

# THE LIMITATIONS ASCERTAINED IN REALIZATION OF ICT TOOLS IN TEACHING & LEARNING

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**Abstract:** During Last couple of years ICT has justified its importance in almost all fields like hospitality, engineering, education, industry, research etc. Specifically, various ICT tools in the Education system can help improve effective teaching learning process. It also provides its contribution to evaluation part. However, there are still some challenges i.e. cost, internet access, trained staff, which we need to cooperate and try to overcome so as to implement it in real practice. This article focuses on these hurdles and their corresponding effects while including practical examples from various ICT tools in education system. Some criticism and considerations are also presented. This paper will not only provide the key references but also provide enough background to the use of it.

**Keywords:** Edmodo; Google Classroom; IC; IDI Ran; SOE;

## I. What is ICT

Abbreviation of ICT is considered as an Information and Communications Technology. Birth of the ICT word is fully dependent for/on information technology (IT); its scope is more in a broader sense. ICT has more recently been used to describe the convergence of several technologies and the use of common transmission lines carrying diversified data and various communication types in different formats.

According to Wikipedia “Information and communications technology (ICT) is an extended term for information technology (IT) which stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information <sup>[1]</sup>.

Another way of looking at it is that ICT stands for <sup>[2]</sup>:

1. Information – (or data) in paper or electronic format
2. Communication – in person or electronically (electronic communications), in writing or voice, telecommunications, and broadcasting
3. Information technology (IT) – including software, hardware and electronics
4. Communications technology – including protocols, software and hardware

Further ICT is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning<sup>[3]</sup>. When ICT is discussed it will be always in a broader sense. But last couple of years ICT has proved to profound changes in all areas of society, and also has brought about a revolutionary change in the field of education, Industries and day to day life.

## II. ICT in Education

In this Paper ICT has been discussed with respect to only field of education. India is well known for its well known “Gurukul” based education. Before couple of years Indian education system was run only through oral communication with the use of various accessories like blackboard etc. But during last few years in education ICT has made highest level of changes for improvement in it.

Best example is student can submit assignment from home via google classroom (ICT tool for education).

Information technology has not only existed as an independent technology, but also integrated into the teaching content and methods of education. Techniques used in education are not only designed for education, but due to its natural attributes or the internal logical rules it can solve some problems in the education. Teachers or experts in education integrate them into education. For example, the widely used POWERPOINT, video technology, electronic whiteboard, and also the mobile technology of Internet plus era, the intelligent push technology and the virtual reality technology.

Specifically Use of ICT in higher education can make a lot of difference in terms of quality. In India according to Planning Commission report, “faster sustainable and more inclusive growth ; An approach of the twelfth five year plan”. 2011 mentions that India has third largest system of education in place but still faces problems of access, equity and quality. Gross Enrolment Ratio (GER) at higher and technical education level is only 22% and thus there is a scope for further expansion of technical education. Government of India has set a target of achieving 38% enrolment by the year 2020. The major challenges before the country includes: converting demographic advantage to demographic dividend, increasing GER at higher and technical education level, providing equal access to technical education in different states and diverse groups, providing competent human resource for manufacturing sector, rural development and transformation and infrastructure development <sup>[11]</sup>. ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment. It helps us as shown in Table 1 mentioned below:

Table 1 Various Benefits of ICT tools in education systems

Sr.No.	Benefits	Details
1	General benefits	<ul style="list-style-type: none"> <li>• Greater efficiency throughout the school.</li> <li>• Communication channels are increased through email, discussion groups and chat rooms</li> <li>• Regular use of ICT across different curriculum subjects can have a beneficial motivational influence on student learning.</li> </ul>
2	Benefits for teachers	<ul style="list-style-type: none"> <li>• ICT facilitates sharing of resources, expertise and advice</li> <li>• Greater flexibility in when and where tasks are carried out</li> <li>• Gains in ICT literacy skills, confidence and enthusiasm.</li> <li>• Easier planning and preparation of lessons and designing materials</li> <li>• Access to up-to-date pupil and school data, anytime and anywhere.</li> <li>• Students are generally more on task and express more positive feelings when they use computers.</li> </ul>
3	Benefits for students	<ul style="list-style-type: none"> <li>• Higher quality lessons through greater collaboration between teachers in planning and preparing resources.</li> <li>• More focused teaching, tailored to students, strengths and weaknesses, through better analysis of attainment data</li> <li>• Improved pastoral care and behavior management through better tracking of students</li> <li>• Gains in understanding and analytical skills, including improvements in reading Comprehension.</li> <li>• Development of writing skills, also fluency, originality and elaboration.</li> <li>• Encouragement of independent and active learning, and self-responsibility for learning.</li> <li>• Flexibility of anytime, anywhere access</li> <li>• Development of higher level learning styles.</li> <li>• 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</li> <li>• Students found learning in a technology-enhanced setting more stimulating and student-centred than in a traditional classroom</li> <li>• Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources</li> <li>• Opportunities to address their work to an external audience</li> <li>• Opportunities to collaborate on assignments with people outside or inside School</li> </ul>
4	Benefits for parents	<ul style="list-style-type: none"> <li>• Easier communication with teachers</li> <li>• Higher quality student reports – more legible, more detailed, better Presented</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Greater access to more accurate attendance and attainment information</li><li>• Increased involvement in education for parents and, in some cases, improved self-esteem</li><li>• Increased knowledge of children’s learning and capabilities.</li></ul> |
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### III. Various ICT Tools for education systems

In higher education lots of various kind of ICT tools is utilizes based on different kind of requirement and purposes but most of common ICT tools have been highlighted below.

Table 2 Highlight of Various ICT tools in education systems

S. No		Details
1	Google classroom	<b>Google Classroom</b> is a blended learning platform for schools that aims to simplify creating, distributing and grading the assignments in a paperless way. Assignment creation and distribution is accomplished through Google drive while Gmail is used to provide classroom communication. Students can be invited to classroom through the institution's database through a private code that can then be added in the student interface or automatically imported from a school information management system. Google class room integrates with students and teachers Google calendar. Each class created with Google Classroom creates a separate folder in the respective Google service where the student can submit work to be graded by a teacher. Communication through Gmail allows teachers to make announcements and ask questions, students in each of their classes. Teachers can add students directly from the Google Apps directory or can provide a code that can be entered for access to the class by students [4].
2	Website	In this technology era, the passion of internet is boosting among the students. For any search they usually like to use the Google to collect information. Similarly in the case of education, it is often helpful to use educational websites as a means of collecting relevant information about the concerned subject. Today many institutes and colleges in India are developing their sites to offer the real concepts to the students. With the help of these educational websites students can search any information across the country just by entering few relevant key words. The concept of education websites is still new in India but owing to its growing need, it is gaining popularity at a fast pace. In this regard, they visit education websites and openly discuss their areas of interest and seek all significant info. Students also visit these education websites to get the information about the various college or institute; they want to take admission in.
3	Blog	"Blog" is an abbreviated version of "weblog," which is a term used to describe websites that maintain an ongoing chronicle of information. Blogs range from the personal to the political, and can focus on one narrow subject or a whole range of subjects [3].
4	Edmodo	<u>Edmodo</u> is one of the most popular tools for educators on the internet with over 50 million users. <u>Edmodo</u> allows you to add all your digital learning content into one location where it is password controlled and where the students can easily access it. One can build learning activities around their content. So one the students can do and these are all tracked by <u>Edmodo</u> , making it easy to see what students have completed and what they have not completed.

a) Electricity facilities:

To support teaching and learning, as well as improve overall education management, a variety of ICT-assisted instructional approaches may be implemented, ranging from the use of radio or television to computers, Internet and newly-emerging mobile devices. To summarise, the integration of ICT into schools requires electricity (e.g. grid/mains connection, wind, water, solar or fuel-powered generator, etc.) that is regularly and readily available. In most developing countries, the key determining factor for electricity is location. Rural, remote and mountainous regions are frequently neglected in building up national infrastructure, resulting in a lack of power supply to support ICT in education [7].

## 2) Telecommunication Facilitates:

Telecommunication facilities are another basic element which helps to build the educational and administrative capacity of schools. Defined as a fixed telephone line, cable connection, mobile phone or other sustainable communication technology that connects a school's terminal equipment to the public switched telephone network, or other telecommunication network, and which is intended for pedagogical or administrative purposes, telecommunication facilities can be used for communication between teachers with students, parents, various service providers to the schools, local education authorities, and other administrative organizations. Telecommunication facilities may also provide the requisite infrastructure to provide various types of Internet connectivity. Fixed telephone lines can provide both narrowband and broadband Internet, while mobile telephones can provide varying levels of broadband connectivity through 3G or 4G technology. Generally, faster than mobile broadband Internet, wired connections (including ADSL, cable, fixed wireless, fibre optic cable, satellite, etc.) allow for upload and download broadband speeds that are faster<sup>[7]</sup>.

## 3) Cost of ICT tools:

More and more resources are being put into ICT in schools - the cost of laptops, wireless broadband; projectors for example contribute a large percentage of the Education Institute schools budget. One of Survey report said that \$850 million Standard ICT Operating Environment (SOE) system has begun in 2012, enabling students to tap onto wireless networks in their schools with speeds up to 1Gbps to do their school online assessments or research for their projects - particularly in the secondary and tertiary levels of education.

## 4) Misuse of ICT

Instead of using their laptops or tablets for their studies and online tests, more often than not students stray away and visit social networking sites like Facebook or Twitter. Then, listening to the teachers teaching lessons are no longer their main priority - they would be too focused on playing games or visiting social networking sites. This would result in lower academic grades. However, should the student be focused to their studies, such activities may not play out and that would mean ICT is an advantage to them<sup>[8]</sup>.

## 5) New administration responsibilities

Teacher has to acquire a new knowledge or a practice for use of particular ICT application. For regularly updates faculty always need to update ICT tools on regular basics which ultimately add a new responsibilities on teacher other than academics.

## 6) Teacher's Attitude

One of the major barriers for the cause of ICT not reaching its full potential in the foundation stage is the teacher's attitude. According to Hara (2004), within the early years education attitudes towards ICT can vary considerably. Some see it as a potential tool to aid learning whereas others seem to disagree with the use of technology in early year settings. Blatchford and Whitebread(2003:16), suggests that the use of ICT in the foundation stage is "unhealthy and hinders learning". Other early years educators who are opposed to offering ICT experiences within the educational settings take a less extreme view than this and suggest that ICT is fine, but there are other more vital experiences that young children will benefit from, (Blatchford and Whitebread, 2003). In theory some people may have the opinion that the teachers who had not experienced ICT throughout their learning tend to have a negative attitude towards it, as they may lack the training in that area of the curriculum<sup>[9]</sup>.

## V. Remarks

According to Indian express news paper report says that "India has been ranked a low 131 out of 167 nations (dropping six notches from the IDI rank in 2010) on a global index that measures the level of information and communication technology access, even as the number of households with Internet and computer has increased in the country over the last five years. India is ranked 131st in the IDI 2015 rank, UN International Telecommunications Union's flagship annual Measuring the Information Society Report said that globally 3.2 billion people are now online, representing 43.4 per cent of the world's population, while mobile-cellular subscriptions have reached almost 7.1 billion worldwide, with over 95 per cent of the global population now covered by a mobile-cellular signal. The report also notes that the 167 economies included in the ITU's ICT Development Index (IDI) improved their IDI values between 2010 and 2015 – meaning that levels of information and communication technology (ICT) access, use and skills continue to improve all around the world<sup>[10]</sup>.

## VI. Conclusion

We conclude that the use of ICTs help improve the quality of education also motivates to learn. ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process. ICTs provide the opportunity to connect with real people and to participate in real world events. In developing countries like India lots of constraints are there as mention. If we remove those difficulties somewhat ICT tools will prove its best results in improvement of Indian Education System.

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