

# STATUS OF ICT IN EDUCATION AND SUPPORT OF GOVT. OF INDIA

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## ABSTRACT :

Information and Communications Technologies (ICT) education is basically our society's efforts to teach its current and emerging citizens valuable knowledge and skills around computing and communications devices, software that operates them, applications that run on them and systems that are built with them.

What are these things? How do they work? How do you use them productively? How are they deployed, assembled, managed and maintained to create productive systems? How they are used in specific business and industry settings? What are the underlying science and technologies behind them and how might those be developed to advance ICT fields? ICT is complex and quickly changing, and it is confusing for many people. It is so pervasive in the modern world that everyone has some understanding of it, but those understandings are often wildly divergent.

ICT is used strategically in almost all businesses and industries. Many have developed specialized systems and uses of ICT, and many have specialized legal and regulatory requirements; quality control systems; integrations with production and research equipment and systems; security requirements; and software applications. For example:

Bioscience industries rely on specialized ICT systems and applications to conduct research, analyze organic materials, produce biotech products and do required reporting;

Financial services industries rely on ICT to maintain customer records, do business, conduct trades, do financial reporting, secure proprietary information and comply with regulations; Manufacturing industries use specialized computer controlled systems and robotics to design, produce and test products.

Property management operations use ICT to network and control heating and cooling, lighting and building access systems. Electric utilities use ICT to monitor and manage electricity distribution, customer billing and smart metering systems. Telecommunications, cable TV and other entertainment industries use ICT to store content, manage customers and deliver their services.

We need to develop a competent workforce that understands not only relevant technologies, but also specialized business and industry environments and operations, to meet these specialized needs.

## KEY WORDS :

**ICT**- Information and Communication Technique, **NMEICT**-National Mission on Education through-ICT,

**IDI**-ICT Development Index, **SWAYAM**-Study Webs of Active-earning for Young Aspiring Minds,

**ITU**- International Telecommunication Union, **OLPC**-One Laptop per Child, **CAI**-Computer Aided (or Assisted) Instruction,

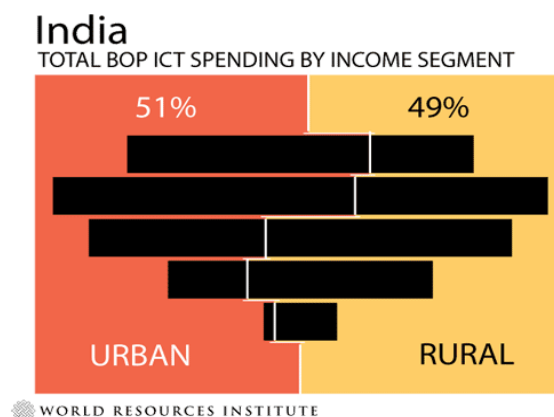
**NPICT**-National Policy on Information and Communication Technology, **VPN**-Virtual Private Network,

## INTRODUCTION :

Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, especially in terms of "**Knowledge** • **Comprehension**" • "**Practical skill**" and "**Presentation skill**" in subject areas such as mathematics, science, and social study.



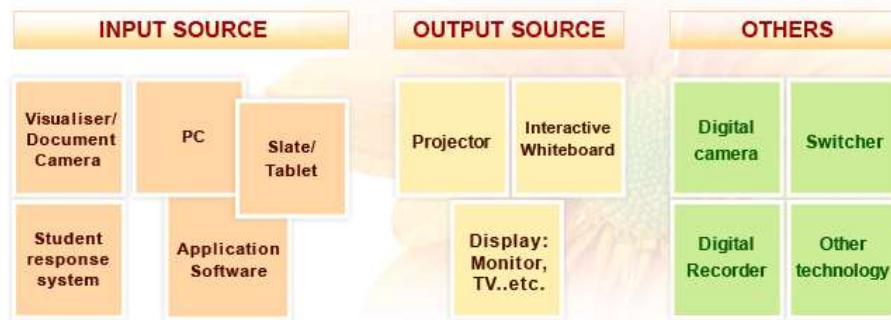
In India students strength is increasing day by day due to growth of population, awareness about advantages of education and govt. policies & facilities to promote education. Indian govt. is providing free education, free books, free dress, free mid day meal and scholarship etc. it is not easy to do all these because of geographical structure, infrastructure and economic problem of country. ICT can play an important roll in achieve them.



India has the third largest system of education in the world, next only to USA and China, with more than 500 universities and around 30000 colleges. 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 including its multilingual conversion, capacity building of teachers and students in ICT skills and state-of-the-art infrastructure along with networking and internet connectivity via Virtual Private Network (VPN) / broadband connectivity for disseminating the content and affordable access devices so that it reaches the doorsteps of the learners. The ongoing National Mission on Education through ICT (NMEICT) is a major initiative of the Govt. of India in this direction with an aim to leverage the potential of ICT in providing high quality personalized and interactive content, free of cost, to all the learners.

In order to use technology to help achieve the goals of education in a better and more effective way, one has to be first of all clear about what our expectations are from the education system, what and how do we want our students to learn and what type of individuals our classrooms should produce - rote learners or those with an analytical mind having an in-depth understanding of the subject?

Educational ICT tools can be divided into 3 categories: Input source, Output source and Others.



## ICT RANKING OF INDIA :

Mobile phones are playing a big role in improving ICT access across the world. India's efforts to capitalise on the information and communication technology revolution are far from spectacular when it comes to numbers, going by the latest country rankings and associated data released by the International Telecommunication Union. The basis for the ranking is an ICT Development Index (IDI).

India has been ranked 121st among 157 countries in terms of progress in the realm of information and communication technology (ICT) in a newly-released report of the International Telecommunication Union (ITU), which makes an annual assessment based on a wide range of parameters and data.

It comes in the wake of the Broadband Commission for Digital Development, in a recent report, ranking India 145th among nearly 200 countries in terms of the percentage of individuals using the Internet and 106th in the case of mobile broadband penetration.

"Out of a total of 145 million young Internet users in the developed countries, 86.3 per cent are estimated to be digital natives, compared with less than half of the 503 million young Internet users in the developing world. Within the next five years, the digital native population in the developing countries is forecast to more than double," the report said. And that will make a difference to these countries.

## POLICIES & PLANS OF GONT. OF INDIA TO PROMOT ICT IN EDUCATION:

### SWAYAM PROJECT :

The Union Cabinet chaired by the Prime Minister, Shri Narendra Modi, today gave its approval for signing of a Joint Declaration of Intent between the Ministry of Human Resource Development (MHRD) and the U.S. Department of State for cooperation in the field of higher education for Study Webs of Active-earning for Young Aspiring Minds (SWAYAM), a programme for online education. Under the cooperation, the SWAYAM platform server will be based in India and US universities will be invited to offer post-graduate academic programs with certification on the SWAYAM platform. The new Indo-US Partnership for Online Education (IUPOE) programme will comprise a mechanism that will enable the top universities of the US (top 100 in global ranking ) to create and share post graduate online courses (and associated assets) on the Indian "SWAYAM" platform. SWAYAM is an online platform of the Ministry of HRD through which online programmes/courses will be offered to students in India. Each American University will share courses created by its top educators. The cooperation programme will be integrated to strengthen the National Mission on Education through the use of ICT (NMEICT) in India.

### AAKASH PROJECT

It is not first time, initiation and actions were taken already by govt. of India. In INDIA govt. has started to distribute TAB & LAPTOPS to students to promote education with ICT.

Before Turkey, and before Thailand, it was the [Aakash](#) project in India which excited the imagination of many proponents of putting huge numbers of tablet computers into the hands of students in a developing country. That project has moved forward in [fits](#) and [starts](#), but is only one of numerous efforts to introduce tablets at laptops across the continent-sized South Asia country. Large efforts in [Rajasthan](#) have recently been announced, following on efforts which began earlier in states like [Uttar Pradesh](#). Initiatives across India will be particularly interesting to monitor, given the scale at which they will be occurring, and the fact that there is already a

great deal of [local knowledge](#) about various approaches that have worked, and that haven't, based on earlier educational technology programs in the country.

The aspiration to create a "Made in India" computer was first reflected in a prototype "Simputer" that was produced in small numbers. Bangalore based CPSU, Bharat Electronics Ltd manufactured around 5,000 Simputers for Indian customers from 2002–07. In 2011, Kapil Sibal announced an anticipated low-cost computing device to compete with the One Laptop per Child (OLPC) initiative, though intended for urban college students rather than the OLPC's rural, underprivileged students. A year later, the MHRD announced that the low-cost computer would be launched in six weeks. Nine weeks later, the MHRD showcased a tablet named "Aakash", not nearly what had been projected.

**Aakash** a.k.a Ubislate, is an [Android-based tablet computers](#) promoted by Government of India as part of an initiative to link 25,000 colleges and 400 universities in an e-learning program. It is produced by the British-Canadian company [DataWind](#). It is manufactured by the India-based company Quad, at a new production centre in [Hyderabad](#), with a planned trial run of 100,000 units. The tablet was officially launched as the *Aakash* in New Delhi on 5 October 2011. The Indian [Ministry of Human Resource Development](#) announced an upgraded second-generation model called [Aakash 2](#) in April 2012.

The Aakash is a low-cost tablet computer with a 7-inch [touch screen](#), [ARM 11](#) processor and 256 MB [RAM](#) running under the Android 2.2 operating system. It has two [universal serial bus](#) (USB) ports and delivers [high definition](#) (HD) quality video. For applications, the Aakash will have access to [Getjar](#), an independent market, rather than the [Android Market](#).



While it was once projected as a laptop computer, the design has evolved into a tablet computer. At the inauguration of the "National Mission on Education Programme" organized by the Union HRD Ministry in 2009, joint secretary N. K. Sinha had said that the computing device is 10 inches (which is around 25.5 cm) long and 5 inches (12.5 cm) wide.

India's Minister of Human Resource Development, Kapil Sibal, unveiled a prototype on 22 July 2010, which was later given out to 500 college students to collect feedback. After the device was unveiled, OLPC chairman Nicholas Negroponte offered full access to OLPC technology at no cost to the Indian team.

The Indian Ministry for Human Resource Development announced the launch of a new low cost educational tablet the "*Aakash*". Developed by the London-based company DataWind with the Indian Institute of Technology Rajasthan, the Aakash has been described by some as potentially heralding a new 'Internet revolution' within India education, doing for educational computing what the mobile phone has done for personal communications over the past decade. Following on a [visit](#) by Indian HRD Minister Kapil Sibal in October, DataWind CEO Suneet Singh Tuli stopped by the World Bank yesterday to [talk about the Aakash](#), and more broadly, about sustainable business models to drive the broad adoption of computing and Internet devices in the developing world.

India's finally got its much hyped ultra-low-cost tablet, Aakash.

*"The rich have access to the digital world, the poor and ordinary have been excluded. Aakash will end that digital divide,"* Telecoms and Education Minister Hon. Kapil Sibal said.

The tablet runs on [Android 2.2](#) (Froyo) and comes with a 7-inch resistive touch screen with 800x480 resolution and weighs 350 grams. The tablet has a 256MB of RAM, a 32GB expandable memory slot and two USB ports.

As part of an initiative by the Chhattisgarh Chief Minister Raman Singh, one lakh final year students in degree colleges will be given tablets by June of this year. The state's government has tied up with Ricoh India for the supply of these tablets. In addition, 14,000 laptops will also be given to students in medical and engineering college.

In a statement to PTI, Chhattisgarh Infotech and Biotech Promotion Society (CHiPS) CEO AM Parial said, *"It is an initiative of our Chief Minister. Under the project we will distribute around 1 lakh tablets to students in final year of their graduation in any stream. For tablets, we have given contract to Ricoh India."*

Same way other state governments are also taking initiation for education through technology.

Free laptop distribution scheme of Uttar Pradesh Government was the scheme of the [Government of U.P.](#) headed by Hon. Chief minister [Akhilesh Singh Yadav](#). Under the scheme 1.5 million laptops to Class 12-pass students of the state were distributed. The laptops, which operates in [Hindi](#), English and [Urdu](#). The beneficiaries included students passing high school and intermediate examination conducted by [Uttar Pradesh Secondary Education Board](#), Poorva Madhyama and Madhyama of [Sanskrit](#) Education Board, Munshi/Maulvi and Alim of [Madrasa](#) Board. [CBSE](#), [ICSE](#) and [ISC](#), besides students of recognized ITI and polytechnics where minimum eligibility for admission is high school or equivalent, are also eligible for the benefit.

The Odisha state government announced that it would start distributing [free laptops](#) to meritorious students, who have passed the +2 examinations, from August 15. This in line with the commitment made by chief minister [Naveen Patnaik](#) while unveiling the state [youth policy](#) in April this year.

The ambitious free laptop scheme of the Tamil Nadu government, under which 68 lakh laptops are to be distributed to government-aided higher secondary school and college students, is all set to roll this week.

Under the scheme, Tamil Nadu Chief Minister J. Jayalalithaa that will be launched on September 15, the govt. will distribute 9.12 lakh laptops this year and the balance in the next four years. While the whole project will entail a cost of Rs. 10,200 crore, the government has allocated Rs. 912 crore for the distribution of the 9.12 lakh laptops in the first year, a senior government official told PTI.

#### **ADVANTAGES OF ICT FOR STUDENTS :**

"We are preparing our children to grow up in the 21st century where they are going to have to deal with a wide variety of different devices, software packages and platforms, Android, Linux, Microsoft, Apple, Google, open-source, and so on. If we don't prepare them for that we are failing in our job."

Cell phones and especially smart phones that can access online dictionaries and Wikipedia and the social media are useful though unacknowledged tools for language development.

Following are points where good sign can be seen among the students.

The positive impact of ICT use in education has not been proven In general, and despite thousands of impact studies, the impact of ICT use on student achievement remains difficult to measure and open to much reasonable debate.

Positive impact more likely when linked to pedagogy It is believed that specific uses of ICT can have positive effects on student achievement when ICTs are used appropriately to complement a teacher's existing pedagogical philosophies.

'Computer Aided Instruction' has been seen to slightly improve student performance on multiple choice, standardized testing in some areas.

Computer Aided (or Assisted) Instruction (CAI), which refers generally to student self-study or tutorials on PCs, has been shown to slightly improve student test scores on some reading and math skills, although whether such improvement correlates to real improvement in student learning is debatable.

## **TEACHERS ROLL FOR EDUCATION BY ICT :**

Teachers feel confident about how to use technology, and how to integrate it into their teaching and assessment. "Just because a teacher can do it does not mean they can teach it." They must be equipped to plan and structure their lessons using technology efficiently and effectively.

Involve as many people as possible. Not all teachers will have the same level of commitment. Young teachers are often more aware of the possibilities than management. Keep tabs on enthusiastic and reluctant adopters. Publish a road map on the staff notice board of expected key outcomes and learning milestones. Communications are important. Help teachers understand the advantages and differences of digitization and how it will improve teaching and learning. Help teachers overcome their fears of technology. Help them overcome fears of being shown up as technologically incompetent in class. Teachers often feel isolated. Support: moral, technological and professional is vital. Failure breeds failure; success, success. Make sure everyone has the technology they need to do their job, or teachers may see the effort as a failure. Applying new technologies to the same old way of doing things is not the pathway to success. Create learning communities/support groups within the institution to provide technological understanding and help, and to foster new ideas for using technology in the classroom.

Digitization in education is a rapidly evolving field and teachers need to be kept abreast of the latest developments in order to feel in command. But, as already mentioned, training must not be haphazard but matched to individual needs.

## **SOME BARRIERS :**

### **Avoiding nature of peoples:-**

In general the attitude of peoples is not of acceptance of ICT. Peoples are ignoring the importance and need of ICT. When peoples are having problems with themselves mentally or technically, they put the blame on technology.

Peoples think technology means solution for all problems in magic way, which is not practically possible. Peoples have to develop themselves also.

### **Economic problems:-**

Developing countries like INDIA and other asian countries have financial problems also. Economic positions of common peoples are not good, so it is difficult to afford for computer, tab, and android phone.

### **Lack of good quality infra support:-**

In developing countries like INDIA, electricity, network, and other facilities are not available. Peoples are not getting proper power supply if they are getting that not in proper standard. Same is with the network, telecommunication companies are just making money not providing proper network.

### **Gadgets maintenance problems:-**

In developing countries, all gadgets like laptop, tab, and android mobile have the maintenance problems. Technology is changing very fast, next morning we can see new model in market, and there is no service facilities for old models. Govt. don't have any clear cut policy on service part or customers education for proper use of gadgets.

### **Social and culture scenario:-**

Social and culture structure of INDIA and Asian countries is different from western culture. Using technology among the common people is not easily acceptable. Society raises the voice even against the use of mobile by girls.

Browsing internet is not safe this is one of the reason that society is concern with cultural and social loss of children's. It is very difficult to safe guard the children's from porn sites.

### **Computer skill and English language problem:-**

Even now a day's computer and English is not common among the common peoples in INDIA. Still 70% of rural school don't have facility of computer and English is also a problem to students, and both are necessary for education with ICT.

## **FEAR & LIMITATIONS OF MISSUSE OF GAZETTS :**

In the Asia-Pacific countries studied, a range of factors were seen as inhibiting the use of new ICTs. These factors include:

- high cost of the ICTs leading to restriction of access to the new technologies;
- conservative attitudes – people are comfortable maintaining the status quo, doing things the way they are used to;
- lack of deregulation and government legislation which gives monopoly to a few information technology companies;
- poverty and harsh economic climate;
- infrastructural problems such as inadequate telephone lines and lines cutting off when someone is logged onto the Internet;
- lack of basic education and computing skills;
- political culture which discourages open sharing of information

The history of electronic technologies in schools is fraught with failures.

Computers are no exception, and rigorous studies show that it is incredibly difficult to have positive educational impact with computers. Technology at best only amplifies the pedagogical capacity of educational systems; it can make good schools better, but it makes bad schools worse.

Technology has a huge opportunity cost in the form of more effective non-technology interventions.

Many good school systems excel without much technology.

The inescapable conclusion is that significant investments in computers, mobile phones, and other electronic gadgets in education are neither necessary nor warranted for most school systems. In particular, the attempt to use technology to fix underperforming classrooms (or to replace non-existent ones) is futile. And, for all but wealthy, well-run schools, one-to-one computer programs cannot be recommended in good conscience.

### ***Technology doesn't cure all educational ills or technology alone is insufficient as a solution.***

**First**, in those cases where directed student motivation is assured, technology may lessen the burden of teaching. Some cases of tertiary or adult education may fall into this category.

**Second**, targeted use of computers in schools, for example, as an aid to teach computer literacy, computer programming, or video editing, etc., are important as long as those uses are incorporated only as a small part of a well-rounded curriculum.

**Third**, technology can help with the administration of schools – record keeping, monitoring, evaluation, etc. – as long as the school system is able to fully support the technology.

**Fourth**, in richer environments, where the cost of educated labor is relatively high, careful use of well-designed software may have value in fundamental education, particularly for remedial or drilling purposes. Solutions offered by, for example, Carnegie Learning fall into this category, although it should be noted again that effective use of these kinds of technologies must occur in the context of an otherwise well-run school system.

**Fifth**, again in rich environments, where the basics of education are assured, where teachers are facile with technology, and where budgets are unconstrained, widespread use of technology, even in a one-to-one format, might benefit students. Warschauer does find that certain uses of computers enhance computer literacy and writing skills, but these outcomes are limited to well-run, well-funded schools; they are notably absent in underperforming schools, even in the United States.

## **SURVEY REPORTS OF SCHEMES OF GOVT.OF INDIA :**

A survey done by a private company has revealed that eight of 10 students across Chennai and Madurai seemed to be happy with the quality of the free laptop provided by the Tamil Nadu government.

The report also says that 100 per cent of students perceive that there had been significant improvement in their technical and academic skills.

IMRB international, a research and insights organization, did the survey sponsored by Intel and was released by state IT secretary T.K. Ramachandran during the Digital India Summit 2014 organized by ICT Academy of Tamil Nadu on.

Explaining the objectives of the survey, Biswapriya Bhattacharjee, group director, IMRB, said that they wanted to determine the impact of the Tamil Nadu government's free laptop distribution scheme on the youth of the state by way of their technical knowhow, attitude to laptop usage and spill over impact of computer usage on the society at large.

The survey conducted in five arts and science colleges in Chennai and Madurai pointed out that about half the girl students spent more time with the laptop, besides 75 per cent of the time spent being for education related activities. The final outcome of the report was that the students were able to identify and utilize the device for multiple purposes.

Releasing the report, Mr Ramachandran said that the survey augurs well for the state that the laptop scheme had reached the students and provides positive results. "We have distributed over two million laptops to students in the state. The report shows how students have welcomed the scheme and how it had made a big impact in their lives," he said. Listing the various initiatives taken by the state government, the IT secretary said his department had plans to come up with an SMS gateway and e-payment mechanism soon.

In field surveys with 450 students across 13 schools in Hyderabad, India, we looked at 14-year-old student access to and use of technology, including mobile phones. One of the largest trends we found in our survey was the divide in access to technology between male and female students. We found that while 41% of males are cell phone users, only 35% females are. More strikingly, we found that only 15% of females access Internet via mobile phones, compared to 45% of males. Of note, few students own cell phones, and the majority use their parent or a relative's phone.

it found that 37% of APS students play games on mobile phones, 29% listen to music, 13% make phone calls, 15% send and receive text messages, and 6% view videos. This revealed that the majority of these students prefer using phones for entertainment, as only 28% of the children opt to use phones for communication purposes.

One problem seen in not only in UP but also all over India is as follows';

The Uttar Pradesh government's 'free laptop' scheme may have been launched to uplift the education standard in the state, but its beneficiaries seem to have a different goal in mind. It has been found that students have been trading these laptops on e-marketing portals for easy money.

The incident came to light when it was found that a mathematics teacher of the private Munda Panday inter college sold a laptop for Rs 14,000 to a Rampur resident through an e-tailing site. On further investigation, it was found that he had purchased the laptop from the father of one of his female students who had received it under the scheme. District inspector of school, Sarwan Kumar Yadav said, "The chief minister wants to make the students more tech savvy and laptops are the best equipment for imparting e-education. We are saddened to hear that the students are selling their laptops." He said that the matter of this teacher of a private inter college selling a laptop distributed under the scheme will be looked into and action will be taken accordingly.

As per earlier news reports, some such laptops had also been sold earlier in other parts of the state. Free laptops given to Govt. school students being sold online

[India -Tamil Nadu-Coimbatore](#)

#### **Dealers of used laptops are purchasing from students and selling them,**

In a serious misuse of the incentives provided by the government to encourage education, several instances of students selling the free laptops issued to them have come to light in Coimbatore.

The laptops, which are specially manufactured for the Government scheme, were being purchased by computer dealers and they put these up for ssale in online classifieds companies such as 'quikr' and 'olx.'

The Aam Aadmi Party (AAP) on Monday sent a petition to the Chief Minster's Cell seeking the State Government's intervention in stopping this practice.

A petition was also submitted to the district administration at the grievances meeting.

The AAP district secretary, S. Mohamed Rafi, told *The Hindu* that this was a flagrant misuse of taxpayer's money. Purchase of these laptops was equivalent to buying stolen goods.

Mr. Rafi suggested that to prevent such diversion, beneficiaries of the free laptop schemes must be told to show it to their school headmasters periodically and also providing the laptops only to those from economically weaker sections of the society.

Also, the specification of the free laptop given to the student must be recorded in the board examination marks sheets or the



transfer certificates.

### **CONCLUSION AND RECOMMENDATION :**

The result of study shows that students and teachers are ready to use ICT in education. Computer, laptop, tabs, etc are just gadgets, need is of pedagogy to use ICT.

Although still a small percentage of the most frequently students used apps (10.4 percent), search engines, online encyclopedias, and libraries are used by undergraduate students. Furthermore, a significant number (76 percent) disclose using apps to find academic information. The apps they use are familiar and allow mobile access to popular academic web sites they can find on their desktop computers. Most of the students are using these for playing games, listening music, watching moving etc. These sources are those which are online representatives of traditional sources of information such as encyclopedias, dictionaries, translators, or libraries, or they are open-ended resources such as search engines where the user looks for information that either does not have an app or the user does not know that it exists.

Most of the majority of the students in this study is part of the so-called millennial generation. Having grown up using mobile, computers and the internet, they are digital natives and have their own views and expectations of information. They want information fast, are comfortable with non-linear information seeking, and have little tolerance for delays or limited.

Studies of the use of electronic sources corroborate the importance of convenience as a factor in searching for information. The search engine is perceived as an “easy” tool and requires little specialized knowledge or skills. Google searching produces immediate results with instant access to documents whereas others imply wait time, delays, and the need to have a specific skill set.

Govt. of INDIA is investing money on projects; ignoring teacher’s capacity building is creating some problems. Students should provide proper training how and why they should use ICT.

Govt. Should approach to schools primary, secondary and tertiary organise clubs for a start. We can call them computer clubs in which we teach people the fundamentals of computer appreciation, even how to use a telephone properly because... many people don't know how to use them.

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