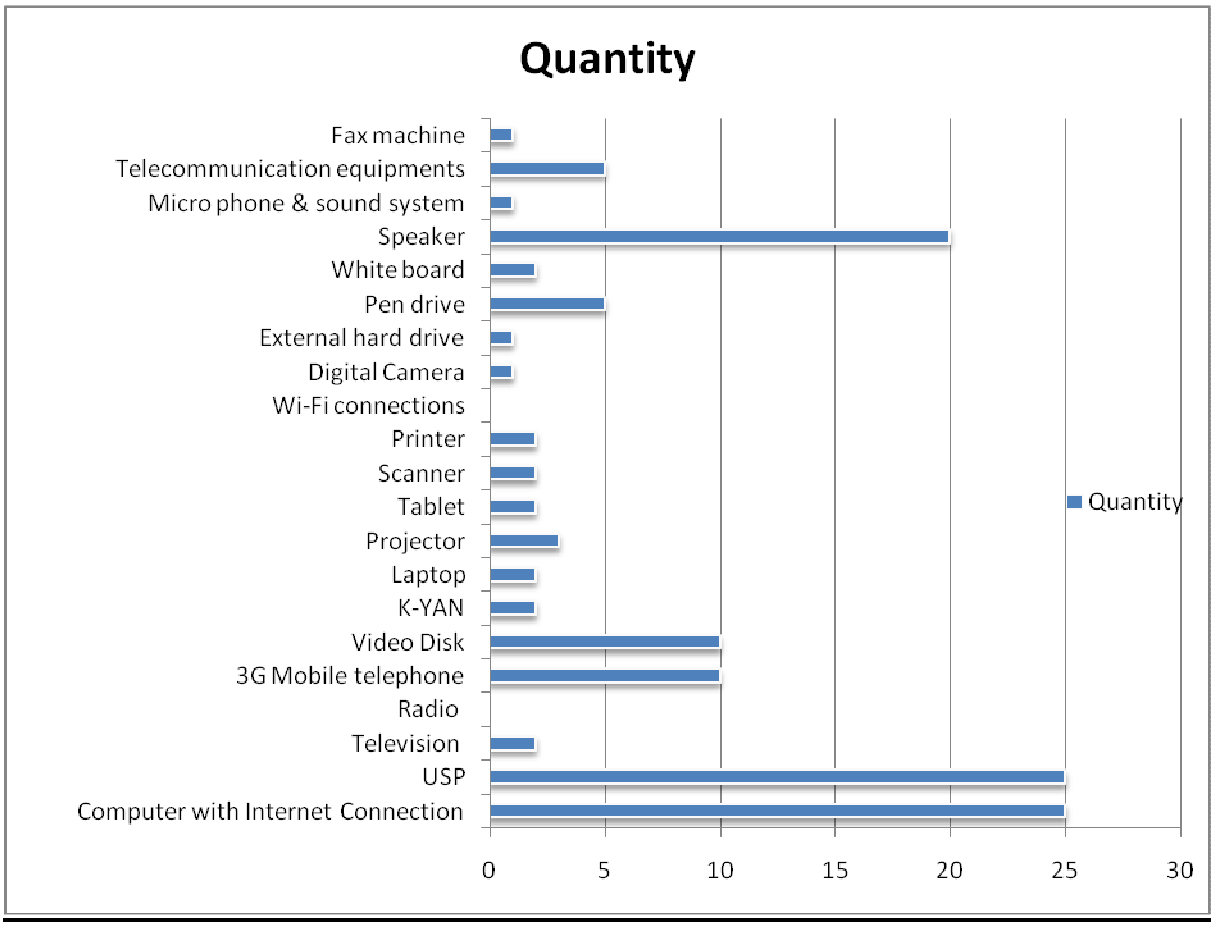
Design and Case: This study is a case study which comes under descriptive research. Ekalavya Model Residential School situated at Rampilo, nearer to Jajpur Road railway station in the district of Jajpur, Odisha. There are 24 teachers working in the school including principal and 460 students are studying. The teachers are engaged to teach the students of class VIII to XII. The researchers have delimited the study to Class-IX and X. The school is well connected from main road with concrete road. The school is situated in twenty acre land property. All hostels are in around the campus. There are separate boys' hostel and girls' hostel. There is a nice playground in the school for the children. There are total 20 rooms existed in the school out of when 13 are used as classroom, two store rooms, one- office room, one staffroom, one is computer laboratory, one is science laboratory and one is principles office. The school opens at 10 o'clock in morning and closes at 4.00 p.m. but in the summer season the school opens at 6 o' clock in the morning and closes at 10.00 a.m. Ekalavya Model Residential School of Jajpur District situated at Rampilo was selected purposively as the case for in-depth study. The informants within the case comprised of 20 teachers, 10 students and the Principal.

Tools: The data were collected with the help of Check list, Questionnaire for teachers and head, Observation schedule and F.G.D with students in studying ICT integration in Ekalavya Model Residential School. The researchers collected data with the help of observation schedule, questionnaire, and check list by maintaining good rapport.

Analysis and Interpretation: The data collected with the help of afore stated research tools are analysed with qualitative thick descriptions with regard to different dimensions of the study categorically.

III. RESULTS

A. Availability of ICT Resources in Ekalavya Model Residential School



(Figure-1: Available of Hardware)

i. At the time of observation the investigators observed that there are total three numbers of computers in the staffroom. All the three computers are in working condition. All computers have internet connection. Teachers use computer in the staffroom for downloading materials for the students' better learning, evaluating marks of the students and also use computer for their personal work. Out of three computers Principal uses one official commuter for maintaining daily work and storage of the important data. The teachers and the Principal also use their personal laptops for their works.

ii. In the staffroom there are two scanners and two printers available and all are in working condition. The teachers use the printers to print the materials for the students and their official work. Besides this, there is no LCD Projector, T.V and Radio in the staff room. One telephone is available in Principal room which is used for official communications.

iii. It is also revealed that there are total twenty two computers in computer lab out of which eighteen computers are in working condition and four computers are out of order.

iv. Out of twenty two, eighteen computers have internet connection. The computers were used by the students as well as the teachers. Students engage themselves in computer lab for downloading the materials, completion of the project work, typing, creating power point presentation slides, paint, playing games etc. in the computer. So it facilitates all students for updating their knowledge through internet.

v. There was a printer, which helps students and teachers to print out materials and documents for study purposes. There was a scanner, which helps students and teachers to scan their documents for study purposes.

vi. There is one projector that is used for teaching learning process in classroom. By the help of Projector, the teaching and learning more productive and fruitful.

vii. In the laboratory there are no T.V, Radio and telephone for the students, two pen drives are used by the teachers but not the students. The teachers use those to store the information and transferring files, documents and folders for official usages.

viii. At the time of observation, the investigators observed that there is no computer in the classroom. There are no printer facilities for students in the classroom.

ix. In the classrooms there are two LCD Projectors which are used for teaching learning in the classroom. The teachers use their personal laptop while using the projector for teaching purposes. By the help of the projector the teacher teaches different types of concepts related to their topic.

x. In the classrooms there are only two K-Yan systems by which the smart classes are managed. By the K-Yan system also do different types of activities like- showing PowerPoint presentation, audio presentation, video presentation, teleconferences, pictures, texts, diagrams, maps, charts, different famous places, events etc.

Table-1: Available of Software Tools

Name of Items	**Usability (Y/N)**
Educational Software (e.g. mathematics programs)	Y
Educational CD(e.g. Talking Dictionary)	Y
Multimedia Package	Y
Learning Management System (LMS)	N

Virtual Learning Environment (VLE)	Y
E-portfolio System	N
Digital Reader (Portable device to read books, newspapers etc. on screen)	Y
Teaching Modules	N
Educational games	Y
Electronic encyclopaedias	Y
Tutorials and statistics software	N
E-assessment tools (e-rubrics)	N
JAWS	N
Software for differently-abled	N
Software for language lab	N
Digital books	N
School website (URL : ----------)	N
Blogs	N
Podcasting	Y
Classroom 2.0	N
Geogebra	N
Hot potatoes	N

Table-1 depicts that the investigated School has Educational Software (e.g. mathematics programs), Educational CD (e.g. Talking Dictionary), and Multimedia Package, Digital Reader, Educational games and Electronic encyclopaedias. However, The teacher used different ICT tools in classroom like –PPT, E-mail, smart board, MS Excel, Podcasting, social networking, Google search, Wikipedia, Microsoft word etc. The teachers didn't used ICT assessment tools like – Portfolio, Rubrics, C-map, Hot potatoes etc

Table No. 2: Human Resources

Human Resources	**Number**
Computer Teacher	2
Demonstrator	0
Computer Assistant	0

Table-2 shows that there are only two computer teachers in the school and there are no demonstrators or computer assistant for the better facilitation of ICT scheme in the school. Further, it is stated that the human resource available for ICT integration is inadequate as they are to meet the need of total 460 students in the school. It becomes harder on their parts to pay attention for better understanding and supervision of ICT integration. However, the contractual nature of appointment of computer teachers also lessens the interest to work hard for better integration of ICT in this school.

A. Integration of ICT in EMRS

i. All the teachers stated that they use ICT occasionally in their courses. The most frequently used hardware by the teachers in their courses was computer and then

printer. The least frequently used hardware by the teachers in their course are camera and mobile.

ii. All the teacher respondents replied that they most frequently use "word processing" to the maximum level, "Internet" for the information search at the second level, and then "receiving/sending e-mail" at the third level.

iii. The information obtained from the teachers about the frequency of ICT use in curricular and co-curricular areas revealed that it is used in curricular areas such as English, Mathematics, science and Environmental studies/ Social Science. Furthermore, the findings confirmed that ICT had not been used frequently in the teaching of co-curricular subjects which is disappointing the potential of ICT as a tool in enhancing the students' knowledge and skills to learn the Art and craft, Health and physical education, yoga and Work experience.

iv. It is found that all the teachers use ICT for downloading learning materials from website. Whereas, a very less number of teachers upload learning materials in website.

v. The outcome of FGD with students revealed that students use computers in groups in the computer lab for doing calculations in mathematics, watching geographical locations in geography, making PowerPoint slides, drawing pictures in MS Paint, completing the assigned projects with the help of Internet for searching and downloading required materials. However, it was also stated that the students also use computers for playing different games, listening music sometimes and watching videos. It was also stated that ICT was used in accomplishing different extra-curricular activities like debates, discussion, song and dance competition, cultural programmes by students in different occasions and during sports.

B. Problems in the use of ICT in EMRS

i. It is stated "shortage of hardware and other materials like computer, printer, camera etc.; Lack of subject/content specific software for classroom deliberation; old computer sets frequently irritate them in working; and lack of basic knowledge and skills of most of the teachers in operating hardware having indifferent attitude of subject teachers are the significant problems for the use of ICT".

ii. Furthermore, inadequate number of computer teachers, frequent power cut of electricity supply, less time allotment for students in a slot etc are prevalent problems in the smooth integration of ICT in EMRS.

C. Benefits of ICT integration in school curriculum

The use of ICT in teaching and learning benefits in empowering the students to take the responsibility of learning on their own part. Further, it provides greater opportunity for cooperative and collaborative learning among the learners as well as teachers. It was also quoted "ICT provides diverse learning situations to the teachers as well as students". However, it encourages collaborative work so that other colleagues from the distance can access.

IV. CONCLUSION

ICT has the potential for enhancing the teaching learning process that counts for quality education of tribal students. Hence, the concern administrative body should be accountable for its effective and strategic implementation by availing adequate number of computers, increasing the nature of job of computer teachers appointed in EMRS and instilling a sense of responsibility and accountability by enhancing the job security of teachers that will result in effective and successful integration of ICT in EMRSs of Odisha.

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