



ACTION RESEARCH ON:

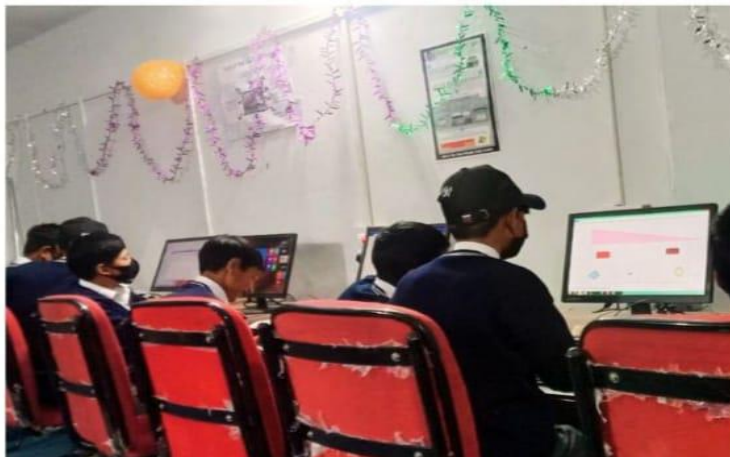


CENTRALIZATION AND DIGITIZATION OF SCHOOLS IN LEH DISTRICT

AN INITIATIVE BY EDUCATION DEPARTMENT

 Digitization
& Centralization of
Education (ERP)

UT LADAKH



SERVICES

- Integration of Employee records
- online attendance of employee and students
- Integration of students records
- Online Assessment and Evaluation

Submitted By:

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ACTION RESEARCH ON:
CENTRALIZATION AND DIGITIZATION OF
SCHOOLS OF LEH DISTRICT:
An Initiative by Education Department
UT Ladakh

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ABBREVIATION

ICT	Information and Communications Technology
E-Learning	Electronic Learning
ERP	Enterprise Resource Planning
DIET	District Institute of Education and Training
HOD	Head of the Department
VSK	Vidya Samiksha Kendra
CEO	Chief Education Officer
e-governance	Electronic Governance



Introduction

Centralization of records brings together all data into one place so it can be more effectively managed and accessed. As every organization relies on large number of data and information than ever before, the importance of having a centralized approach to store and management of data has become more crucial. People are steadily opting for digital solutions for their daily needs, considering the fact, the education sector is the most decision sector that can't afford to lag behind without the effective implementation of technology.

Technological advancement in every sphere of life has led many organizations including education sector to look for tech-based solutions for proficient management and safe keeping of their records. Now every organization feels it necessary to adapt the technology-based opportunities ending the age-old physical record management system. Educational institutions have to deal with a large number of records and require a lot of manual work for handling and storage. This leads to build-up of numerous issues and concerns related to storage, security and increased paper usage.

Benefits of Centralization and Digitization of records

- Supports collaboration and understanding of roles and responsibilities of all stakeholders.
- Supports greater transparency across all levels.
- Reporting and analytics are easier to understand.
- Continuous support in framing policies and strategies for the overall improvement of the institutions.
- Minimize negative impacts of inaccuracies and duplicities of records.
- Centralized control and monitoring of data by higher authorities.
- Data updating and reporting is faster.
- Reduce costs and saves time.
- Facilitates seamless communication among all the stakeholders, Teachers, parents, zonal and district officers.

- Help teachers and students to explore e-repository where they can have access to contents based on audio-visual, graphics and other tech-based **tools** like gamification, simulation, AI, VR etc.
- Increase accountability by providing student-driven environment.

In order to ensure operational efficiency and good governance in Education Department, UT Ladakh has introduced ERP software to centralize and digitize the records of students and teachers of all schools in Ladakh. Education department launched ERP in Feb. 2022 and started its implementation with the aim of achieving following objectives:

- Digitization of students' academic and non-academic records and employee service details for improved accessibility and analysis.
- To bring efficient and effective governance in the education department.
- To link all stakeholders of education department including Chief Education officers, Zonal Education Officers and HOIs of schools and provide a centralized information system.
- To enhance teachers' and students' learning by providing access to online resources.

Research Objectives

1. To assess the completion status of data uploading of students and teachers on ERP software.
2. To examine the perceptions of teachers towards digitization and centralization of records.
3. To explore the students' attitudes and perceptions towards online educational apps.
4. To check proper usage of ICT Labs and smart classes in the schools by students as well as teachers.
5. To bring awareness among students and teachers about modern technologies and their usage to make task easier and error free.
6. To see the curiosity of students and teachers towards modern technology-based Teaching Learning process.
7. To find out the challenges faced by teachers in implementing ERP software for the purpose of centralization of schools.
8. To find out number of schools who are still not having basic infrastructure facilities to implement ERP software.
9. To find number of schools who fall in no network zone.

Research Questions

1. What is Centralization and digitization of records?
2. What are the advantages of centralization of records?
3. What are the challenges faced by administration in the process of centralization of records?
4. What are the problems encountered by users at grass root level in implementing ERP software?
5. What will be the expected benefits for school administration in centralization of students' and employee records?
6. What will be the future perspective of this process?

Conduct of Research:

I have developed a questionnaire consisting of ten ICT based questions for students and used this questionnaire to conduct survey in some Government Schools of Leh district to check their understanding about modern technologies and learning platforms. I also wanted to check the availability of internet facility in schools which can assist in teaching learning process if used sensibly. Another objective of circulating the questionnaires was to get an idea whether the students are taking benefit of ICT labs and smart classes available in the schools.

I have also designed a questionnaire consisting of eleven questions and circulated among teachers to examine their behaviour towards the new transformation from manual system to centralization and digitization. Through this survey I also wanted to know what sort of challenges they are facing in implementing ERP software which have been used by education department for digitization of schools' records.

The following schools have been selected to conduct the survey for students, the principals and other staff have extended full cooperation during this survey.

S.No.	Name of the School	Zone
1	Higher Secondary School Khaltsi	Khaltsi
2	Higher Secondary School Skurbuchan	Khaltsi
3	Higher Secondary School Sakti	Kharu
4	Higher Secondary School Sumoor	Nubra

Research Methods

A survey research approach is used for the purpose of study. Google forms for students have been circulated to four schools and received around 187 responses. Another google form for teachers has been designed and being circulated to over 200 schools and we get around 122 responses from teachers of schools in different zones. We were expecting to receive responses from around 200 teachers but manage to obtain only 122 answers. The reason behind this may be due to unavailability of internet facility in some schools, lack of devices in schools and some of them might overlook surveys due to being overwhelmed with other responsibilities.

Research Problems

Some problems encountered while conducting this research are listed below:

1. I shared the questionnaire link to more than 200 government schools of Leh district and expected to get more responses, but received only 122 responses from teachers.
2. I could conduct the student survey in four schools of Leh district only because most of the students do not have personal devices or proper access to internet.
3. I didn't receive a proper training in research work and what I have presented in this study is based on self-study and investigation. So, there may be some unforeseen issues in presentation and execution of this research project.
4. The study could have turned out to be more informative and holistic if I would have been able to conduct the survey in all schools of Leh district.

Data Collection and Reporting of Findings

Questions for Students



Q.1 Are you familiar with the word “digitization”?

Q.2 Have you heard about:

- e-learning
- online courses
- learning apps
- VR
- Simulation
- AI
- Robotics

Q.3 How often do your teacher use ICT tools to make teaching learning interesting and effective?

Q.4 Which of the following platforms do you get access for learning

- DIKSHA
- NISHTHA
- PM VIDYA
- Byju’s
- Vedantu

Q.5 Which of the following method(s) of learning do you enjoy?

- Gamification
- Online quizzes
- Educational games
- Using interactive white boards
- Traditional class
- Practical based learning
- Group discussion
- Polls

Q.6 On which platform do you spend most of your time?

- Instagram

- Snapchat
- YouTube
- Netflix
- Educational apps
- games

Q.7 Which of the following device(s) do you have access to?

- Smart phone
- Tablets
- Desktop

Q.8 Rate the importance of IT subject in school curriculum.

Q.9 What you think are the disadvantages of modern technology?

Q. 10 Which of the following are AI-based application?

- Chat
- Google assistance
- Bing
- Gmail
- YouTube
- Facebook
- Whatsapp

Questions for Teachers

Q.1 Is digitization necessary for improving the standard of education?

Q.2 What sort of challenges you anticipate in centralization and digitization of school records?

Q.3 Digitization of school records leads to:

- Transparency
- Accountability
- Avoid duplicity
- Access online repositories/e-content
- Improves teaching learning process

- Not always reliable
- **Hindrance to real life social skill**

Q.4 Do you need IT based training, if yes which mode do you prefer?

Q.5 In the process of digitization, are your queries being heard and resolved timely by concerned technical team?

Q.6 Does your school head extend cooperation in the process of digitization and centralization of school records?

Q.7 Do you have WiFi facility in your school?

Q.8 Are you using your own mobile data for uploading and updating of school records?

Q.9 What sort of power supply does your school has?

- **Electricity**
- **Solar**
- **generator**

Q.10 How frequently do you use ICT Labs/Smart class/ CAL centre for teaching learning process?

Q. 11 Which of the learning platform(s) you are using to improve your teaching skills?

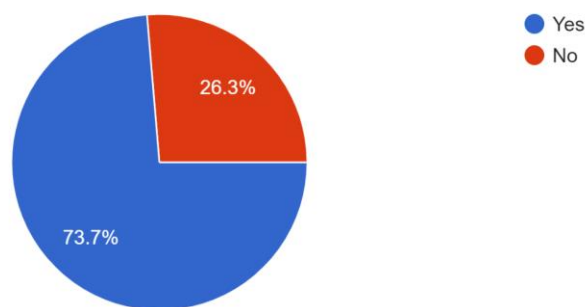


Analysis of students' questionnaires



Q. 1 Are you familiar with the word "digitization"?

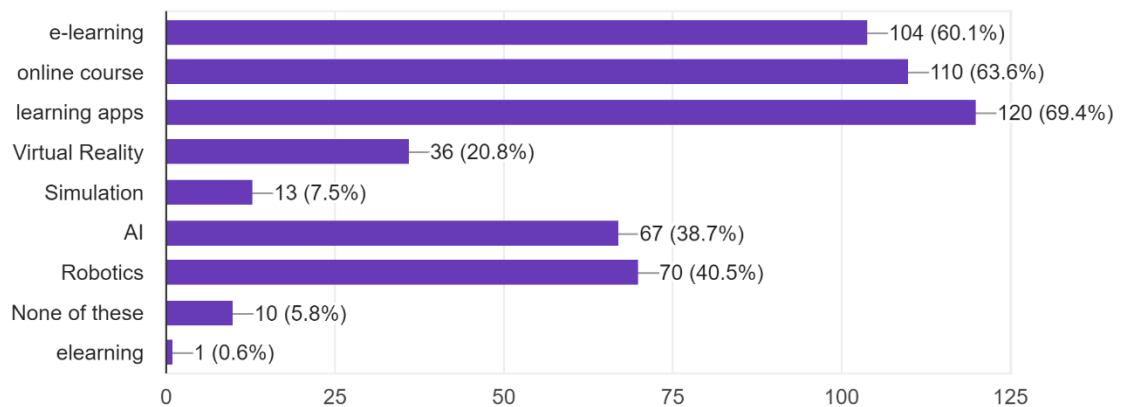
167 responses



The findings show that 73.7 % of students are aware of digitization and 26.3% are not aware of the word. This shows that most of the students studying in class 9th to 12th are using some or the other modern technologies to improve their learning. Nowadays students explore different learning platforms to enhance their learning. If they couldn't understand a topic well in the class, they learn the same topic from YouTube and other online sources. Teachers need to be more advanced and shouldn't limit themselves to the traditional way of teaching instead try to update themselves by adopting new pedagogies which can make teaching learning process more effective and innovative. The young generation is very much attracted to latest technologies so when teachers integrate these facilities in the teaching learning process, the students enjoy learning with sustain attention and curiosity. This also increase their self- confidence and self-esteem.

Q.2 Have you heard about :

173 responses

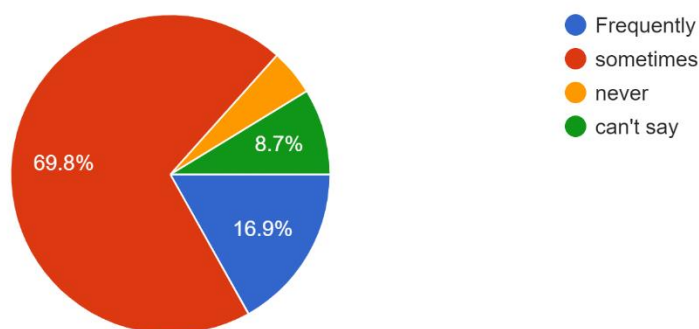


Among 173 responses, 60% of students have heard about e-learning, 64% of students express that they learn from online courses and 69% are using learning apps to improve their knowledge and understanding. This indicates that students don't limit themselves to traditional classroom learning but opt for other options to gain more understanding and clarification by exploring various resources and contents available online.

A smaller number of students are aware of simulation, virtual Reality, AI and Robotics. Schools should arrange career counselling to make them aware of these technologies and create interest among such employability skills. Further when students are taught using simulation and animated videos, they feel real world experience which creates interest, increase attention and develop critical thinking among them.

Q.3 How often do your teachers use ICT tools to make teaching-learning interesting and effective?

172 responses

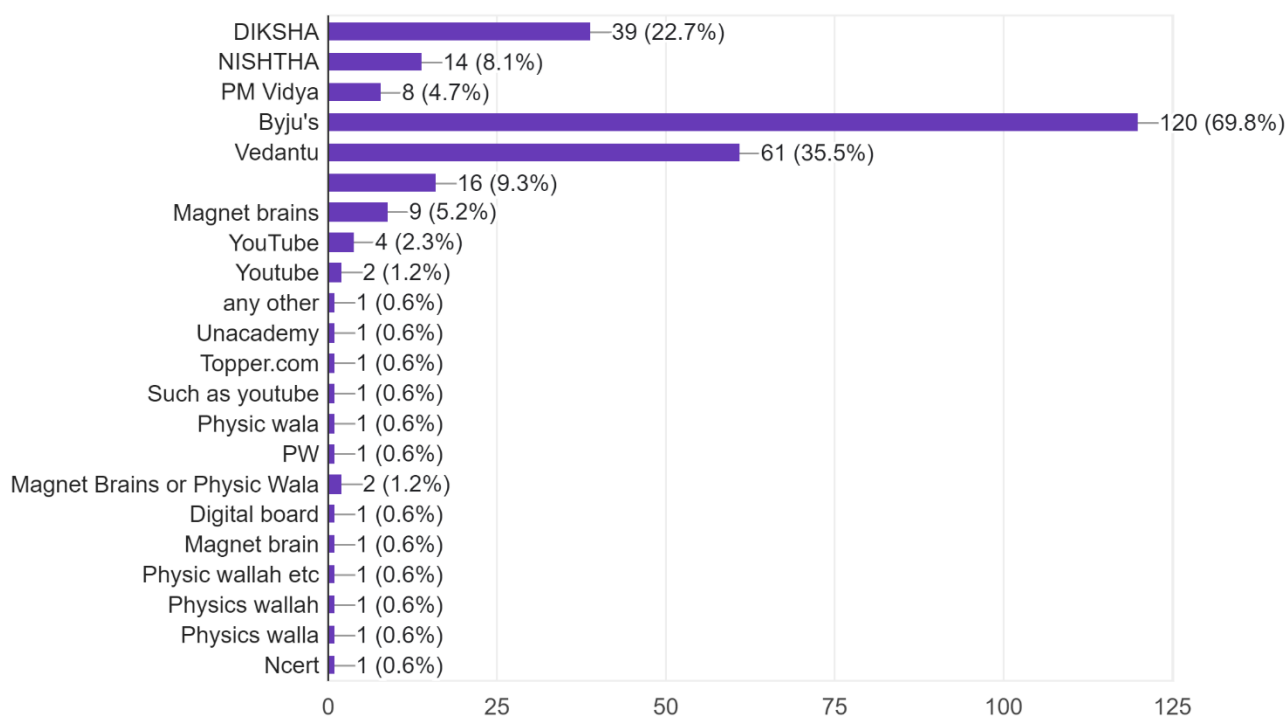


Most of the students (70%) express that teachers don't use ICT tools to improve teaching learning process, it seems that either schools don't have ICT labs or there is no IT instructor to use this facility. Another reason could be that teachers are not techno-savvy, they don't put effort to improve teaching by using innovative pedagogies by using various ICT tools. I think most of the teachers are not technically sound enough to integrate such tools or facilities in the teaching learning process

17 % of students selected for survey say that some teachers use ICT facilities frequently while teaching to make it interesting and engaging. While 9% of students couldn't explain maybe they are not aware of ICT tools.

Q.4 Which of the digital platforms do you get access for Learning?

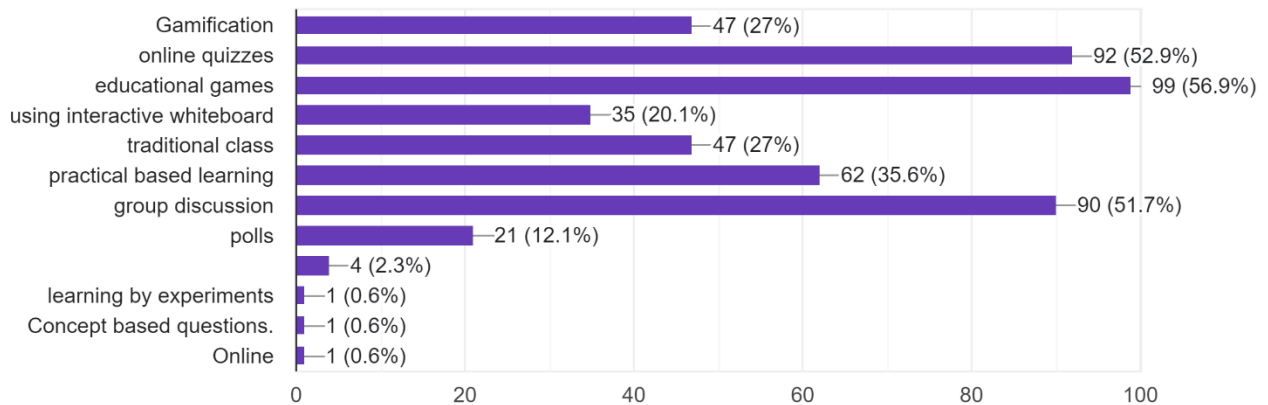
172 responses



From this figure it is clear that 70% and 36% of students are using Byju's and Vedantu learning apps respectively. This shows that they are exploring other alternatives for learning and not sticking just on the traditional class room, to get in-depth understanding of the topics. Very few of them are accessing NCERT based learning apps, reason being they not aware of this apps. There are few students who have access to other important learning resources.

Q. 5 Which of the following method(s) of learning do you enjoy?

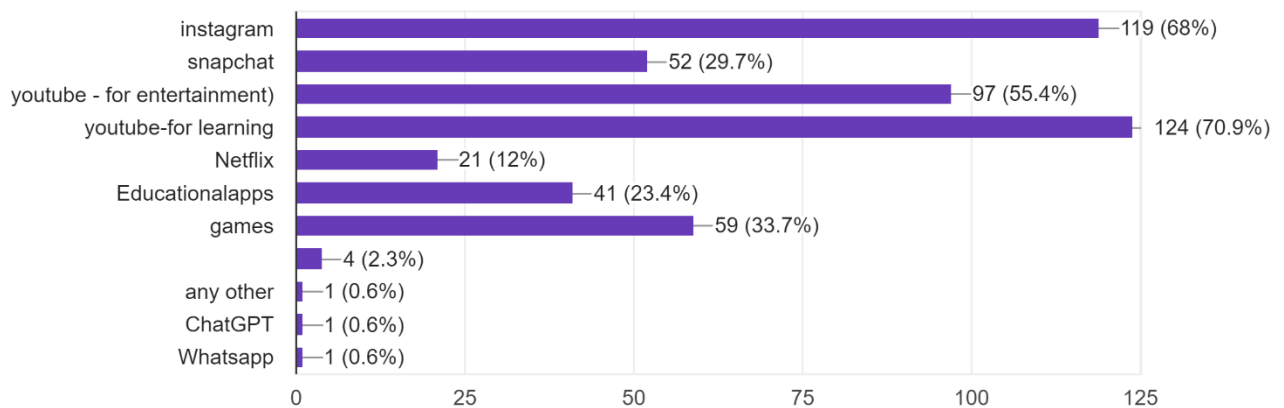
174 responses



From the above data it is clear that students enjoy learning through gamification, online quizzes and other educational games but at the same time they also like 'peer learning' by engaging in group discussion and group activities. This mix way of learning is healthy for students as well as teachers as over exposure to one particular method of learning creates boredom among students.

Q. 6 On which digital platform do you spend most of your time?

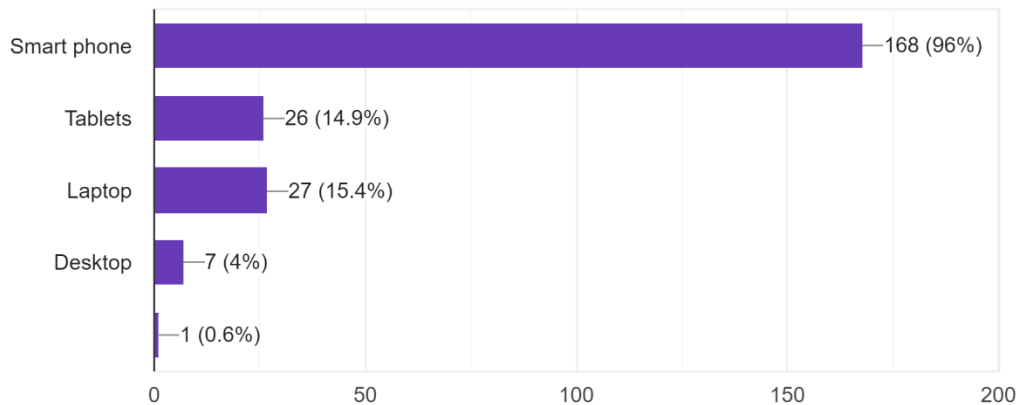
175 responses



The survey shows that 71% of students are using youtube for learning and improve their skills but most of the students access other platforms for entertainment purpose. The teachers should guide them time again and again for proper usage of these facilities. Such facilities can foster a vital role in modern education scenario as students can learn at their own pace by joining YouTube classes, using educational apps and attaining online classes.

Q. 7 Which of the following device(s) do you have access to?

175 responses

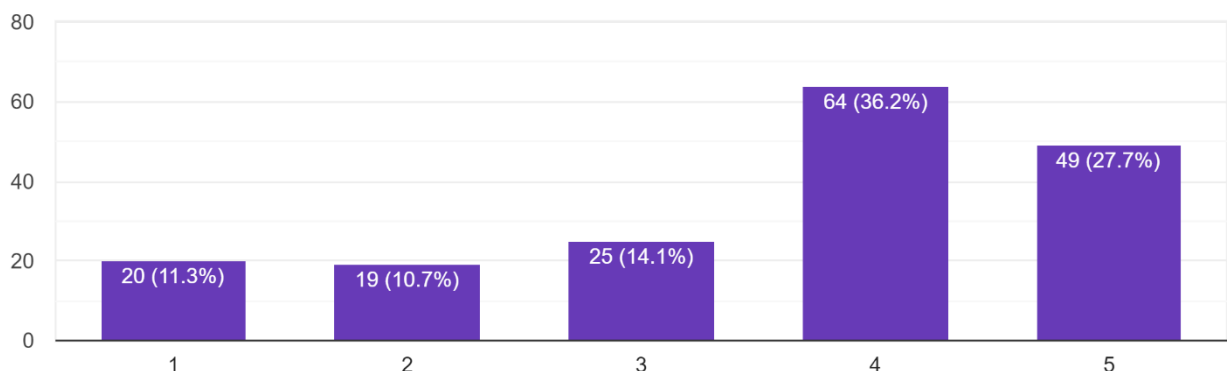


When we asked this question to the students, out of 175 responses, 96% of students have access to smart phone while only 15% have laptops and 14% have tablets. This shows that most of the students are using smart phone for accessing educational apps, online resources and other related tools to improve their knowledge and skills.

To integrate ICTs in educating the child and to improve learning, the education department has initiated several steps like the distribution of free tablets under mission “Yontab”, Digi Lab and “Mobile Science Lab” to various schools of Leh district. The department is also planning to distribute tablets in other schools in phases as per capacity and availability of budget.

Q. 8 Rate the importance of IT subject in your school curriculum:

177 responses

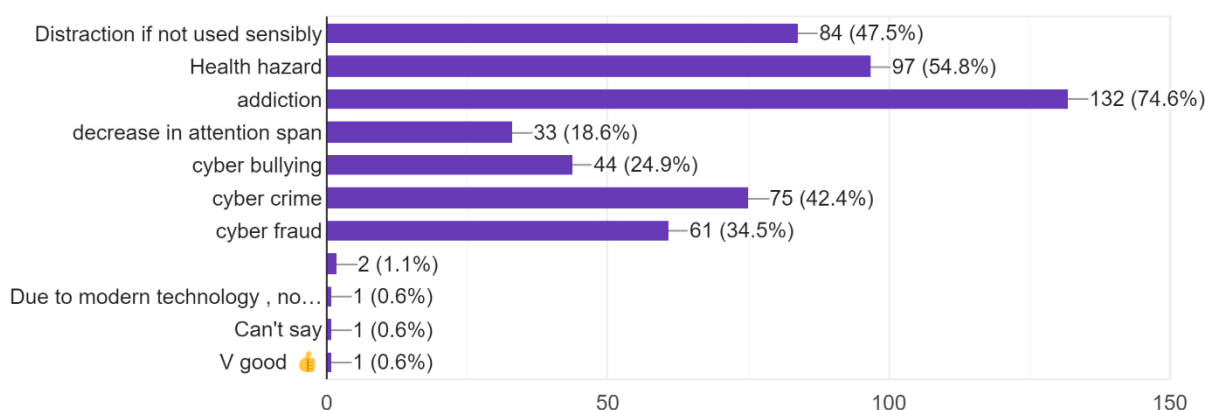


From the above graph it is clear that 36% and 28% of students rated 4 and 5 points in favour of the importance of IT subject in school curriculum. This indicates their curiosity to study about new and

advanced technologies like robotics, AI, coding etc. But the real challenge is that only few schools are having ICT Labs or Smart class and even these schools are not using the available facility due to lack of computer teacher. One of the reasons why parents send their ward to private schools is that government schools are not having all facilities. So, I think if government schools could provide all te facilities as private schools do including inclusion of IT subject class from class V onwards, then parents don't hesitate to send their children to these schools. In the same way most of the students feel that learning by using ICT tools such as computers, tablets and software can enhance the process through visual aids, interactive activities and multimedia resources. This can also improve student's attention, engagement and understanding.

Q. 9 What do you think are the disadvantages of modern technology ?

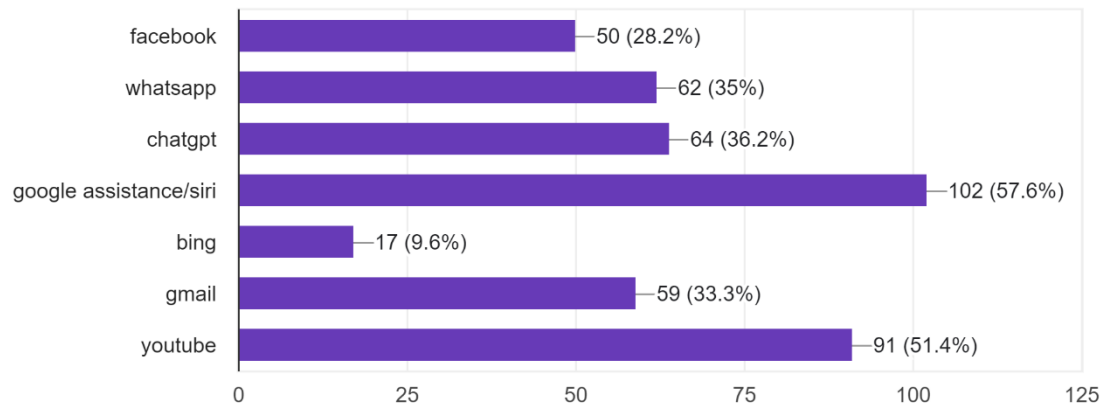
177 responses



When asked about disadvantages of modern technologies, most of the students feel they are getting addicted. Rest 55 % says, it is not good for our health if we spend too much time on these gadgets. 47 % says we get distracted to other un important topics and which is a loss of our precious time and energy. I felt happy that many students are aware of cybercrime, cyber bullying and cyber fraud. I personally feel awareness programme should be organised in school regarding cyber-crimes because many people including students are becoming victim of cyber bullying, cyber stalking, cyber fishing etc.

Q.10 Which of the following are AI based application?

177 responses

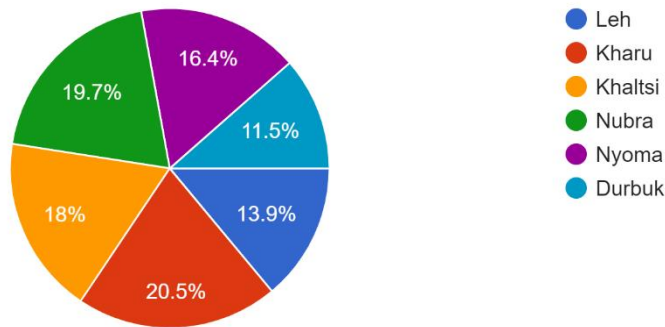


When asked about AI based application students seem bit confused so they need to have access to explore the leading advancements in technology with the help of these strategies, students are able to fully comprehend the concepts being taught and discover practical applications for them.

Analysis of teachers' questionnaires

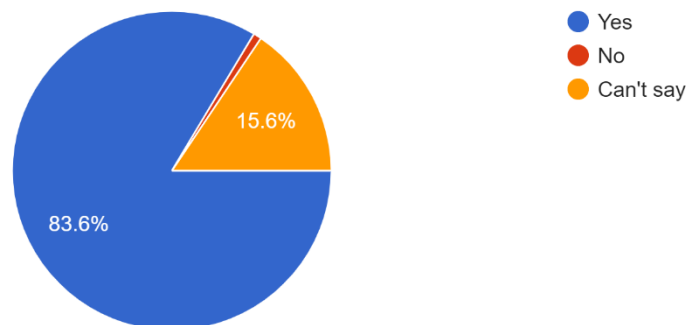


Zone
122 responses



We have randomly circulated google form in schools of all six zones and happy to get responses from all zones.

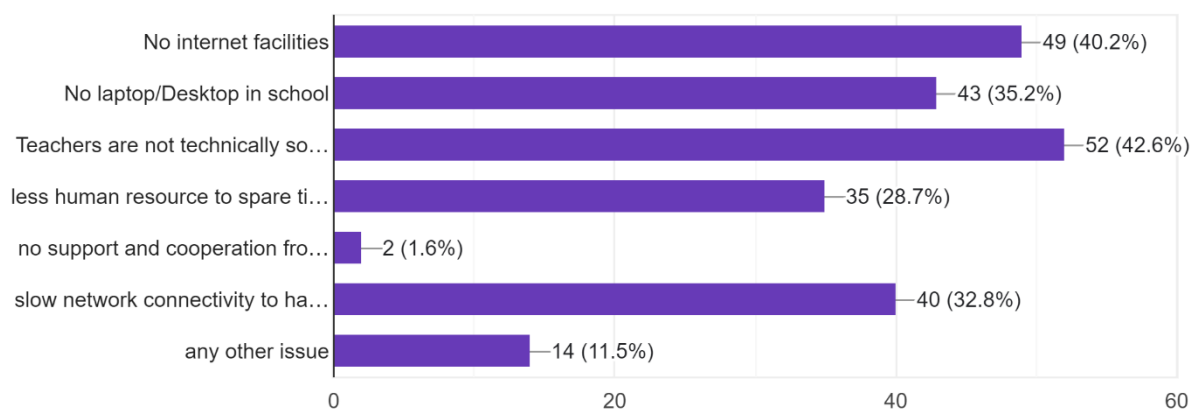
Q. 1 Are digitization of School records necessary for improving the standard of Education?
122 responses



Out of 121 responses, 84% agree that digitization is indeed important in improving standard of education as most of them seem to be aware of the fact that we have to move with the flow of new advancement in technology. 16 % of participants say that they have no idea regarding this question, it is because either they have not understood the word digitization or they don't know the importance of digitization. Every few percentages of people say that they don't feel that it is necessary to centralize records and digitize it to improve education standard. the

Q. 2 What sort of challenges do you anticipate in centralization and digitization of school record?
Please put tick mark.

122 responses

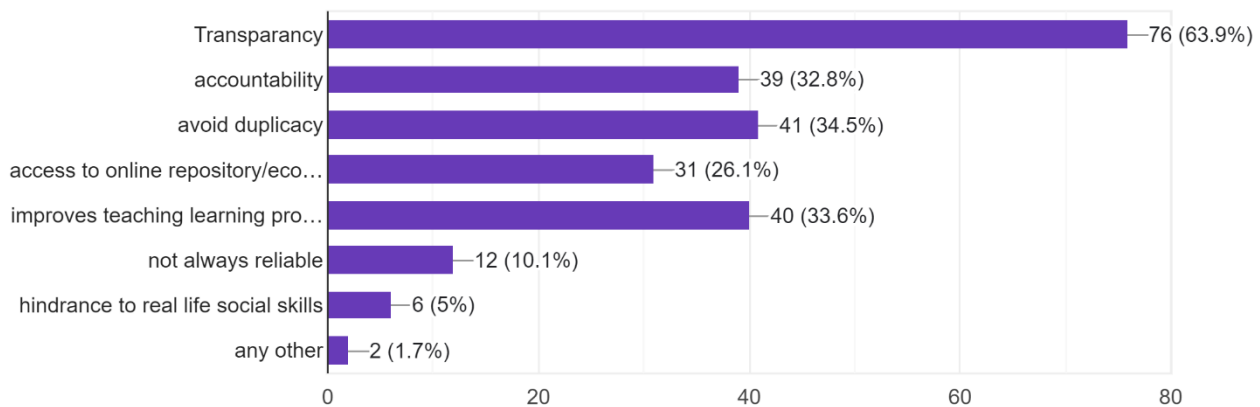


Education department UT Ladakh has started centralization and digitization of schools' data in Feb. 2022 with the aim of having a centralized and digitized records of students and teachers in government schools. Since then, lot of efforts have been made by the administration to centralize school records by conducting offline as well as online training in different zones. Schools in different zones have also worked hard to transfer records from manually maintained files to ERP software.

During this process teachers are facing lots of challenges, out of 121 responses, 40% of them have no access to internet, 33% say even if they have internet facility, the speed is too slow to handle heavy software like ERP and update data in real time mode. 35% don't have laptop/desktop, 43% say that they are over burden with academic activities that they are not able to spare time in these tasks. Schools in far flung areas of Ladakh are having limited enrolment and most of the primary schools are run by one or two teachers. These teachers handle students of class Nursery to 5th, so they are engaged whole day taking classes of nursery to 5th, such multi-grade teaching is causing difficulties in getting extra time for other works.

Q. 3 Digitization of school record leads to

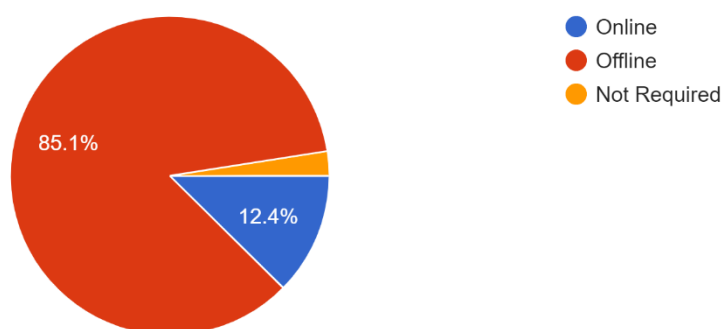
119 responses



From the above graph it seems that teachers are well aware of the importance of centralization and digitization of records. 64% feel that it will lead to transparency, 33% express that it will bring about accountability while 35% say that this will sort out the problem of duplicity of records of students and teachers. Fewer percentages say that it is not always reliable, this is correct to some extent as when we think about centralization of records, there should be good speed internet facility and many activities like online marking of attendance of teachers and students should happen in real time mode so at this point of time it seems impossible in many schools which fall in no internet zones.

Q.4 Do you need IT based training if yes, which mode do you prefer?

121 responses

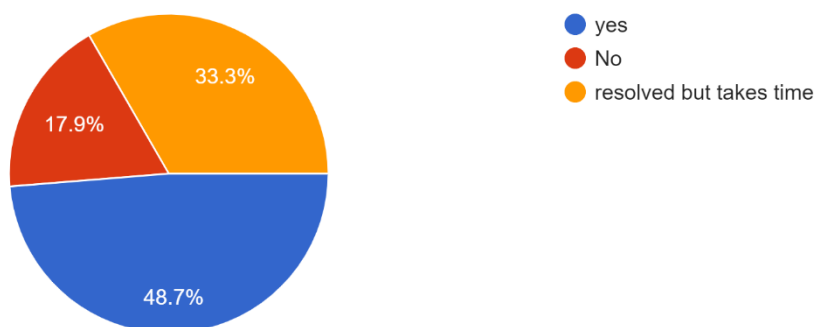


Out of 121 responses against the question cited above, 85% of participants say that they need online training. Although we see many advantages of online trainings like anytime, anywhere, at our own pace and comfort we can attend online trainings but on the context of Ladakh and other remote areas it is not always true. Because of hilly areas and scattered inhabitants, it is not always

possible to get good signal in all areas so teachers are not able to receive good understanding from online presentation so they prefer offline trainings with hands-on practices. 12% say that they are comfortable with online trainings, these portion of participants seem to have very good internet speed and are also good knowledge of computer and modern technologies.

Q. 5 In the process of digitization , are your queries being heard and resolved timely by concerned technical team.

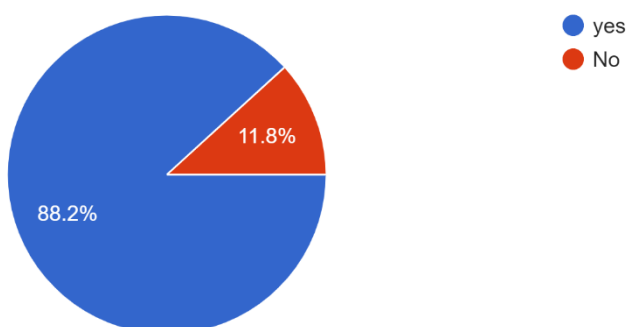
117 responses



Education department has assigned the job of centralization and digitization of schools to a third party and appointed nodal officers and zonal level coordinators from Leh and Kargil districts to implement this program in schools. Schools are facing lot of technical issues during implementation so a helpline desk has been provided by the company to address the problems encountered in schools during the process. When asked about weather the queries are being solved timely by the helpline desk, 49% say that their problems are rectified on time while 19% express that the helpline personals are not able to solve their problems on time. 33 % say that their problems didn't get resolved at all.

Q. 6 Is your school head extend cooperation in the process of digitization and centralization of record.

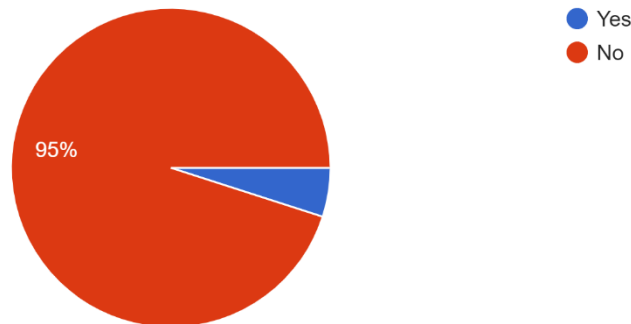
119 responses



88% of teachers say that their school head extends full cooperation in implementing ERP software, this indicates that most of the school heads are aware of the fact that there is no option left but to shift to digitization as we are moving towards paperless administration. Rest 12% of school heads think that traditional way of record keeping is more familiar and are comfortable in that only, so they show reluctance to shift to the new approach.

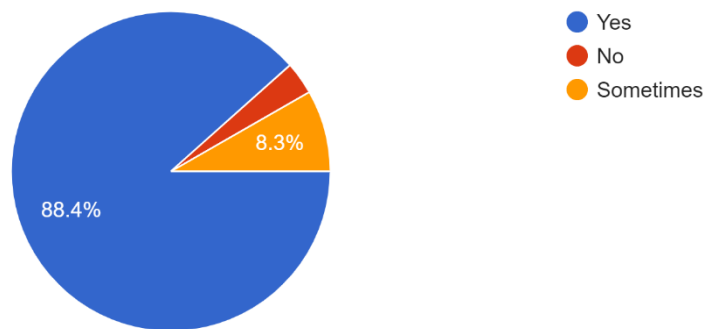
Q. 7 Do you have Wifi facility in your school?

121 responses



Q. 8 Are you using your own mobile data for uploading and updation of school records?

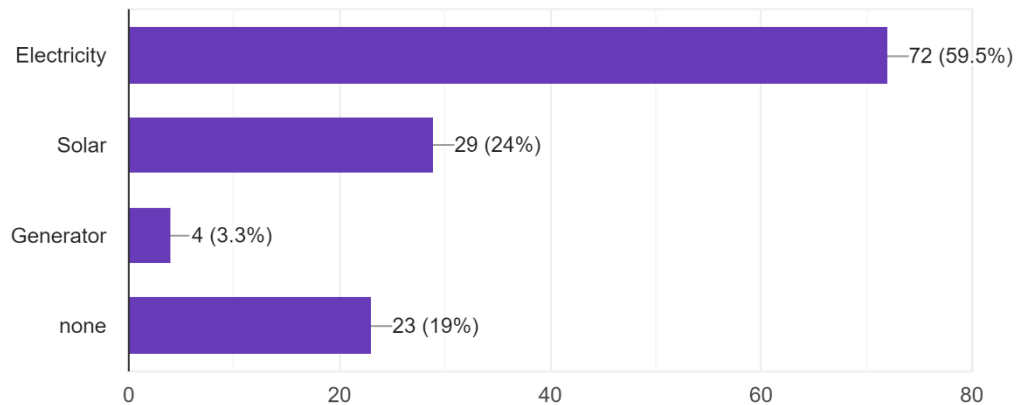
121 responses



Out of total surveyed, 95% of teachers say that they don't have 'WiFi' facility in their schools which is pathetic if our target is to achieve 100% centralization and digitization of students' and employee details in few months. Rest 5% say that they have 'WiFi' in their schools, these school must be located in main Leh or surrounding areas.

Q. 9 What sort of power supply do your school have?

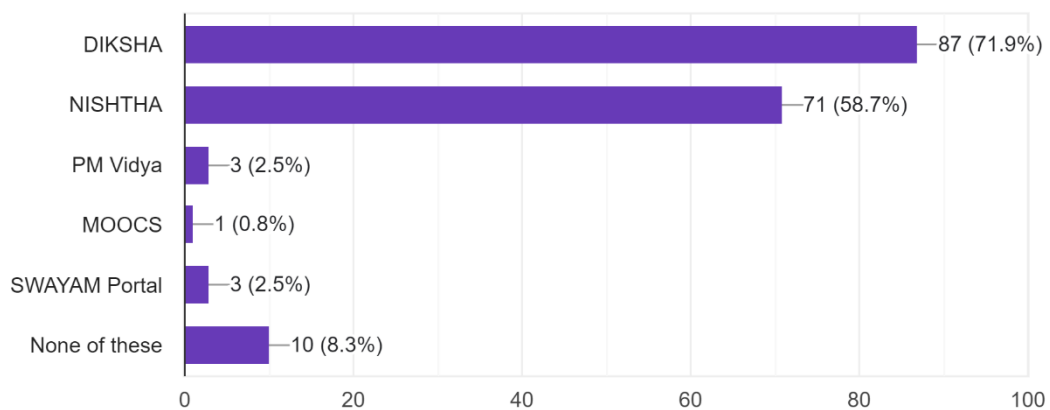
121 responses



Only 60% of total surveyed say that they are having electricity as source of power supply, 24% have solar power while 19% of schools don't have any power supply. So, it is clear from the above graph that digitization is not that easy, stakeholders at each hierarchy must understand the situations and conditions at the grass root level. First the facilities needed for the process of digitization and centralization should be provided in all schools then we can move ahead with process without encountering major difficulty.

Q.11 Which of the following learning platform you are using to improve your teaching-learning skills.

121 responses



It is very encouraging that most of the teachers are aware of the online repository portals and apps and are using these to improve teaching learning process. Most of the teachers have completed 50 hours of course on DIKSHA and NISHTHA and has improved their teaching skills.

Conclusion

Till date most of the schools of Leh district have implemented basic modules of ERP software like Student, HRMS, Attendance, Configuration, Administration and Examination. The stakeholders at various level, Director Education Department, Chief Education Officer, Zonal Educational Officers, Nodal Officers and Head of the Institutions can view status of some activities on their dashboards including attendance of students as on date, number of dropouts in a particular zone and school, total enrolment of district and many more. Stakeholders at higher level can check the status of employee details like total number of employees in the department as on date, designation-wise employee detail, total staff on leave in a particular school, transfer detail, total number of employees retiring as on date and much more. Thus, it modernizes school administration, making it more efficient, transparent, and responsive to the needs of students and staff.

By embracing digital tools and centralized systems, schools are not only preparing students for the technological demands of the future but also enhancing the quality of education and administration. As we navigate through the 21st century, the integration of these elements is imperative to meet the evolving challenges of our time. Therefore, centralization and digitization in schools are not just beneficial—they are essential for cultivating a generation that is equipped to thrive in an increasingly digital world. To sum up digitization and centralization can help reduce redundancies, act as a single source of information, brings about transparencies and accountability leading to better e-governance of education department.

After the complete centralization and digitization of records of all schools, this ERP software will be linked with VSK. Education department UT Ladakh is planning to establish VSK centre at DIET Leh in near future. By establishing VSK centre, higher authorities will be able to perform holistic monitoring of schools online in real time.

References

1. Internet
2. Chief Education Office, Leh
3. Schools selected for the survey.
4. M-Star document

Photo Gallery

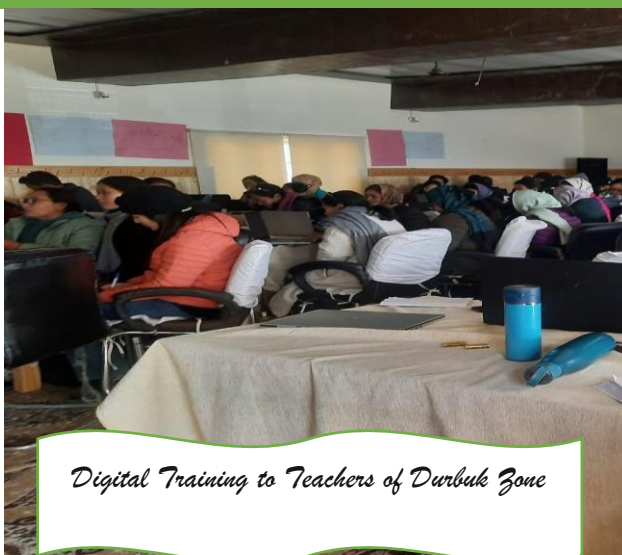
*Digital Training to Teachers
Khaltsi zone*



*Digital Training to
Teachers of Leh Zone*



Digital Training to Teachers of Durbuk Zone



Digital Training to Teachers of Khary Zone



Digital Training to Teachers of Nyoma Zone



*Digital Training to
Teachers of Nubra Zone*



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