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e-Vidyalaya Newsletter

What is e-Vidyalaya?

e-Vidyalaya under ICT@School Scheme of MHRD, Government of India envisages providing of a holistic computer education programme in Government and Government Aided schools. The Scheme proposes to establish Computer hardware, software infrastructure and provide education services in the Government schools.

ICT in Education: Need of the hour

OVERVIEW

Information and Communication Technology (ICT) is basically an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell phones, satellite communications, digital television etc. that provide access to information. India has slipped six places to rank 89th on a global Networked Readiness Index, showing a "widespread" weakness in its potential to leverage information and communications technologies for social and economic gains. While Singapore has replaced Finland on the top of the 143-nation list, prepared by World Economic Forum (WEF), it has called for improvement in India's business and innovation environment, infrastructure and skills availability.

During the past few decades, ICT has provided society with a vast array of new communication capabilities and has fundamentally changed the way we live now. In contrast, the impact of ICT on education in India, however, has been rapid and fast. ICT can, therefore, be perceived as a big change agent for education.

Effective Uses of ICT in Education

ICT can be used as a tool in the process of education in the following ways:

- **Informative tool:** It provides vast amount of data in various formats such as audio, video, documents.
- **Situating tool:** It creates situations, which the student experiences in real life. Thus, simulation and virtual reality is possible.
- **Constructive tool:** To manipulate the data and generate analysis.
- **Communicative tool:** It can be used to remove communication barriers such as that of space and time.

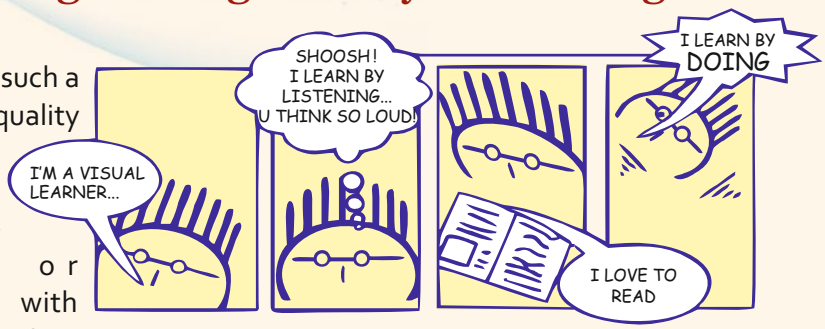
ICT@SCHOOL Project in Odisha:

The e-Vidyalaya project under "ICT@School" Scheme is a window of opportunity to the students and teachers in the Government and Government aided High Schools in the state of Odisha to bridge the digital divide. The scheme is a comprehensive and well thought-out initiative to open new vistas of Computer Aided Teaching and Learning to provide a level-playing field to school students whether in rural areas or in the cities. The continuous engagement of teachers and learners during the interactive learning process will enable effectiveness in education. The approach is to completely and systematically transform the traditional system of teaching from conventional Teaching methods to an ICT driven learning process. It is premised on a dynamic and participatory pedagogy that prioritized the need for constant up gradation of IT enabled knowledge and skills.

The IT enablement of education was based on a holistic integration of certain key activities, such as

- Developing an IT efficient infrastructural environment.
- Capacity building of the teachers as the pivotal point of ICT enabled teaching and learning.
- Generating an IT embedded indigenous knowledge base.

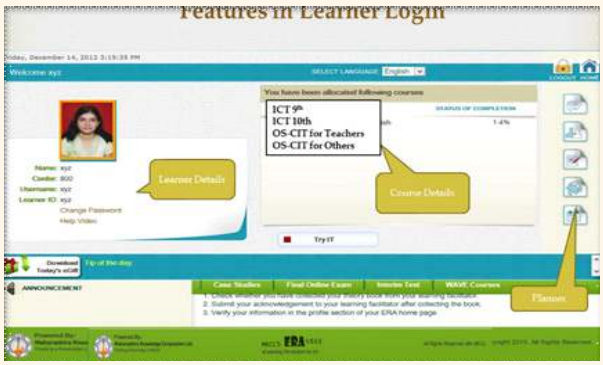
ICT Enabled e-content:Digitalising the way of learning



To introduce ICT-enabled education in such a large system one needs to have high quality multi-media enriched content in different disciplines for various courses The content is the basic element of ICT-enabled learning or e-learning which must be blended with suitable technological tools using appropriate pedagogies, to generate e-content. E-content which is highly interactive and multimedia enriched can play an important role in the knowledge gained by the learner through self-learning and assessment.

E-Content Development

The multimedia content of 40 Hours for 10th standard and 40 Hours for 9th Standard with inform Type and perform type is developed .The **inform type content** comprises of animation, videos in interactive mode, are designed to make the understand ability of complex subject content easy. It makes the learning more practical oriented and makes the student to feel the content. There are individual logins for all the Students.



The **perform type content** is based on Continuous Comprehensive Assessment where each subject contains 100 objective multiple choice questions, fill in the blanks and match the pairs per chapter with reasoning.

There are group of four students per computer. Each student gets one question and the answer gets confirmation from other three. The answer is shown with feedback at the end of submission of answer by last student. The next question is asked to the second the student and the answer provided gets confirmed by the other three and so on. As the same question is asked to four students, there is impetus to group activity. The subjects such as Communicative English as well as Sanskrit are also included. Group Learning mode is also available. The objective is to optimize the use of computers, group involvement, learning through discussion and raising the confidence level of the students bridging the gap between the student.

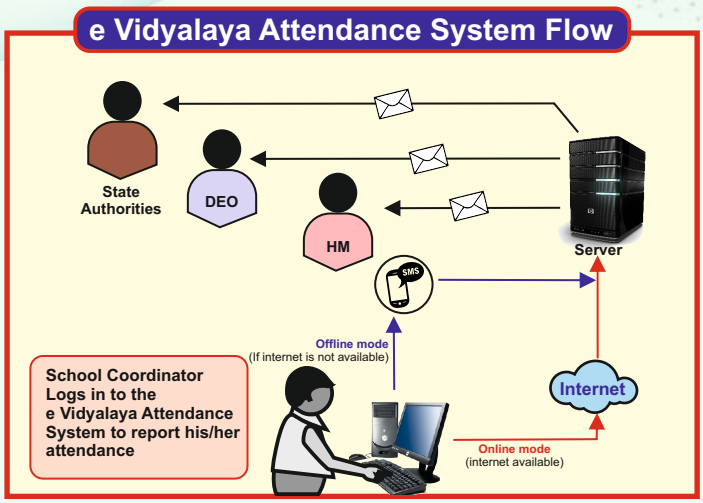
A **portal** has been designed for monitoring the learning of the students where the information of learning progression of each student based on different subjects is available. Based on the assessment of individual student, focus on particular topics where the student is weak. Similarly, assessment of teachers can be made based on students' performance.

Introduction of Online Attendance System:

Online and offline based attendance system has been introduced for all the school coordinators under the project to monitor their attendance in the schools on daily basis which is also reached through SMS to various stakeholders.

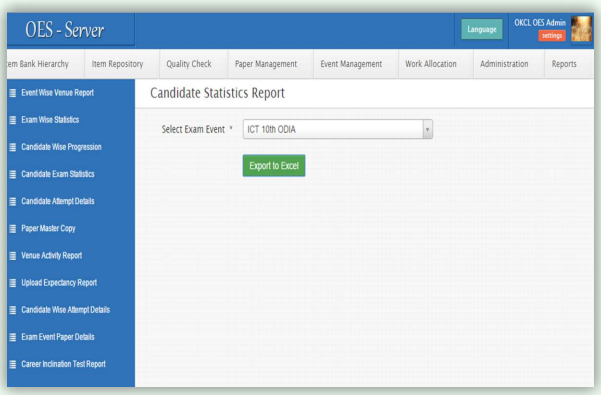
The School Coordinator needs to log in to the system to report his/her attendance:

- If internet connectivity is available in the system, the School Coordinator needs to go for "Yes" option to report his/her attendance.
- In case of non-availability of internet connectivity, the School Coordinator needs to SMS the received code from his/her registered Mobile Number.



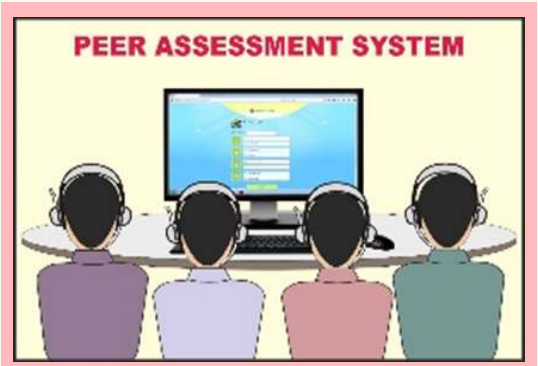
OES- A platform for Continuous Comprehensive Assessment:

The multimedia content for standard 9th and 10th has been developed and prepared under guidance of Subject Experts of Board of Secondary Education, Rashtriya Madhyamik Sikshya Abhiyan (RMSA) and Senior Educationists of Odisha.



After preparation, the e Contents were vetted and approved by State Council of Educational Research and Training (SCERT).

The e Contents on various subjects are taught to class-IX and X students in the secondary schools and it is being used by the teachers while teaching the students of all implemented schools. The contents are of two categories like inform type through ERA and perform type through Peer assessment system.



Peer Assessment System is to improve :

- Optimize use of Computers
- Group involvement
- Learning by discussing
- Confidence Level

ICT Centred Teaching Learning: From Good Teachers to Good teaching.....

"Technology will not have a significant impact on student learning until teachers change the way they teach." Larry Cuban, 1986

For many years, teachers taught and students were responsible for learning the material. It was the student's responsibility to acquire the knowledge for success. The primary concern of the teacher was to impart the knowledge. Technology helps change the student/teacher roles and relationships. It cannot teach; only teachers can teach. It can enhance the teaching-learning process. ICT Centred Teaching provides an array of powerful tools that may help in transforming the present isolated teacher-centred and text - bound classrooms into rich, student – focused, interactive knowledge environment.

PARADIGM SHIFT FROM FACTORY MODEL OF EDUCATION TO BROADCAST MODEL OF EDUCATION:

The 5 levels of ICT teachers training phase are:

1. Entry Phase: Teachers use traditional print-based media. Learning activities center around seat-based work. Teachers are most concerned about the basic operation of computers.
2. Adoption Phase: Classroom instruction still depends heavily upon chalkboards, textbooks.Teachers use word processors for writing activities. Teachers use educational software, including rudimentary drill-and-practice software to develop low-level skills.
3. Adaptation Phase: Teachers use word processors, databases, some graphics applications, and many computer-assisted instruction packages.With the support of technology, student productivity increases. Teachers' basic computer skills improve.
4. Appropriation Phase: Teachers and students demonstrate highly developed skills with technology. Teachers are comfortable with technology. Teachers develop new instructional strategies. Emphasis shifts to collaborative learning.
5. Invention Phase: Teachers facilitate the construction of student knowledge. Classrooms promote social interaction, encouraging students to share their own knowledge and experiences. Teachers implement a curriculum integrated with technology. Teachers employ a variety of student assessment activities.

FOOD FOR THOUGHT

"Any technology which increase the rate of learning would enable the teacher to teach less and the learner to learn more"

ICT in education is the need of the hour. It has the potential to provide solution to many of the challenges higher education faces today. The common fear that ICT shall replace a teacher is totally unfounded. Realization now seems to be slowly dawning on the teaching community that ICT is primarily to empower them and not to replace them. ICT is, therefore, not to be feared but to be embraced so as to empower our future generations by providing them high quality ICT- enabled education.

Capacity Building Training for Teachers

Teacher's training:

The teachers training activities have been carried out in six layers of teachers' training programmes.

a. In the **first layer**, the hardware installed in the ICT lab are demonstrated thoroughly to the School teachers.

b. In the **second layer**, Face-to-face class room training of teachers have been organized on usages of ICT lab and e Content as well as various software installed for learning and monitoring.

c. In the **third layer**, the computer fundamentals learning has been imparted by the Master Trainers deployed and also through the Doordarshan serial named "AAMA SCHOOL.COM". The first slot of 10

episodes of the serial covered OMR training, subject experts' discussion which was widely appreciated by the educationists. The next slot of 130 episodes comprised the office tools teaching based on case studies related to real life situation.

d. The **fourth layer** includes certification course for learning Microsoft office tools covered though e content developed emphasizing teachers' pedagogy. It is in interactive mode comprising of 132 hrs of

extensive evidence-based multimedia content. At present, around twenty four thousand teachers are enrolled for certification and continuing their learning through the e-learining platform. The learning progression of the learner can be monitored centrally from the framework deployed.

e. The **fifth layer** includes training on hardware repair and maintenance.

f. The sixth layer of training will be given to encourage them to prepare e Content using office tools and internet. The first four layers are executed form the academic year 2014-15 to 2015-16. The last two layers will be carried in the year 2016-17 to 2018-19.

Beside this, Refresher training is imparted to the teachers at school level by the Implementing Agencies to train them in the area of effective use of ICT lab in continuous process of teaching and learning. This also shall encourage them to build capacity to handle the ICT lab after BOOT period when the ICT labs will be handed over to the School authorities. The refresher training for teachers is carried out in each year for the five years period i.e. from 2014-15 to 2018-19.

Glimpses of ICT Labs

The action hub....

All the schools under ICT@Schools scheme have been equipped with ICT Lab for usage of technology as an aid to teaching. The ICT Lab consists of a main computer through which 10 different computer nodes are connected via shared computing technology. Each computer node has a monitor, keyboard, mouse, and 4 headphones connected to it, enabling learning of 4 students at a time. A stand-by desktop computer is provided along-with the main computer for back-up purpose.

Apart from the above, other equipment such as servo stabilizer, silent generator set, fire-extinguisher, lab-cleanliness kit, multi-function printer, interactive board, projection system and others are provided for smooth functioning of the ICT Lab.

Sharing of Ideas & Thoughts....

Regular meetings, reviews are conducted where things are shared & learned with stakeholders.

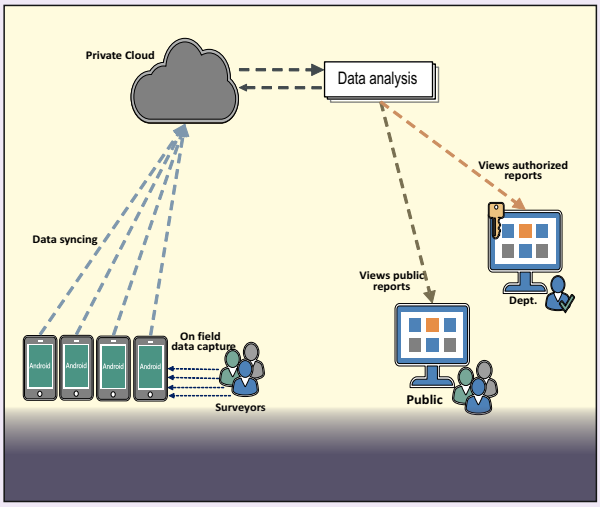
> "Think big, believe big
> act big & the result will be big"

Capacity Utilization Monitoring:

For smooth and proper implementation of the e-vidyalaya project the Quality check & Monitoring process was carried out in following ways

- **Support System Portal:** To know the hardware downtime and complaint log in process, a Support System is introduced to receive complaints through various mode and issue tickets to the implementing agencies to resolve the issues on time.
- **Inspection and Validation:** In course of implementation of the project in several phases the ICT labs have been set up and as per the specifications, delivery and installation of hardware has been completed in all implemented schools. Thereafter, the Installation and Commissioning Reports were signed by the Headmasters of the school and it was validated by the District Lead Centre (DLCs) and ICT Coordinators, deployed across 30 districts of the state. Third Party validation of electrical wiring has been done by different empanelled electrical engineers. Technical specification has been validated through WORM, by means of monthly visit by the ICT Coordinators and Tab upload from the school point.

- **ICT Coordinator:** ICT Coordinators have been instructed to visit the schools and supervise the functionality of the ICT labs in their jurisdiction i.e. one ICT Coordinator per 60 schools(65 in Total) and upload the photographs and other sources of information through geographical positioning system (GPS) enabled Tab. Each ICT Coordinators visit each school at least once in a month to ensure the functionality of lab and providing adequate support and training if required.



- **GPS Based Tab:** The GPS enabled Tab is a portable device which has been provided to all ICT Coordinators, to ascertain their visit to schools and tracking of the particular location of the schools and his movement for smooth coordination of the project by receiving geographical positioning information. It is used to upload all photographs of lab and other required information through pictorial shape to know the status of the Lab equipment and observe the functionality of the ICT labs.

SUPPORT SYSTEM

e Vidyalaya Support System

- **Two Posters have been pasted at the Schools providing**
  - I. Information about all the ICT equipment in a ICT lab
  - ii. Information about the procedure to be adopted for raising the issues

- **The ICT Schools related issues may be raised in following three ways.**
  - i. Sending SMS
  - ii. Giving Missed call
  - iii. Writing the issue in the Complaint register

The Data....

e Vidyalaya Web portal: The web based portal viz: www.evidyalaya.org has been hoisted to publish and uploading of information for monitoring the project and to make the project activities more transparent. Using www.support.evidyalaya.org all stakeholders of the project are lodging the issues which are resolved by implementing agency.

Daily Support & Monitoring activities

i. Call centre executives are working under the project who call the School Coordinators and cross check the activities done by the School Coordinator in the schools.

ii. The Call centre executives of the implementing agencies are making telephonic calls in each day according to the calling script and as per the requirement of the project.

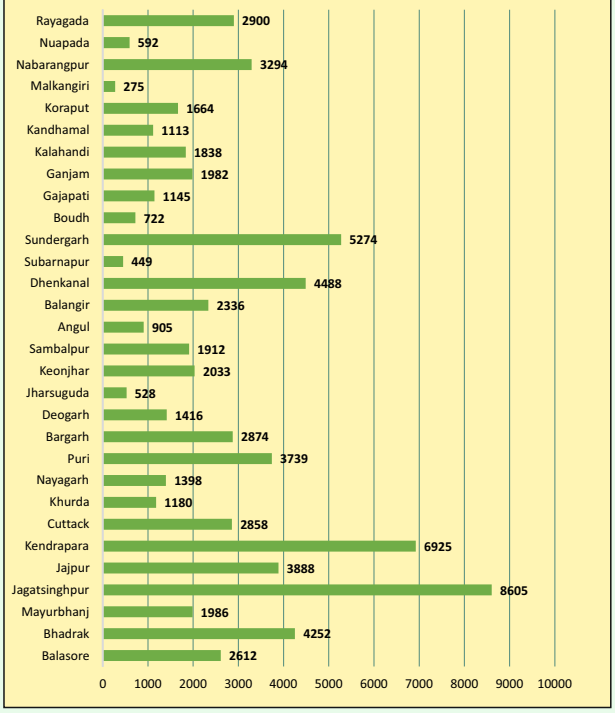
iii. They conduct a meeting before starting of the work in each day and make compilation of data collected from schools, School Coordinators and District Coordinators that supports the smooth Project monitoring system.

iv. An SMS and missed call system has been introduced to receive information and complaints from schools to resolve the issues.

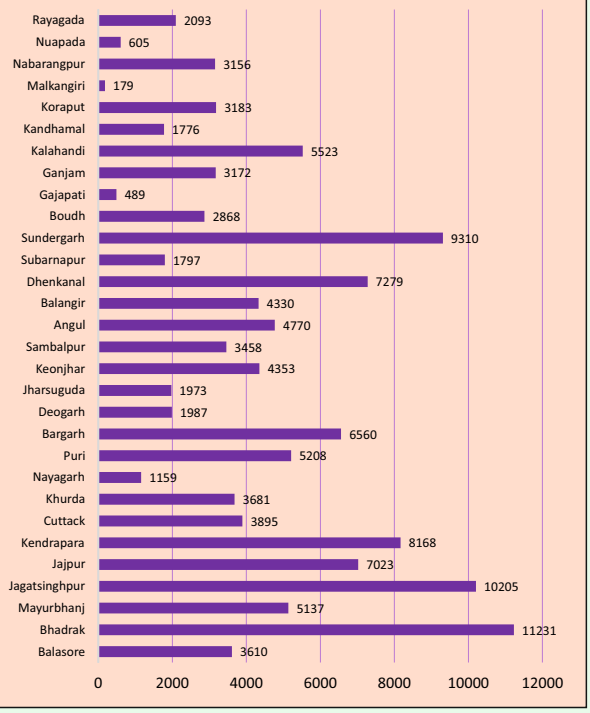
v. Random Visit of Project Monitoring Team: The Project Monitoring members are making unscheduled visits to the Schools and Districts to know the status of the project activities in their respective areas and prepare consolidated reports for necessary support to monitor the project.

FACTS & FIGURES

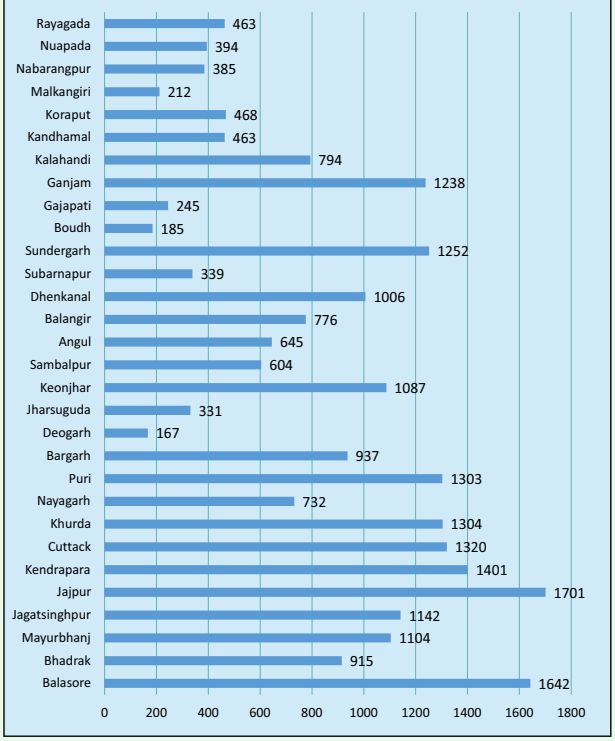
NO. OF STUDENTS USING OES (9TH)
Total = 75,183



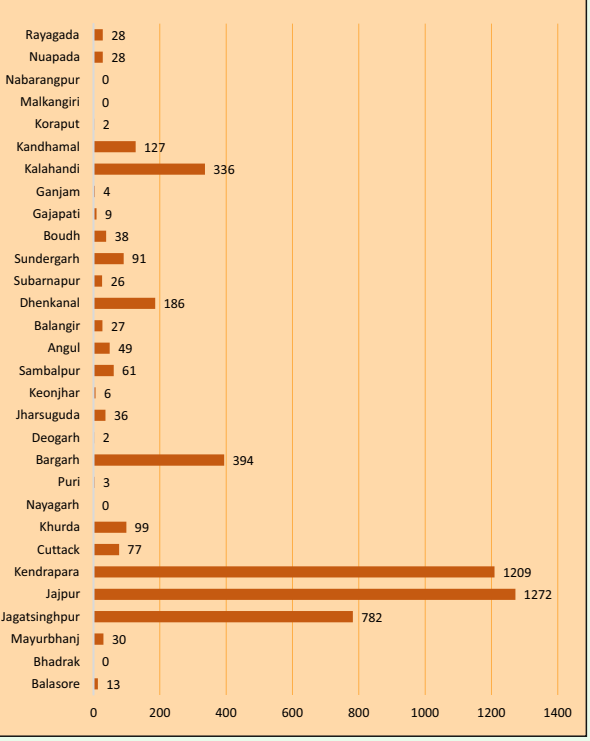
NO. OF STUDENTS USING OES (10TH)
Total = 1, 28,178



NO OF TEACHERS ENROLLED
Total = 24,555



NO OF TEACHERS COMPLETED TRAINING
Total = 4,935



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