© INTERNATIONAL JOURNAL FOR RESEARCH PUBLICATION & SEMINAR
ISSN: 2278-6848 | Volume: 07 Issue: 0 3 | April - June 2016
Paper is available at www.jrps.in | Email : info@jrps.in

Study of Information and communication technology, its components, advantages and disadvantages.

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9 772278 684800 03
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Abstract : The Information and Communication Technology (ICT) in schools have been subsumed in the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). Now ICT in Schools is a component of the RMSA. The Information and Communication Technology (ICT) in Schools was launched in December, 2004 and revised in 2010 to provide opportunities to secondary stage students to mainly build their capacity on ICT skills and make them learn through computer aided learning process. The Scheme is a major catalyst to bridge the digital divide amongst students of various socio economic and other geographical barriers. The Scheme provides support to States/UTs to establish computer labs on sustainable basis.

Introduction : Information and communication technology is an important instrument, which can transfer the present isolated teacher centered ,book centered learning environment into a rich student centered environment. this new learning environment developed by the ICT is called interactive learning environment. ICT aims at transferring the old traditional paradigm of learning to the new paradigm of learning. ICT define learning as neutral, social, active, linear or non-linear ,integrative and strength of the student, hence use of ICT in the teaching learning environment can bring a rapid change in the society.

Components : The scheme has essentially four components:-

- The first one is the partnership with State Government and Union Territories Administrations for providing computer aided education to Secondary and Higher Secondary Government and Government aided schools.
- The second is the establishment of smart schools, which shall be technology demonstrators.
- The third component is teacher related interventions, such as provision for engagement of an exclusive teacher, capacity enhancement of all teachers in ICT and a scheme for national ICT award as a means of motivation.

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ISSN: 2278-6848 | Volume: 07 Issue: 03 | April - June 2016
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- Fourth one relates to the development of a e-content, mainly through Central Institute of Education Technologies (CIET), six State Institutes of Education Technologies (SIETs) and 5 Regional Institutes of Education (RIEs), as also through outsourcing.

Importance of subject in education:

ICT now is the necessity as to develop their transactional strategies so as to meet the need and demand of the learner. It demands professional development of teacher educator. ICT also improve quality of education by adopting a new strategies of the teaching learning process, It also promote experimentation and innovations.

Life-long Learning : In order to be innovative and inclusive, learning and education strategies must recognize all places where learning takes place: at work, in the community, in the family, and in social and civic life. ICT has tremendously broadened the opportunities for people to acquire information, interact, network, address issues of common concern, generate income and participate in society.

Mobile learning : Mobile learning involves the use of mobile technology, either alone or in combination with other information and communication technology (ICT), to enable learning anytime and anywhere. Learning can unfold in a variety of ways: people can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms. Mobile learning also encompasses efforts to support broad educational goals such as the effective administration of school systems and improved communication between schools and families.

E-learning : Education and learning are central to UNESCO's mandate and to most of the gains that are anticipated from the widespread use of ICT. One of the basic requirements for education in the 21st century is to prepare populations for participation in a knowledge-based economy, including the social and cultural perspectives. E-learning is a cornerstone for building inclusive knowledge societies. UNESCO, with its unique mandate to promote the free exchange of ideas and knowledge, has played a key role in World Summit of Information Society. UNESCO's contribution incorporated the ethical, legal and socio-cultural dimensions of the Information Society and helped to grasp the opportunities offered by ICT by placing the individual at its centre.

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Anytime, anywhere. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

Advantages and disadvantages :

Benefits for teachers

a. ICT facilitates sharing of resources, expertise and advice
b. Greater flexibility in when and where tasks are carried out
c. Gains in ICT literacy skills, confidence and enthusiasm.
d. Easier planning and preparation of lessons and designing materials
e. Access to up-to-date pupil and school data, any time and anywhere.
f. Enhancement of professional image projected to colleagues.
g. Students are generally more ‘on task’ and express more positive feelings when they use computers than when they are given other tasks to do.
h. Computer use during lessons motivated students to continue using learning outside school hours.

Benefits for students

a. Higher quality lessons through greater collaboration between teachers in planning and preparing resources .
b. More focused teaching, tailored to students’ strengths and weaknesses, through better analysis of attainment data

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c. Improved pastoral care and behaviour management through better tracking of students
d. Gains in understanding and analytical skills, including improvements in reading
e. Comprehension.
f. Development of writing skills (including spelling, grammar, punctuation, editing and re-drafting), also fluency, originality and elaboration.
g. Encouragement of independent and active learning, and self-responsibility for learning.
h. Flexibility of 'anytime, anywhere' access (Jacobsen and Kremer, 2000)
i. Development of higher level learning styles.
j. Students who used educational technology in school felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem
k. Students found learning in a technology-enhanced setting more stimulating and student-centred than in a traditional classroom
l. Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources
m. Opportunities to address their work to an external audience
n. Opportunities to collaborate on assignments with people outside or inside school

Benefits for parents

a. Easier communication with teachers
b. Higher quality student reports – more legible, more detailed, better presented
c. Greater access to more accurate attendance and attainment information
d. Increased involvement in education for parents and, in some cases, improved self-esteem
e. Increased knowledge of children's learning and capabilities, owing to increase in learning activity being situated in the home
f. Parents are more likely to be engaged in the school community
g. You will see that ICT can have a positive impact across a very wide range of aspects of school life.

Disadvantages : The use of the Internet for education is not without problems. Therefore, one should expect the problems to be encountered in using the Internet in teaching to be evolving as well. There are some disadvantage of using ICT for teaching and learning :

Plagiarism : Apart from Web sites that claim to help students write term papers, there are numerous cases of students downloading information from the Net and turning them in for grades. We can minimize this problem by requiring students to cite research sources. 2. Student ***Privacy*** : Criminals, marketers, and other persons can easily get information from students when they are online. These could post danger to students' lives or may even lead to litigation against the school. To avoid this problem, students should be educated on the dangers of giving information to people online. Parents and teachers need to supervise students' online activities.

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Low Income Groups : According to the US Department of Education, over 50% of public schools with a high minority enrollment had a lower rate of Internet access than public schools with a low minority enrollment in 1997.

Preparation Time : It takes a lot of preparation time to effectively use the Net for education. In addition to designing Internet based lesson plans, we may have to surf the Internet to download lesson plans and adapt them to support the curriculum objectives or visit sites to select those appropriate for classes.

New Administrative Responsibilities : Teaching using the Internet brings to bear a new set of administrative demands on the teacher and the school administration. These include development and implementation of acceptable use policy, training, developing new evaluation criteria as needed, and addressing parents' concerns.

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