A Social Internship
Report on

DIGITALIZATION OF EDUCATION

For 3rd Semester B. Tech Course Requirement

Submitted by

BISWAJIT TERON (200710007016)
HIRAK JYOTI DAS (200710007024)
KULARAJ TALUKDAR (200710007029)
PARTHA PRATIM DAS (200710007039)
SHOAIB ALOM (200710007052)

Department of Computer Science & Engineering
JORHAT ENGINEERING COLLEGE, Jorhat
Assam Science and Technology University
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ACKNOWLEDGEMENT

Firstly, we **Biswajit Teron(200710007016), Hirak Jyoti Das(200710007024), Kularaj Talukdar(200710007029), Partha Pratim Das(200710007039) and Shoaib Alom(200710007052)** students of **Jorhat Engineering College** would like to express our sincere gratitude to professor **Dr. Rupam Baruah, HOD** of **Computer Science and Engineering** for providing us an opportunity to do internship at Jorhat Engineering College, for us it was a unique experience to study about the need of digitalization of the education system, this internship period was a great chance for learning and professional development. Next, we would like to express our deepest gratitude to professor **Mrs. Nilakhi Saikia** of **Computer Science and Engineering** department for providing instructions and support throughout the internship period.

Without Maam's support this project would have been very challenging.

Finally, we would like to extend out gratitude towards our family
and our friends and all the other professionals for helping us in carrying out this work successfully.

CERTIFICATE OF COMPLETION

This is to certified that the following students –

1. BISWAJIT TERON (ROLL NO – 200710007016)
2. HIRAK JYOTI DAS (ROLL NO – 200710007024)
3. KULARAJ TALUKDAR (ROLL NO – 200710007029)
4. PARTHA PRATIM DAS (ROLL NO – 200710007039)
5. SHOAIB ALOM (ROLL NO – 200710007052)

of the second semester, **Computer Science and Engineering Department**, JORHAT ENGINEERING COLLEGE, have successfully completed Internship – I (SAI – Social, Code : SI181321) on the topic **"DIGITALIZATION OF EDUCATION "**, under the guidance of Dr. Rupam Baruah sir, Head of Department, Computer Science and Engineering Department, Jorhat Engineering College, as per the ASTU second curriculam.

Mrs. Nilakhi Saikia
Internship Guide & Assistant Professor, Computer Science & Engineering, Jorhat Engineering College, Jorhat, Assam

Dr. Rupam Baruah
HOD & Professor, Computer Science & Engineering, Jorhat Engineering College, Jorhat, Assam

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INTRODUCTION

In the today's modern world, where the world is advancing into a greater and advance future and rapidly evolving its various information and resources, the digital aspect in this advancement of the human world is of a very great importance. And as we speak of digitalization, the spread of digitalization among the masses of people is very important factor for development as a whole. That is the part where the concept of digitalization of education comes in the talk of conversation.

Digitalization in education refers to the use of digital technology to teach students and build a good or understandable idea about the technology and its applications. Digitalization in education, to be precise, refers to the use of desktop computers, mobile devices, the Internet, software applications, and other types of digital technology to teach students of all ages.

As we all know, the necessity of technology in this era of modern society is immense and nobody can deny the fact that as we all are progressing this necessity is also increasing rapidly. We are living in the digital age. Never in the history of humanity was a normal person this empowered in a digital world. Everyone has a level playing field in the digital age.

In the education sector, when it comes to the topic of digital learning, we have no doubt made progress in the recent years, but the progress which is actually needed to be really beneficial to the students in not quite adequate till date. We need to have certain standard criteria for the digital learning in the country so that get what they need to be more knowledgeable about digital equipment and software. As times are going, modern students along with the other people require to have basic knowledge of technology, and at times in-depth knowledge too for specific tasks. This requires the education with proper system and organized ways to teach the students the multiple aspects of digitalization and help the others along with their knowledge.

ABSTRACT

Education plays important role in overall development of individuals thereby contributing immensely to the overall development of a nation. Education globally is one of the important sectors to witness revolutionary changes in recent times. This happens primarily because of digital revolution taken place all across the globe. The typical Indian classroom was once characterized by students sitting through hour-long session, teacher used to discuss the things without any visual presentation. Now, thanks to digital technology, it is making life easier for both students and educators. Digital education is fun learning for all cadres and particularly effective for child learning as the innovative audio-video feature boosts the cognitive elements in a child's brain. Schools are increasingly adopting digital teaching solutions in their academic, and trying to make the classroom environment more inclusive and participatory. The INFOTAINMENT combination involved in digital education makes it more practical, applicable and relatable to our life and surroundings in an interesting manner. In India, from last few years there has been a considerable rise in Digital and Live Virtual Classrooms at different levels of learning. With evolution of technologies such as cloud, virtual data centres and virtualization there is huge potential for technology to be integrated with the Education Industry. The purpose of this research is to give overview of digital education,

components of digital education, benefits of digital education in India, the future scope and possible challenges of an Indian society for moving towards digital education.

SCHEMES IMPLEMENTED FOR DIGITALIZATION OF SCHOOLS

National Optical Fibre Network or Bharat Network : This initiative aims to provide high speed internet connections to around 2,50,0000 gram panchayats at the cost of 40,000 crore. Through Bharat net government promises that they ’l l provide 100 Mbps bandwidth speed at each gram panchayat so that everyone can access digital services (like e-learning , health, e-commerce) specially in rural areas. Recently PM Narendra Modi launched ’Har Gaon Mein Optical Fibre ’ program in Bihar.

National Knowledge Network (NKN) : NKN is multi-gigabit national research and education network which aims to provide high speed network backbone for educational institutions in India. It was established as high bandwidth network to connect all eminent institutions like IITs , IIMs , Universities , research labs up to the district level. They have already connected over 1,500 institutions which is a very good sign of collaborations. Budget allocated for this is around 6,000 crores.

Vidya-dan : This initiative aims to provide contents to rural part of india developed by teachers and educators from urban part so that they can access material sanytime anywhere at zero cost.

Digital Infrastructures : There are some initiatives which praiseworthy like creation of DIKSHA (Digital Infrastructure for Knowledge Sharing)- this is for K-12students where students can access huge collection of materials through web portal and mobile application. Swayam Prabha TV channels - this aims to provide5lectures over 32

channels for those who don't have internet access . E- pathshaala app for 9-12, UG and PG students where can find materials , notes and lectures.

IMPROVEMENT OF STUDENTS BY DIGITALIZATION

PERSONALISED LEARNING : One of the biggest benefits of digital learning is that it allows teachers or course providers to cater their learning plans or curriculum to the individual student. They can take into account the ability of the student and how they are progressing, then use this to make adjustments to allow for hurdles or quick progress. No two students are ever exactly the same, so why should the way they learn be.

MORE ENGAGING LESSONS : The traditional model of education involves a classroom, books, paper, one teacher and students. It's a model we're all used to, but for those of us who have finished our formal education, we know this wasn't always the most engaging method. Digital learning offers a larger range of delivery methods for learning. Imagery, audio and video content can all be integrated seamlessly into a lesson. All of this helps to make learning more fun, which in turn will raise the retention of the content taught in the lessons.

RECORDED CONTENT : It's easy to understand why; if you miss something in the lesson, you can just rewind and catch that point later. It also lets you do additional study in your own time to catch up. Say you didn't quite understand a point that the

teacher was making, but in order to get the rest of the lesson, you need to understand that point. When the lesson is recorded, you can take the time to expand on that point on your own, then revisit the lesson to further cement what you missed.

Accessibility Through Modern Technology : We used to rely on exchange students to be able to experience other cultures and languages, but now, all of that is accessible to everyone, regardless of their income or ability to travel. By the time digital students graduate, they will undoubtedly think globally and be more worldly than ever before.

It's Fun and Engaging ! : This is the no-brainer of all of the arguments for the benefits of digital learning. It's fun, and at the end of the day, it's a bit like the old saying, 'you catch more flies with honey than you do with vinegar . 'Students who experience fun or joy within their educational environment retain information and succeed at a much higher rate than those who don't.

ICT in School Education

Information and Communication Technology (ICT) in education is the mode of education that use information and communications technology to support, enhance, and optimise the delivery of information.

Research has shown that ICT can lead to an improved student learning and better teaching methods. According to a report, it has been proved that an increase in the use of ICT in education with integrating technology to the curriculum has a significant and positive impact on students' achievements.

Online interactions would facilitate learning without time constrains and it will be much more easier to conduct assessments and generate reports, since the necessary information doesn't have to be manually handled.

Enabling ICT in education, and making use of technology in education creates an easy-to-manage learning environment where the delivery of information is so much smoother and the learning easier.

Also, ICT is definitely the path to take for institutions, especially in countries like ours, as our growth is directly aligned with technology and the field of education is no exception. And assuring higher quality education for its students will define whether the institution should move forward or perish.

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 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.

• 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.

The scheme currently covers both Government and Government aided Secondary and Higher Secondary Schools. Financial assistance is provided for procurement of computers and peripherals, educational software, training of teachers, development of e-contents, Internet connectivity & set up of smart schools.

Financial assistance is given to States, CIET and SIETs on the basis of the approvals accorded by Project Approval Board (PAB) chaired by Secretary (School Education and Literacy). The project cost is shared

between Centre and States in ration of 75:25 except for the NER states including Sikkim where it is 90:10.

Under the existing Information Communication Technology in School Scheme as against the target of setting up of 150 more such schools, this Ministry has approved for coverage of 63 Smart School so far. The Smart Schools are being established in the Districts by conversion of one of the existing State Government schools to serve as a role model and Technology Demonstrator among the neighbourhood schools.

Challenges that remote learning is a disparity in access

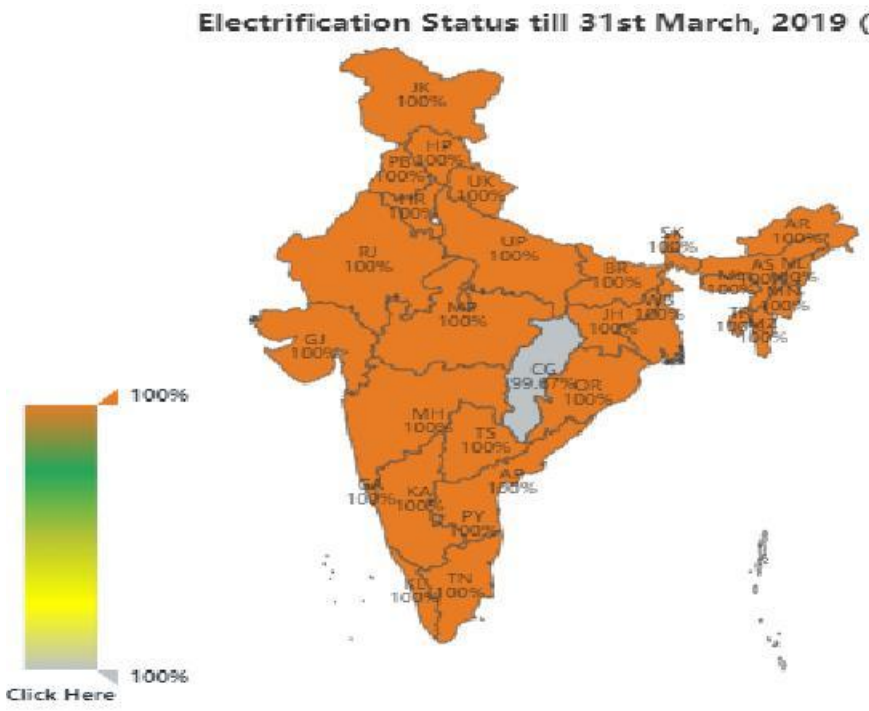
1) Unavailability of Electricity
2) No proper Internet connectivity
3)Unavailability of Devices like smartphone and computers for poor students

Electricity

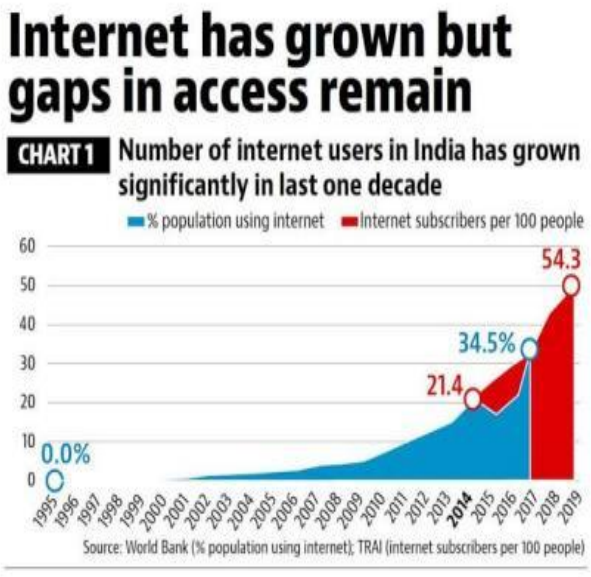
- Electricity coverage 99.93% (31 March 2019)(source Wikipedia)

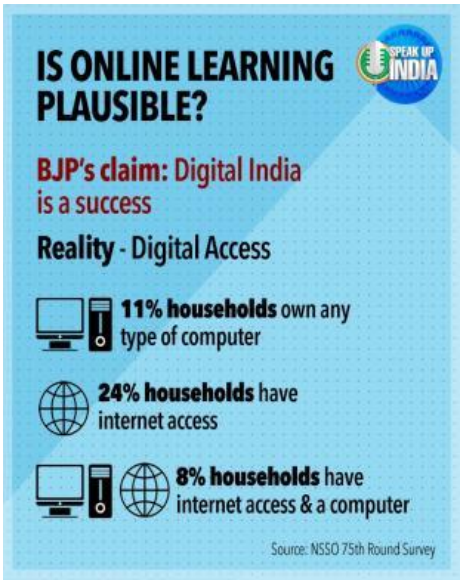
- However according to the definition of government electrification of a village is considered to be 100% by not considering that some of the homes are still not getting electricity

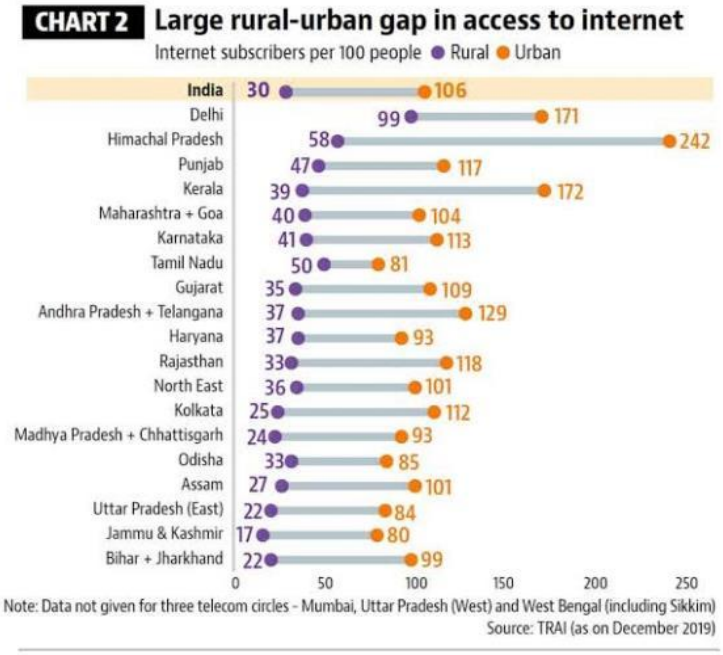
- Even after getting electricity connection frequent power
cuts is a major issue not only in villages but also in cities like Bengaluru and cities like Guwahati.



Connectivity gets better but parts of India still logged out







INTERNET CONNECTION

Just 24 per cent of Indian households have internet connections to access e-education, and there is a large rural urban and gender divide that is likely to widen the learning gap across high, middle and low-income families, according to a new UNICEF report.

Even as the number of internet users has been growing rapidly, there is still a large population with no access to the internet – particularly in rural areas, poorer states and in poorer households.

Poor internet speed and connectivity in different areas.

Users able to use internet.

Only 8% households have both internet and computer Facilities.

Unavailability of Smartphone Devices and Computers

At least 27 per cent students do not have access to smartphones or laptops to attend online classes, while 28 per cent students and parents believe intermittent or lack of electricity is one of the major concerns hindering teaching learning, according to a survey by the NCERT.

The survey with over 34,000 participants, including students, parents, teachers and school principals from Kendriya Vidyalayas, Navodaya Vidyalas and CBSE affiliated schools, has pointed out that lack of knowledge of using devices for effective educational purposes and teachers not being well-versed with online teaching methodologies, caused hindrance in the learning process.

"Approximately 27 per cent of the students mentioned the non-availability of smartphones and laptops. The maximum number of stakeholders have opted for mobile phones as a medium for teaching-learning during the COVID-19 period," the survey by the National Council of Educational Research and Training (NCERT) said.

Personal Challenges Faced by the Students and Teachers in the Process of Digitalization of Education

- Employees Feel Overwhelmed
- Teachers Using Non-Supported Apps
- Devices Fail Too Often
- Students Simply Aren't Engaged
- Network and Internet Connectivity
-

Employees Feel Overwhelmed : It's not uncommon for teachers
to struggle to adapt to new digital solutions. Learning new digital platforms, where to find documents, or who to ask for help all contribute to decreasing student participation and can even confuse them. All of this creates an overwhelmed employee and can diminish the learning experience.

Solution : One of the easiest ways to provide the proper support to overwhelmed employees is to create change champions within your school. Find team members who have a solid track record of adopting new technology and put them in a position to help those who are struggling.Turn your tech-savvy early adopters into authoritative voices that promote adoption and provide support. This directly solves the problem of teachers feeling overwhelmed

Teachers Using Non-Supported Apps : Not all technology is created equally, and in many cases, your teachers may prefer to use solutions not authorized by your district. This presents a significant challenge as it may fragment your user base and encourage staff to use unauthorized apps, resulting in a headache for your IT team, who now faces a tangled technological ecosystem.

Solution : Provide teachers and students with a unified experience that's based on standardized technological solutions and combined with effective training. Additionally, provide a robust content library teachers can contribute to and grow together. Always provide a way for teachers and students to provide feedback.

Devices Fail Too Often : A common mistake that school districts make is maintaining a fleet of devices that vary in age, make, and model to save money. However, device failure happens more often as these devices age. Since remote and digital learning relies on devices, device failure is becoming a significant pain point for
teachers.

Solution : School districts should strive to accommodate digital learning by creating a steady and reliable refresh cycle for all devices. Replace old technology with new standardized devices so districts will be in a position to maximize productivity and reduce the expense of repairs and maintenance.

Students Simply Aren't Engaged : Learning involves building a relationship between the educator and students. Moving to digital learning has meant that teachers need to develop new ways to engage students. However, keeping students excited and motivated has become significantly more significant. It's easy for students to become distracted when learning online, making it difficult for teachers to maintain control. How can teachers keep students engaged and absorbing new material ?

Solution : There are few ways that teachers can make use of digital learning to keep students engaged :

- **Personalize your course plan :** Since face-to-face contact is minimal, it's more important than ever to create a personalized plan that captures the attention of students. This can mean a variety of things, such as allowing students to mark up digital readings or creating a robust reporting system.

- **Create a consistent schedule :** When students are in the classroom, it's easy to stick to a specific schedule. That same structure needs to continue in the digital learning environment. Keep students on a structured program to keep them engaged.

- **Track student engagement :** There are a few new ways that teachers can track student engagement, such as when they log in to systems and how they participate within them. Teachers should track how engaged students are over time.

Solution To Digitalize Our Education

1)For network and internet connectivity we can increase the bandwidth of the networks. We can collab or partnership with private companies to increase network availability. that will increase popularity of companies .

2) Find team members who have a solid track record of adopting new technology and put them in a position to help those who are struggling .Turn your tech-savvy early adopters into authoritative voices that promote adoption and provide support. This directly solves the problem of fitting with modern technology.

3)We can ask help from various NGO s and initiatives for funding for buying devices. We can also approach companies to give some support which will also give a good effect on that company.

CASE STUDY

This survey is conducted to measure various views points and mindset on the topic of digitalization of education. Over 60 responses were considered for the case study based on our online survey. We have analysed by putting various problems faced in digitalizing educations. Our includes students, teachers , professors and various professionals of many fields. By this survey, we get to know the problems that were arise for proper way of centralization the (topic)

The problems :-
1) Internet Connectivity.

2) Network Problems.
3) Unavailability of Devices
4) Not able to fit with Modern Technology

We have analysed the responses of various Personalities which include peoples of diff. field , plotted in the form of pie charts. The solution to the problems that were arrived :

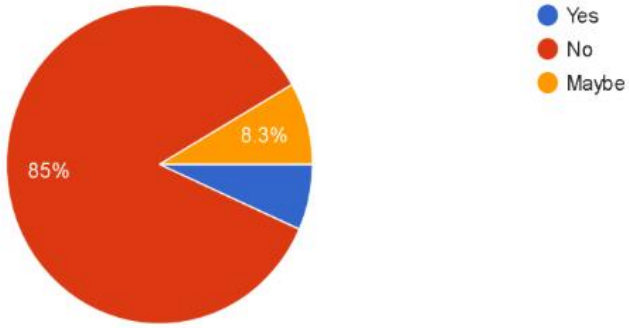
1)For network and internet connectivity we can increase the bandwidth of the networks. We can collab or partnership with private companies to increase network availability. that will increase popularity of companies.

2)Find team members who have a solid track record of adopting new technology and put them in a position to help those who are struggling .Turn your tech-savvy early adopters into authoritative voices that promote adoption and provide support. This directly solves the problem of fitting with modern technology.

3)We can ask help from various NGO s and initiatives for funding for buying devices. We can also approach companies to give some support which will also give a good effect on that company.

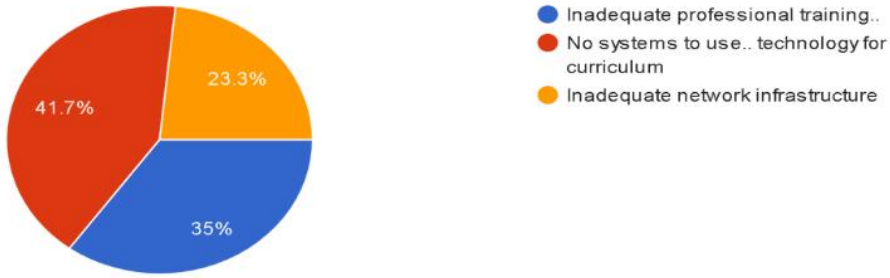
Do you think the present education scenario in government school is well enough for students to know about technology?

60 responses



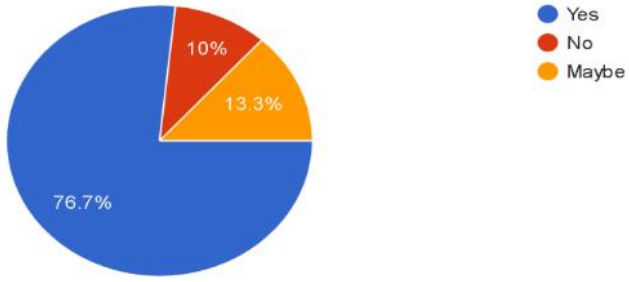
What are the critical issues facing technology in education?

60 responses



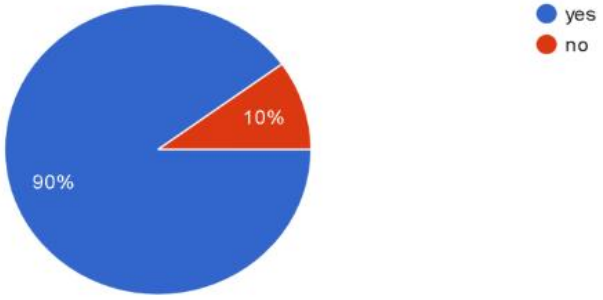
Do you think digital tools helps in Better understanding and is useful for learning fundamental s.

60 responses



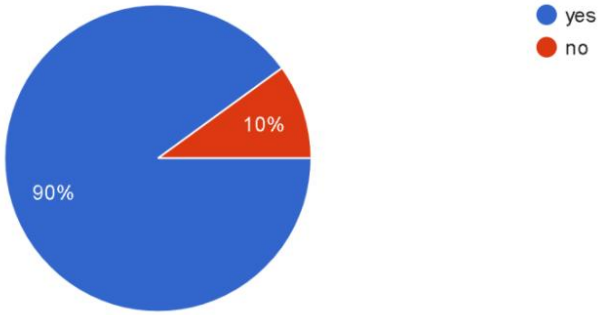
Do you think its time to change the curriculum into more technical aspects?

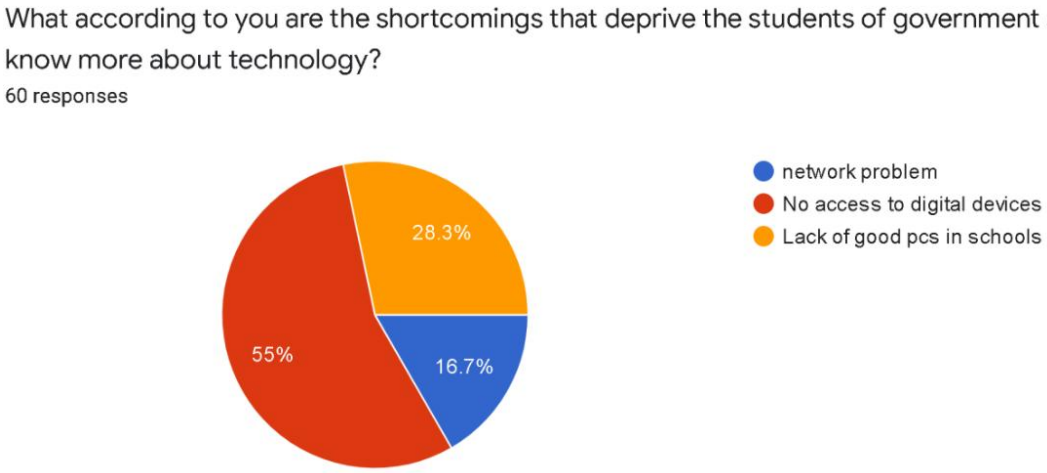
60 responses



"Donating the old computer to primary school to develop computer lab is the example of reuse/recycle." Can we upheaval the rephrase of computer in Contemporary society

60 responses





CONCLUSION

There is no disagreement over the fact that digitization of education is the requirement of the hour in order to match the educational environment and system prevailing all over the world, but at the same time it has to be analyzed as to how this system has to be adopted so as to nullify the adverse impact, of excessive dependence on electronic medium of information sharing, on the youth and protect

them from behavioral and psychological imbalances. At the same time it is the need of hour that policy makers come up with such system which is a blend of traditional and modern ways of teaching that is protecting the teacher and taught relationship along with promotion of digital education system. Also measures be initiated that the students do not have access to information which is not meant for them and may misguide them to wrong direction propelling unsocial behavior and violence thinking in them. We have to tackle our youth asset very carefully so as to convert them into meaningful population full of capabilities and responsible natives.

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