EFFECTIVENESS OF E- LEARNING IN SCHOOLS IN HIMACHAL PRADESH DURING COVID-19

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Abstract: Education is the process of teaching to develop the knowledge, skill and character of the student. Higher education in India is at the cross roads of various reforms and there is an urgent need to enhance the gross enrolment ratio and quality of education as per global standers. As such alternative modes such as open and distance learning and e-learning can contribute significantly towards the goal of higher education in the country. The National Education Policy 2020 aims to leverage potential of demographic dividend of India to realize the goal of US 10 $ trillion economy as well as self reliant nation. In India around 250 million students were affected due to school closures at the onset of lock down caused by Covid-19. The pandemic posed several challenges in public and private schools which included an expected rise in dropouts, learning losses and increase in digital infrastructure. Hence an attempt has been made to analyze relevance and effectiveness of e-learning in schools in Himachal Pradesh in the backdrop of outbreak of covid-19.

Keywords: - e-Learning, Digital Infrastructure, Covid-19, Demographic Dividend, Globalization.

INTRODUCTION

Education is both the art of teaching knowledge to others and the act of receiving knowledge from someone else. Education also refers to the knowledge received through schooling or instruction and to the institution of teaching as a whole.

During the ancient period, two systems of education were developed Vedic and Buddhist system were Pali. During those time of education was of Vedas, Brahmana's, and Upanishads and Dharam sutra. The ancient education focused on imparting ethics like humility, truthfulness, discipline, self-reliance and respecting all creations to the students. The education was mostly imparted in ashrams, gurukuls, temples, houses. Sometimes pujaris of the temple used to teach students.

The education system of ancient India has some special features and uniqueness which was not found in any other ancient education system of the other countries. The education was mostly given in the forests under the blue sky, which keep the students mind fresh and alive. During ancient times people used to live simple life and doing their work with devotion and hard work.

1.1 TRADITIONAL EDUCATION VS. MODERN EDUCATION:

Traditional education and modern education are both related to each other and different from each other also. In the early history of our country, there was a time where there were no schools. The children acquire the education or knowledge from their ancestors. At that time this knowledge focused only on the skills required for survival. The people who lived in jungles got the educations from the ancestors who taught them how to hunt the animals for their food, how to make tools. They were taught about their rituals or the customs they followed. They taught them the stories of their gods and kings from which they could learn good morals. The king used to send their sons to schools which are called gurukuls in India. These types of schools are not meant for local population. It could only be accessed by the royal families.

Modern Education:

As the democratic government was established in the coming years, the importance of education spread throughout the country. Schools were opened where any kind of students can come and learn. This was the establishment of modern education. The scenario of education which now is totally different from the scenario which was a few years back, at that time modern education was not considered good and

Today traditional education is not considered enough. As the needs of the people are changing, the education system also has to change and this change should be accepted by the people. Earlier the people used to teach their children how to fulfil their needs. This was the basic aim behind education and the aim now is still same. As the need grew, the education had to grow. If the education did not evolve then it would be difficult to fulfil the need of today.

1.2 COVID-19 PANDEMIC

Corona virus disease is a contagious disease that first emerged in Wuhan, China in December 2019. It is later coded "covid-19" by the W.H.O which stands for corona virus disease 2019. The corona virus outbreak remains one of the worst global

pandemics for decades. The mortality rate soared and the easy of spread was upsetting. Research shows that older people and those with underlying medical problems like cardiovascular diseases, diabetes, chronic respiratory disease and cancer were more likely to develop serious illness from corona virus (W.H.O, 2020). The spreading rate of covid-19 is high in children as compared to adults.

Covid-19 will forever be known as the virus that shut down the world. It has changed our lives in many ways that we never thought possible. One of the most significant impacts of this pandemic has been in the field of education where it has led to the largest disruption of global education system in history. When schools and colleges around the world closed due to covid-19 lockdowns, students and educators alike were left wondering what the future holds. According to the UNESCO **(United Nations Educational, Scientific and Cultural Organization)** Report, over 290 million students across 29 countries are affected by covid-19. Approximate 32 crore students (including schools and college) are affecting, declared by the UNESCO. The outbreak of the coronavirus pandemic increased the gaps in the education sector globally.

The covid-19 pandemic has created the longest disruption of education system in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94% of the world's student population, up to 99% in low and lower-middle income countries. The crisis is exacerbating pre-existing education disparities by reducing the opportunities for many of the most vulnerable children, youth and adults.

The W.H.O issued guidelines and updates on how to mitigate the spread of the pandemic. Many countries adopted different measures in addition to the W.H.O guidelines to contain the spread of the disease. Some covid-19 responses across the particularly as it relates to the closure of schools due to corona virus.

In United States: many schools were closed down, and scheduled tests and examinations were also cancelled and might not resume back the rest of academic year. New York and the California States were among the worst-hit states in the U.S and the number of cases increased steadily despite strong measures put in place by both the federal and state governments to contain the pandemic. School closures in the U.S affected over 60 million students in the country. In Spain: the closure of schools in Spain particularly in Madrid led to the suspension of job contracts for people who work at school cafeterias and in special education. About 11 million students were affected by school closures.

In Saudi Arabia: (Middle East Monitor 2020) reported that schools and universities across the kingdom were ordered to close down. The government however, directed that "Virtual schools and distance education be activated to endure that the educational process continues in an effective and quality manner". In India: Indian government has announced the lockdown and closure of educational institutions as a logical solution to enforce social distancing within communities. The nationwide lockdown has had a tremendous impact on the education system of the country, especially for students from rural areas. Since the Indian education system is dominated by classroom study, the present scenario has made the functioning of the educational institutions go very difficult. All educational activities like examinations, school admissions, entrance tests of various universities and competitive examinations, others, are being held during this period. As the days are passing by with no immediate solution to stop this outbreak, the closure of schools and universities is hugely affecting the learning across the country. The structure of the Indian education system i.e. learning methodology, teaching techniques & assessment methodologies, is quite affected, resulting in a shift to online education with most focus on virtual education to accomplish the set aims and objectives. But only a handful of schools and universities could adopt such methods and the low-income private and government schools are quite inefficient to adopt the same, thus resulting in a shutdown.

1.3 DIGITAL INFRASTRUCTURE

Before the COVID-19 lockdown in India, no one estimated that the face of the Indian educational institutions could change so drastically. Schools that never allowed students to carry an electronic gadget turned into learning centres for online classes. Both teachers and students are getting familiar to this new normal, which is definitely more challenging for the teachers to handle with this situation. The teachers also face challenges in designing effective lessons and changing of teaching when shifting to online learning; this can also be resolved through workshops and training.

According to the key indicators of Household Social Consumption on Education in India report, based on the 2017-18 NSSO, fewer than 15% of rural Indian households have internet access (as opposed to 42% urban Indian households).

Availability of electricity is a significant challenge to taking advantage of education online. In a recent 2017-18 survey, the Ministry of Rural Development found that only 47% of Indian households receive more than 12 hours of electricity and more than 36% of schools in India operate without electricity. This suggests that while students from families with better means of living can easily bridge the transition to remote learning, students from underprivileged backgrounds are likely to accede to inefficiency and a lack of adaptation, either because of the inaccessibility of the technology or the low education of their parents to guide them through tech-savvy applications. Non-availability of technical infrastructure and irregular interrupted internet connectivity all across India is the biggest challenge in front of the students and teachers.

Digital learning is revolutionary and is constantly changing in step with new advances in technology, particularly with the advent of modern internet user experiences and artificial intelligence (AI). It is a broad term used to describe the use of technology that is applied to the learning process. The technology can be adaptive, augmentative, personalised and virtual. Digital learning allows us to learn anywhere and at any time; it's a new-age freedom that puts us in control of our learning process.

Sr. No	State	Rural		Urban	
		Operate Computer (%)	Access Internet (%)	Operate Computer (%)	Access Internet (%)
1	Andhra Pradesh	1.5	10.4	11.6	29.5
2	Assam	3.7	12.1	30.8	46.9
3	Bihar	2.7	12.5	20.0	38.6
4	Chhattisgarh	3.2	10.6	22.0	34.6
5	Delhi	NA	NA	34.7	55.8
6	Gujarat	4.4	21.1	20.1	49.1
7	Haryana	5.9	37.1	29.5	55.5
8	Himachal Pradesh	10.5	48.6	28.3	70.6
9	Jammu & Kashmir	3.5	28.7	16.0	57.7
10	Jharkhand	1.3	11.9	15.6	40.2
11	Karnataka	2.0	8.3	22.9	33.5
12	Kerala	20.1	46.9	27.5	56.4
13	Madhya Pradesh	2.3	9.7	17.2	35.4
14	Maharashtra	3.3	18.5	27.4	52.0
15	Odisha	1.8	5.8	17.2	31.2
16	Punjab	9.4	39.4	26.7	57.1
17	Rajasthan	6.4	18.5	26.6	49.9
18	Tamil Nādu	11.6	14.4	24.7	24.8
19	Telangana	1.6	9.9	17.6	41.9
20	Uttarakhand	7.0	35.2	32.5	64.3
21	Uttar Pradesh	4.0	11.6	22.3	41.0
22	West Bengal	3.3	7.9	23.0	36.0

Source: 75th round of National Sample survey conducted between July 2017 and June 2018

The budget of 2022-2023 for education is also in continuum of previous year where in various important initiative such as 15000 exemplar schools, capacity building of teachers through NISHTHA, National professional standard for teacher (NPST).Ministry or education has been allotted Rs.1,04,277.72 crores in Budget 2022-2023 which is 11.86 percent more than the previous year's allocation.

The budget allocation in FY2022-2023 for the flagship centrally sponsored scheme of Samagra Shiksha has also increased to Rs 37,383.36crores which is around 18 percent more than the previous year.

1.4 e-LEARNING

e-learning is a new concept of education. In this Internet technology is used for the presentation and communication of learning contents. With the help of this technology, an appropriate environment for teachers and students can originated for learning. E-learning improves a lifelong process. It provides learning facilities to the society and community.

e-learning is a type of learning conducted digitally via electronic media, typically involving the internet.

It can be accessed via most electronic devices including a computer, laptop, tablet or smart phone, making it a versatile and easy way for students to learn wherever they are. E-learning resources come in a variety of forms – from software programmes and digital courses to interactive online platform and apps.

e-learning refers to the use of electronic media and information and communication technologies (ICT) in education. E-learning is broadly inclusive of all forms of educational technology in learning and teaching. E-learning is inclusive of, and is broadly synonymous with multimedia learning, technology enhanced learning (TEL), computer-based instruction (CBI), computer-based training (CBT), computer, internet-based training (IBT), web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital educational collaboration. These alternative names emphasize a particular aspect, component or delivery method.

e-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer 8 based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underly many Elearning processes. E-learning can occur in or out of the classroom. It can be self-paced, asynchronous learning or maybe instructor-led, synchronous learning.

e-learning is suited to distance learning and flexible learning, but it can also be used in conjunction with face-to-face teaching, in which case the term blended learning is commonly used.

TYPES OF e-LEARNING:
Adaptive learning
Adaptive learning, also known as adaptive teaching, is an educational method which uses computer algorithms as well as artificial intelligence to orchestrate the interaction with the learner and deliver customized resources and learning activities to address the unique needs of each learner.

Blended learning
 It is a combination of classroom learning or face to face learning with online learning. Also called hybrid learning. It requires physical presence of both teacher and student. Also, online through the use of interactive chat and virtual classrooms.

Web based Learning
Web based learning is that medium for preparing a learning environment which mediates and support external resources of learning domain associated with computer's hyperlink by get connected to internet and intranet. Web based learning is designed in such a way that computer displays a lesson while reply to the conversation of learning.

Asynchronous Learning
Asynchronous learning, student and teacher cannot be online at same time. Learner learns here by self-pace-Email, blogs, wikis etc.

Synchronous learning
 Online transmission by both side and decided a fix time so-called real-time learning, the learner and teacher online and interest at the same time. Medium of synchronous learning via mobile, video conferencing and internet. Participants can share their ideas and thoughts and interact with the teacher live on virtual classroom, audio-videoconferencing, chat and instant messaging. **Mobile Learning**
Mobile Learning (sometimes called M-Learning) is a term used for learning processes that can be engaged across multiple platforms. Mobile learning may also consist of a multi-faceted approach to learning through electronic devices that use both social and contextual interactions in addition to video and digital learning applications. Mobile learning is popular because it enables learners to engage in the learning process "on-demand", wherever and whenever the learner desires.

Personalized Learning
Personalized Learning is a custom-tailored learning process that is created to help an individual leaner. The Personalized Learning experience is targeted towards individuals who would benefit from an individual learning path. Personalized Learning requires someone to design a learning journey that is curated or created specifically for a particular learner and/or learning objective.

Advantages of Online Education:
One on one discussion with teachers.
Relief from stress.
Engagement and idea exchange with other students on topics.
Online education provides high-quality programs while remaining cheaper.
Access 24*7

Disadvantages of Online Education:
Involves a bigger workload.
Online education requires immense self-discipline.
Materials and support can be difficult.

Advantages of Online Learning:
Efficiency: online learning offers teachers way to deliver lessons to students. Tools- videos, POFs and Podcasts. Teachers are able to become more efficient educators.

Accessibility of Time and Place: allow students to attend classes from any location by their choice. Online lectures can be recorded, achieved and shared for future reference.

Affordability: online learning has reduced financial costs. Eliminates the cost points of student transportation, student meals and real estate. All the study material available online. Paperless learning environment.

Improved Students Attendance: fewer chances of students missing out any lessons.

Suits a variety of Learning Styles: every student has a different learning style. Some students prefer audio, some students prefer visual learning. Online learning system, with its range of options and resources. Best way to create a perfect learning environment.

Disadvantages of Online Learning:

Inability to focus on screen: struggle with focusing on screen. Easily distracted by social media. Misuse of the device.

Technology issues: another challenge of online classes is internet connectivity. Lack of continuity in learning.

Sense of Isolation: minimum physical interactions between students and teachers.

Teacher Training: online learning requires teachers to have a basic understanding of using digital forms of learning. Don't even have the necessary resources and tools to conduct online classes.

Manage screen time: increase in screen time is one of the biggest disadvantages of online learning. Students have developed the bad posture and other physical problems.

Benefits of using e-learning technologies:

Cost-Effective: e-learning is cost-effective compared to traditional learning. Students can cut down the cost of physical instructor fees, accommodation, and travel expenses.

Self-paced: Students can grab things at their speed. They can plan their schedules for learning as per their convenience. Self-paced learning reduces stress and leads to increased satisfaction among learners.

Flexibility: Online learning caters to everyone's needs. Courses can be taken by office goers, housewives as well at the time that suits them. They can choose to learn on weekends, evenings, or on specific days of the week.

No age limits: e-learning is accessible to all age groups. Anyone who wants to learn something new can enrol themselves in these courses irrespective of their age.

Lectures can be taken multiple times in online learning: we can access the lectures an unlimited number of times. In traditional teaching, you have to attend the lecture at the same time when it is happening and if you miss out on the lecture then you have to do that topic on your own; but in E-learning, you can attend the lecture whenever you want.

Large target audience: e-learning creates a large target audience base on a single platform. There can be n number of learners who can access the content of eLearning platforms.

Better Retention: e-learning leads to better retention because of interactive content. We can retain more when we watch a video or listen to something instead of reading books. If we enjoy the learning process, we can recall the information & will be able to apply the same in our life. **Eco-Friendly:** It is a paperless way of learning thus protects the environment. There is no need to cut the trees for obtaining a paper.

Tools of e-learning:
YouTube
YouTube has become the go-to place for people looking for all forms of video content. It hosts a huge repository, where users can upload videos or create playlists to curate content in a way that suits their interests. Why it's a great eLearning tool: Video content is a big trend in eLearning, and it's a tool all eLearning professionals should utilize. Adding video content to your eLearning courses makes them more interactive and fun. YouTube tends to be the first-place people go when they want to learn something fast, making it a great place for instructors to add eLearning videos. Plus, video content uploaded to YouTube can be easily embedded into most eLearning content.

Google Meet
Google Meet is a product developed by Google for secure business meetings. You can also conduct online classes through Google Meet as it is free for everyone to use. The educational institutions can use Google Meet as a part of G-suite for education. Anyone who has a Google account can sign in and create an online meeting using Google Meet. The users can access Google Meet using any modern web browser on a desktop or laptop to start or join a meeting. The desktop users do not need any additional software to install and use the Google Meet service. If you wish to access Google Meet using mobile, then you can download and install the mobile app available in Google Play and Apple store.

Zoom
Zoom is a free video-conferencing tool which helps to conduct business meetings and online classes. You can sign up for free via web and host an online meeting. The services of Zoom can also be utilized using dedicated desktop applications and mobile apps for Android and iOS devices. An unlimited number of meetings can be hosted using Zoom. It supports many features including online meetings, video webinar, phone system, chat and collaboration enabled conference rooms. To schedule a meeting and to collaborate with other applications, you can download and install zoom plug-in for Microsoft Outlook, IBM Notes, Intel Unite and Skype for Business.

Google Drive
Google Drive is our favourite form of cloud storage here at Learn Upon. With teams working in different locations across the globe, Google Drive provides a safe and central location where all team members can access the files they need at any time. Why it's a great eLearning tool: Many eLearning teams have members that work remotely, are based in different offices, or travel frequently. Google Drive is useful for ensuring that team members have instant access to the most recent

version of a file, avoiding the delay and potential confusion of email chains. Google Drive is also ideal for storing brochures and educational documents that account managers may need access to from eLearning conferences and other remote locations.

Google Docs

Google Docs provides an alternative to Microsoft Office. The main advantage is that the suite of eLearning tools is free. Spreadsheets, presentations and slides are created and stored online, making collaboration across teams a breeze. Why it's a great eLearning tool: At Learn Upon, we find Google Docs most useful for allowing multiple team members to collaborate on the creation and editing of shared documents. With all files stored in the cloud, team members can give feedback and make edits in real-time.

Google Classroom

Google classroom is a free Web series developed by google for education institutions that aims to simplify creating, distributing, and grading assignments. The primary purpose of google classroom is to streamline the process of sharing files between faculties and students. Google classroom is available for free at IOS and ANDROID versions with a maximum of 250 members (teacher and students) and join limit is 100 and create limit is 30 per day for professional account.

WhatsApp and Telegram

These two social media applications also used for communication and group chats, distributing the study materials for free these two applications are available for free in ANDROID and IOS versions.

TRADITIONAL EDUCATION VS ONLINE LEARNING

Traditional Education	Online Learning
Requires less discipline but imposes more structure	Requires discipline on the part of the student, but allows the student to create his or her own structure.
Demands a heavy schedule	Allows for more flexibility
Creates a specific lifestyle	Gives the student control over his or her lifestyle
Fosters competition	Fosters personal growth and development
Emphasis on school spirit and unity	Emphasis on learning specific skills
Extremely costly	Extremely affordable
Suited more for younger students	Suited for students of all ages
Restricts available time	Allows more time for work and family
Requires a physical geographical location	Permits students to travel
Rigid deadlines	More flexibility
Direct contact with students and educators	Online contact with students and educators
Access to campus activities and services	Access to endless online materials
High demands on time	Low demands on time

1.5 HIMACHAL PRADESH: Himachal became a part C state on 26 January 1950 with the implementation of the Constitution of India. Himachal Pradesh became Union Territory on 1 November 1956. On 18 December 1970 the State of Himachal Pradesh Act was passed by Parliament and the new state came into being on 25 January 1971. Thus H.P. emerged as the eighteenth state of Indian Union.

With an overall literacy rate of 82.80%, Himachal Pradesh is counted among the highly literate states in India. The literacy rate among males is 89.53%, whereas 75.93% of the female population is literate in the state. Hamirpur district in Himachal Pradesh has the highest literacy rate in the entire state. Himachal Pradesh Government is focused towards imparting elementary education among children of 6-14 years old mandatorily to comply with the 'Right to Free and Compulsory Education Act'. Moreover, the state offers specialized higher education in diverse disciplines with a total of 5 government medical colleges and notable autonomous institutions like IIT, IIM, NIT, IIIT, etc.

In the 10th five-year plan, the Himachal University has been allotted Rs. 45 million from the University Grants Commission (UGC) for improvement in the higher education sector. The government of India has been continuously working to uplift the education system in the state. The state government has announced plans to start three major nursing colleges within the state. There are more than 1,000 secondary schools, 10,000 primary schools, and more than 1,300 high schools in this state. Himachal Pradesh has become the first state in India to provide elementary education to every child.

English and Hindi are the compulsory languages in the schools. There are also few optional languages provided in the state schools as Urdu, Punjabi, Sanskrit, Tamil, and Telugu. Himachal Pradesh Board of School Education (HPBOSE) lays special emphasis on making free education available for the children at the elementary level. As per a survey conducted by

Indian Market Research Bureau (IMRB), the dropout rate amongst school-going children is almost negligible, i.e. below 1%. In fact, in districts like Bilaspur and Lahaul-Spiti, there are no out of school children.

The state has also progressed in the field of higher education with the establishment Indian Institute of Technology Mandi, which is ranked at 67th place in the NIRF Rankings. Apart from IIT, quality technical education is imparted by the National Institute of Technology Hamirpur, the Indian Institute of Information Technology Una, and colleges affiliated with Himachal Pradesh Technical University (HPTU). In addition, the Indian Institute of Management Sirmaur testifies to the excellent management education in Himachal Pradesh.

Details of Educational Institutions

Category	No of institutions
Engineering	187
Universities	16
Primary schools	10483
Middle schools	1056
Secondary / Higher secondary schools	1339
General colleges	64
S. S. I. Units	30176
Medical colleges	25
Homoeopathic medical colleges	01

1.6 PADAM GOVT SENIOR SECONDARY SCHOOL RAMPUR BUSHAHR

Padam Govt.Sr. Sec. School is situated at Rampur Bushahr at a distance of 130 km from Shimla. The geographical and natural environment is very beautiful; to being with the history of the Padam Govt. School Rampur Bushahr which was establish in 1891 took several leaps to reach its present status. Initially it was a primary school and was upgraded as Anglos Vernacular School in 1906. The school was renamed after Raja Shamsher Singh in 1909 and called Shamsher Middle School. It remained in the care and patronage of Raja Shamsher Singh and there after the second son Maharaja Padam Singh nurtured it to the level of High School in 1919. It was a great event when this school celebrated its Diamond Jubilee on 6th April, 1984 and the function was presided Overby the hon'ble Chief minister Raja Virbhadra Singh. For almost six decades it continued to function as High School and finally was appropriately named after Maharaja Padam Singh to keep alive the virtues he stood for. Both in the time of Maharaja Padam Singh and Raja Virbhadra Singh it prospered by leaps and bounds and has taken its present enormous shape in structure and earns glory in various areas of school activity. The present school can look back with deep satisfaction of having shaped and turned-out eminent person who have held and are holding very key position in civil and military administration. The school is committed not only to carry on the good and noble traditions.

1.7 DELHI PUBLIC SCHOOL JHAKRI

DPS Jhakri is a co-ed English medium school established in 1949with the moto of "service before self" by Founder-Pinkesh Barjatiya offering classes from preprimary to class X. The school was started by Delhi Public School Society. The school is affiliated with the Central Board of Secondary Education (CBSE), New Delhi. The school strives to impart comprehensive high-quality education, laying emphasis on the importance of hard and smart work through holistic teaching methods. The school offers lavish infrastructure like spacious Classrooms, Library which is stocked with over number of titles that cover fiction and non-fiction in all genres and subjects, Computer Laboratories, Huge Playground and Transport facilities.

2.1 NEED OF THE STUDY
Keeping in view the globalization of education and implementation of NEP 2020, there has been paradigm shift in the teaching learning methods. The IT education has been gaining momentum especially in the backdrop of outbreak of Covid 19 pandemic. Hence an attempt has been made in this study to analyse relevance and effectiveness of e-learning education.

2.2 SCOPE OF STUDY
The study attempted to understand the perceptions of students towards e-learning, in terms of likes, dislikes, requirement, aspirations, aptitude and satisfaction levels. This study was confined to two schools PGSSS RAMPUR BUSHAHR (government sector) and DPS JHAKRI (private sector), covering enrolment of students from 6th to 12thand focused on the relevance and effectiveness of e-learning in these two schools during Pre-Covid and Post- Covid. The period for the study has been taken from 2011-12 to 2021-22. Pre-covid period covered prior to 2019-20 and remaining post-covid period. Emphasis has been made on outgoing class i.e. +2 class of concerned schools of science stream only.

2.3 OBJECTIVES
1. To study the trend of enrollment.
2. To analyze the composition of enrollment
3. To study the digital infrastructure

4. To discuss the problems faced by the students during covid pandemic

5. To study the relevance and effectiveness of online education.

2.4 RESEARCH METHODOLOGY

The study required both primary and secondary data.

Data collection

The data required for the study was drawn from primary source collected through questionnaire method and secondary source was used from books, magazine, prospectus, internet, newspapers etc.

Sample design

Sample Size-Sample size consisted 120 students and 10 teachers. Samples were collected from Government School (Padam Govt Sr. Sec. School Rampur Bushehr) and Private school (Delhi Public School Jhakri, Rampur Bushahr).

Sampling techniques-for the study, convenience sampling techniques was used. Required data are collected by preparing pre-defined questionnaire via survey method. The collected data were tabulated and percentage, trend analysis, common size statement and ratio analysis tools are used for the analysis of data. Graphs were also used.

3.1 ENROLMENT: National Education Policy has been focusing on increasing on gross enrolment ratio at every level of education across the country. The government of Himachal Pradesh has also been emphasizing on increasing GER through more allocation of budget in every fiscal year.

	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022
GEN	386	309	287	247	203	407	198	337	284	321	240
SC	140	237	201	213	174	193	209	286	133	238	212
ST	34	39	45	43	58	31	46	27	41	38	33
OBC	16	18	07	09	24	26	11	13	19	12	13
TOTAL	576	603	540	512	459	657	464	663	477	609	498

Source: - Office of PGSSS Rampur Bushahr
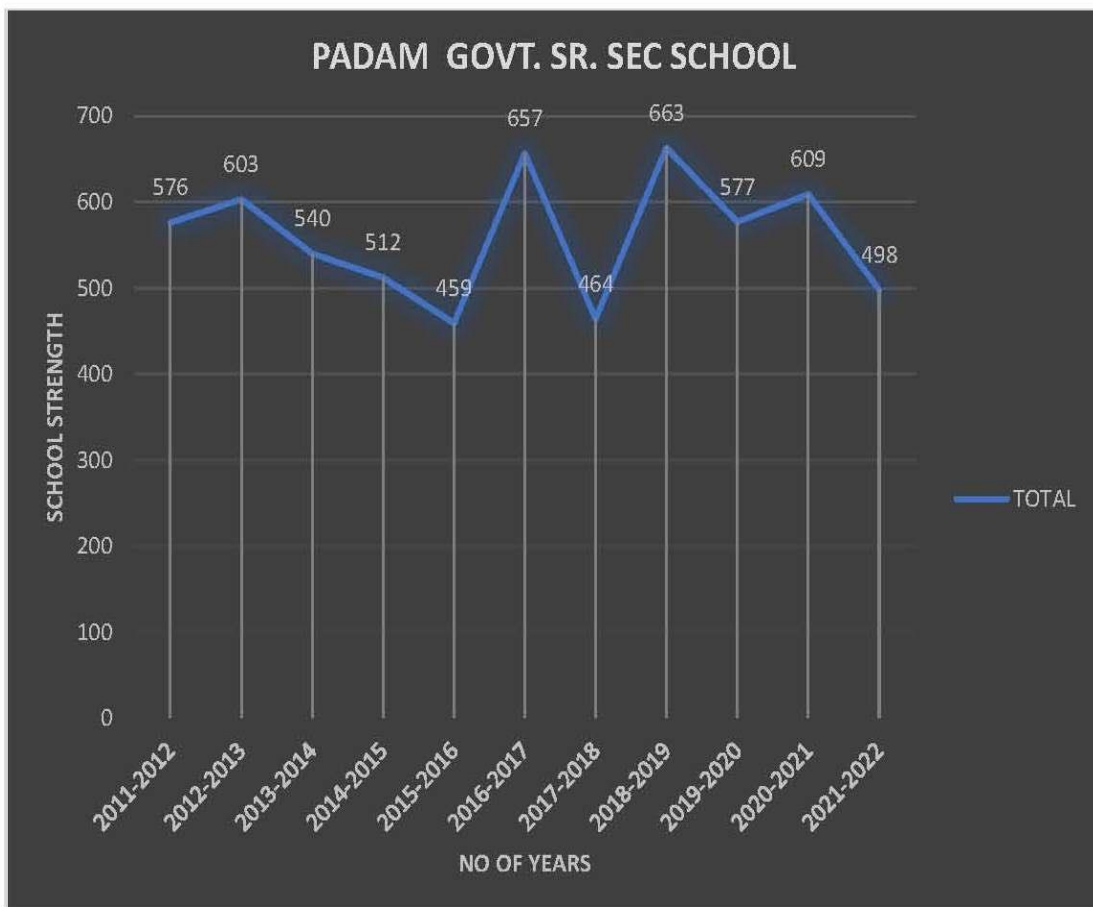
Table 3 PGSSS

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
GEN	67.01	51.24	53.14	48.24	44.22	61.94	42.67	50.84	59.54	52.70	48.19
SC	24.31	39.32	37.23	41.60	37.90	29.37	45.04	43.13	27.88	39.08	42.57
ST	5.90	6.46	8.34	8.39	12.63	4.71	9.91	4.07	8.59	6.24	6.62
OBC	2.78	2.98	1.29	1.77	5.25	3.98	2.38	1.96	3.99	1.98	2.62
%Total	100	100	100	100	100	100	100	100	100	100	100

Calculated from Table No. 01

There has been majority of students from general category followed by SC, ST and OBC respectively.

Table 4 DPS

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
GEN	79.79	77.69	73.09	71.23	74.75	67.07	73.52	72.42	65.17	59.58	69.19
SC	12.63	9.09	15.21	16.17	19.41	20.23	17.11	18.62	16.54	15.28	16.16
ST	2.83	11.53	3.56	9.12	4.13	8.87	5.05	4.31	14.84	21.58	10
OBC	4.75	1.69	8.14	3.48	1.71	3.83	4.32	4.65	3.45	3.56	4.65
%Total	100	100	100	100	100	100	100	100	100	100	100

Calculated from Table No. 02
The majority of the students was from general category followed by SC, ST and OBC respectively also in private school.

3.3 DIGITAL INFRASTRUCTURE
Digital Infrastructure in PGSSS during the session 2021-22.

No of computer labs	04
No of smart classes	02
No of computers	60
No of projectors	02
No of teachers (IP)	03
Learning application	Google meet, Zoom

SOURCE: OFFICE OF PGSSS Rampur Bushahr.
Student computer ratio =8.3:1

Digital Infrastructure in DPS during the session 2021-22

No of computer labs	4
No of smart classes	26
No of computers	35
No of projectors	10
No of teachers (IP)	2
Learning application	Google meet, Zoom

Student computer ratio =28.2:1

3.4 Problems and Efficacy of E- learning during Covid 19 Pandemic
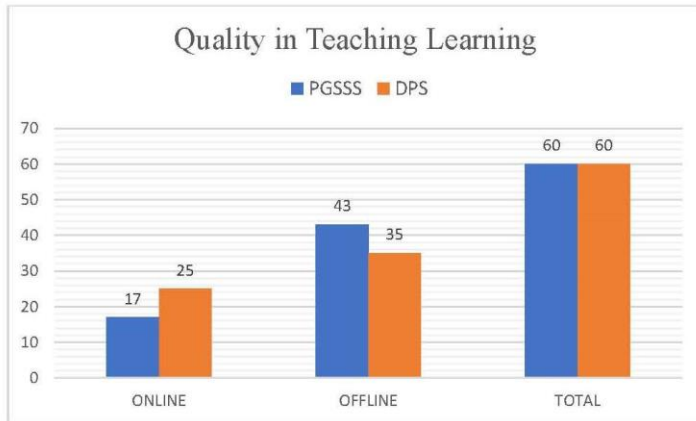
Table 5 Effectiveness of online classes

QUESTION	PGSSS	%	DPS	%
YES	11	18.34	8	13.33
NO	49	81.66	52	86.66
TOTAL	60	100	60	100
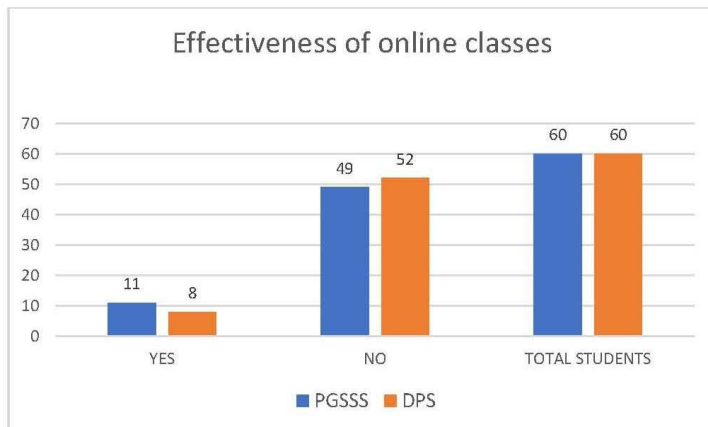
Majority of the students advocated effectiveness of offline mode teaching learning .

2. Quality in teaching learning

QUESTION	PGSSS	%	DPS	%
ONLINE	17	28.34	25	41.67
OFFLINE	43	71.66	35	58.33
TOTAL	60	100	60	100

Quality of teaching learning has been found more effective in offline mode revealed by respondents.

3. Interaction during online classes

QUESTION	PGSSS	%	DPS	%
YES	37	61.66	49	81.67
NO	23	38.34	11	18.33
TOTAL	60	100	60	100
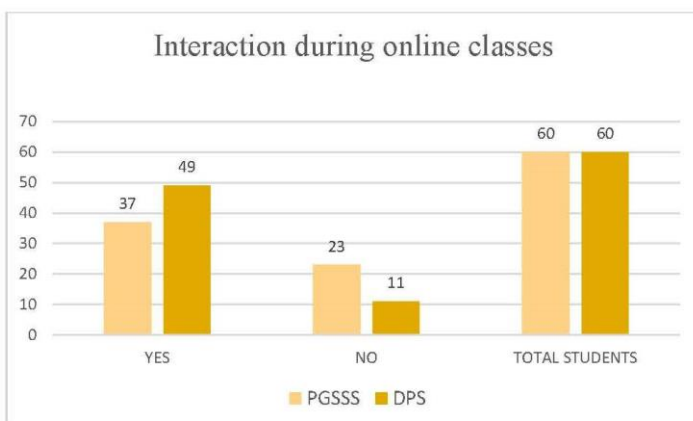
Students were of the opinion of high interaction through online mode of e learning

4. Seriousness of students in class

QUESTION	PGSSS	%	DPS	%
ONLINE	9	15	4	6.66
OFFLINE	31	51.67	49	81.68
BOTH	20	33.33	7	11.66
TOTAL	60	100	60	100
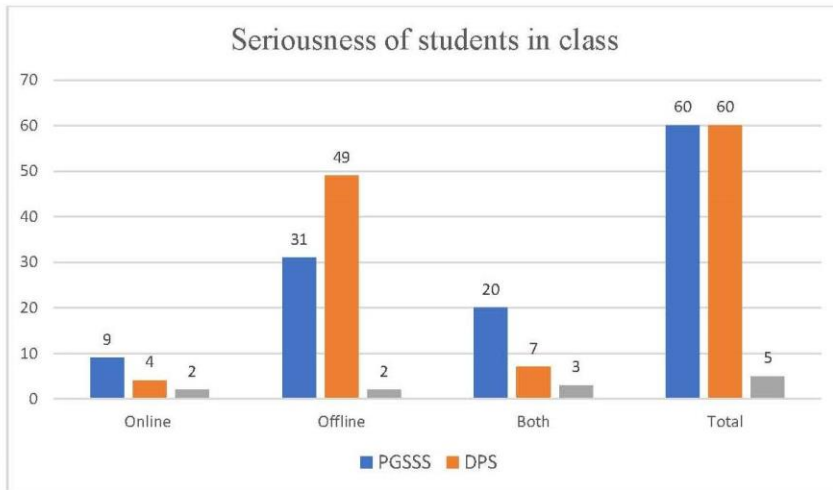
Students significantly took keen interest and seriousness in offline mode than online. Both modes have been adopted insignificantly in school.

5. Discipline during online tests/ exams

QUESTION	PGSSS	%	DPS	%
YES	16	26.66	24	40
NO	44	73.34	36	60
TOTAL	60	100	60	100
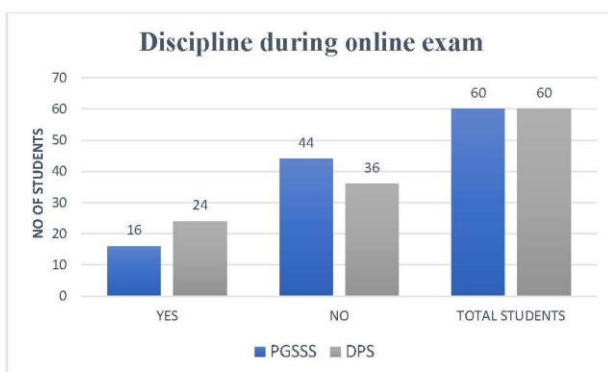
There was lack of discipline in online mode teaching learning observed during online test / examination.

6. Distraction from online classes

QUESTION	PGSSS	%	DPS	%
AGREE	38	63.34	47	78.34
DISAGREE	28	46.66	13	21.66
TOTAL	60	100	60	100

Distraction from online classes
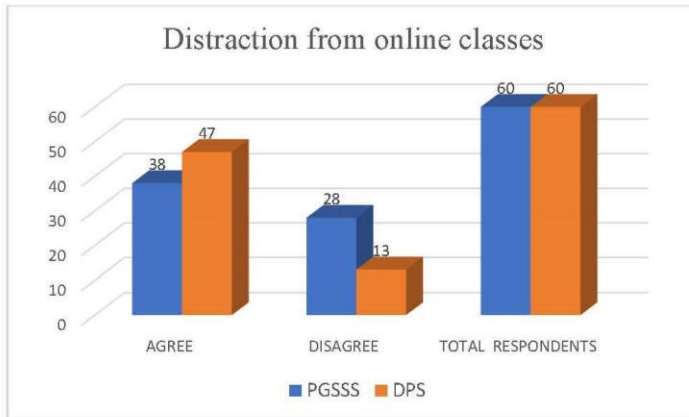
Students found more distraction and disturbance in online mode.

9. Mode of learning

QUESTION	PGSSS	%	DPS	%
VIRTUAL LEARNING	11	18.33	8	13.34
PHYSICAL ATTENDING CLASS	49	81.67	52	86.66
TOTAL	60	100	60	100
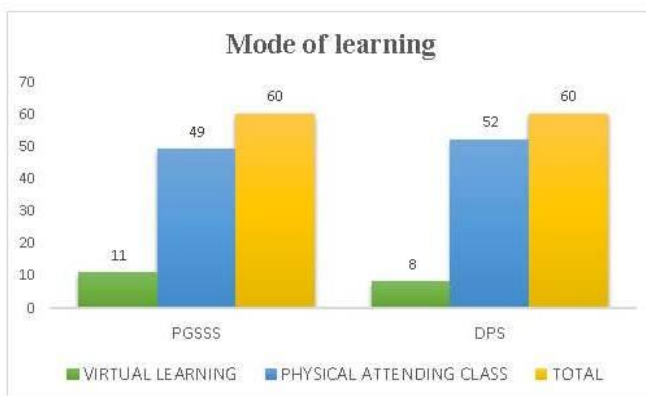
Mode of learning

To attend classes physically has been observed effective mode of learning than other modes in both schools.

8. Satisfaction from school administration/management

QUESTION	PGSSS	%	DPS	%
YES	21	35	41	68.34
NO	39	65	19	31.66
TOTAL	60	100	60	100
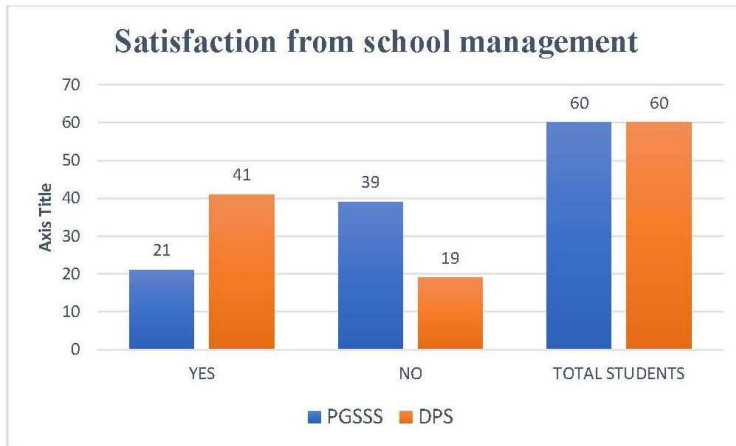
Proper measures were taken by the private school to ensure effectiveness of e learning than govt school.

9. E-learning sources

QUESTION	PGSSS	%	DPS	%
ZOOM APPLICATION	4	6.66	0	0
WHATSAPP	6	10	0	0
GOOGLE MEET	46	76.66	60	100
TOOLS PROVIDED BY SCHOOL	4	6.66	0	0
TOTAL	60	100	60	100
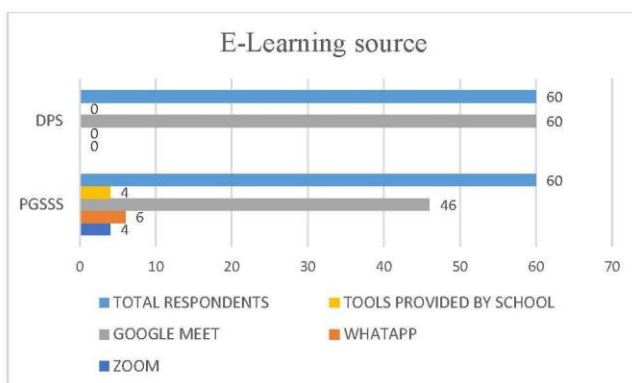
Google meet of e learning sources was observed significantly in both school than other sources.

10. Outcome of teaching learning

QUESTION	PGSSS	%	DPS	%
MORE EFFECTIVE	19	31.66	4	6.66
WASTAGE OF TIME	6	10	11	18.33
LACK OF P 2 P COMMUNICATION	29	48.34	44	73.34
LESS COSTLY	6	10	1	1.67
TOTAL	60	100	60	100
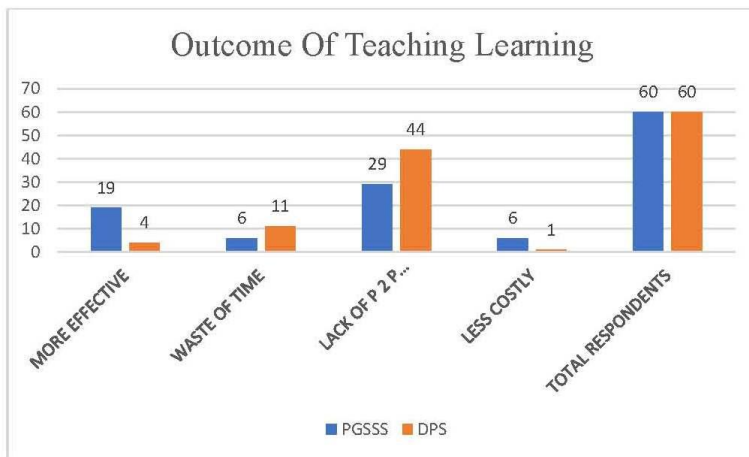
Students observed lack of physical presence in online mode than other variables.

11. Impact of COVID-19 on Students Enrolment

QUESTION	PGSSS	%	DPS	%
YES	44	73.33	50	83.34
NO	16	26.67	10	16.66
TOTAL	60	100	60	100
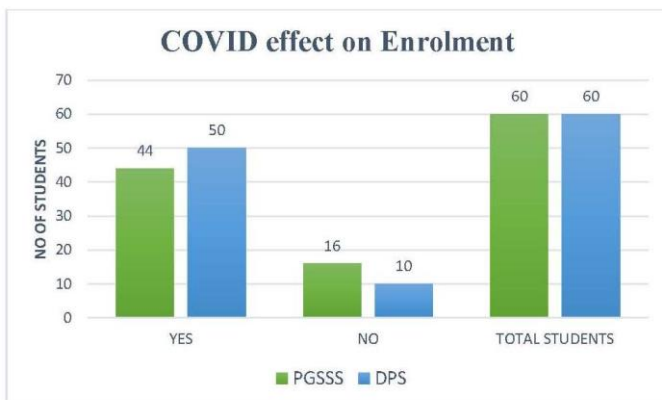
Enrolment of students was adversely affected during covid-19 pandemic in both schools

12. Use of ICT (Information and communication technology) during precovid19 pandemic

QUESTION	PGSSS	%	DPS	%
YES	27	45	23	38.33
NO	33	55	37	61.67
TOTAL	60	100	60	100
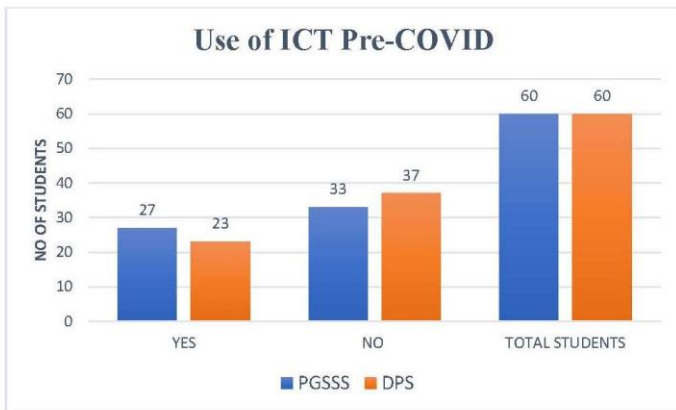
The usage of ICT mode was less during pre covid -19

13. Implementation of Covid-19 precautionary/safety measures

QUESTION	PGSSS	%	DPS	%
DIFFICULT	22	36.67	11	18.33
MODERATE	26	43.33	32	53.34
EASY	12	20	17	28.33
TOTAL	60	100	60	100
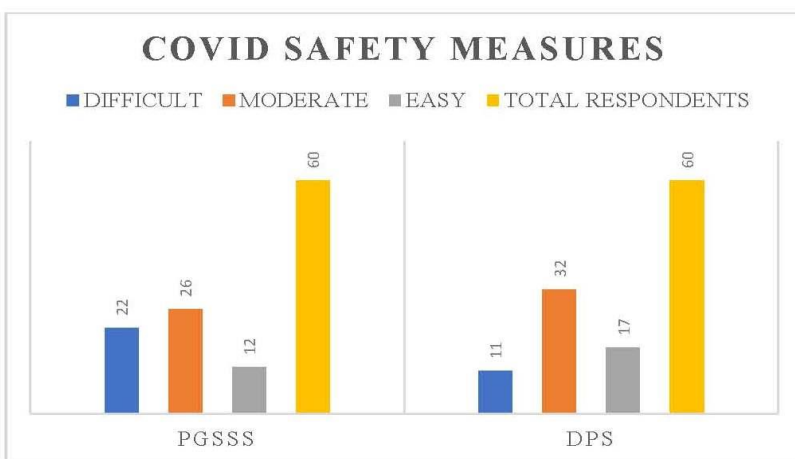
Covid 19 precautionary measures were followed moderately by the students.

14. Difficulty in finding the perfect E-learning platform

QUESTION	PGSSS	%	DPS	%
YES	25	41.67	32	53.34
NO	35	58.33	28	46.66
TOTAL	60	100	60	100
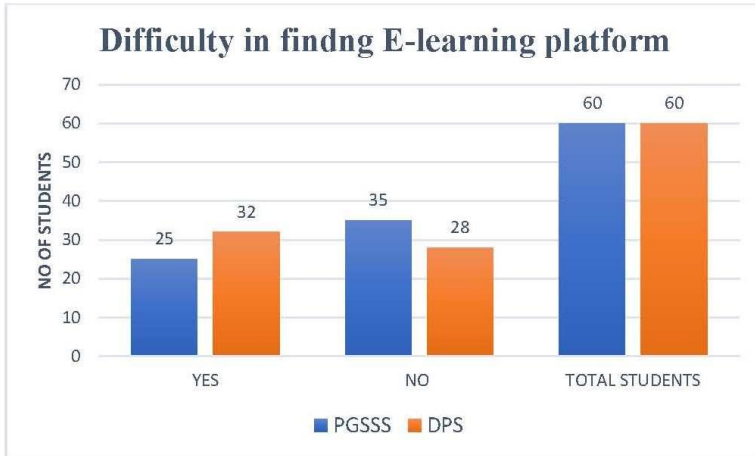
Difficulty in finding the perfect e learning platform was experienced more in private schools than Govt schools

15. Effect of using electronic device on mental health.

QUESTION	PGSSS	%	DPS	%
VERY POOR	7	11.67	5	8.33
POOR	6	10	17	28.33
NORMAL	29	48.33	25	41.66
NOT AFFECTED	18	30	13	21.68
TOTAL	60	100	60	100
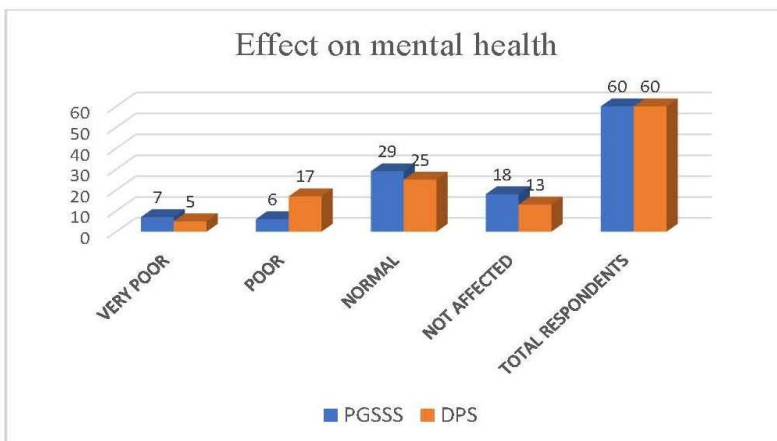
Effect of using electronic device on mental health was observed normally in both schools.

16. Problems faced during online classes

QUESTION	PGSSS	%	DPS	%
POOR INTERNET CONNECTIVITY	31	51.66	34	56.67
STUDENT DO NOT HAVE RESOURCES	18	30	5	8.33
TEACHERS AND STUDENTS ARE NOT TECH-SAVVY	2	3.34	1	1.66
ISSUE RELATED STUDENTS CONCENTRATION DURING CLASSES	9	15	20	33.34
TOTAL	60	100	60	100

Problem faced during online classes
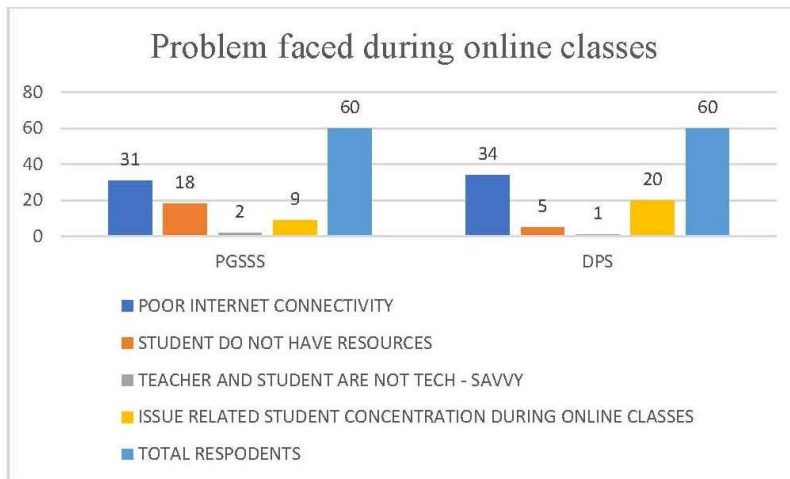
Lack of proper internet connectivity was one the main problem faced by the students during online mode issues pertaining to students concentration were observed more in private schools than govt schools.

17. Perception of students regarding convenience of Study during online learning
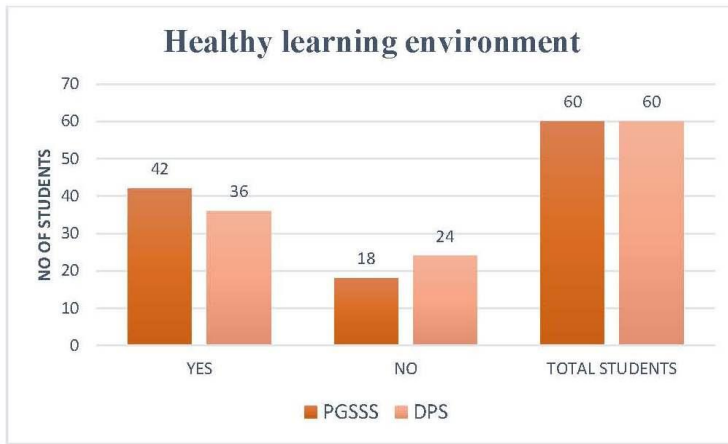
QUESTION	PGSSS	%	DPS	%
YES	31	51.67	40	66.66
NO	29	48.33	20	33.34
TOTAL	60	100	60	100

Study hard in online learning
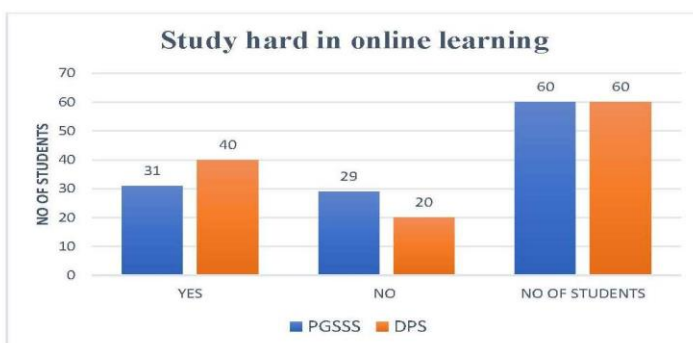
Attitude of students regarding convenience of study materials during online learning was positive in both schools
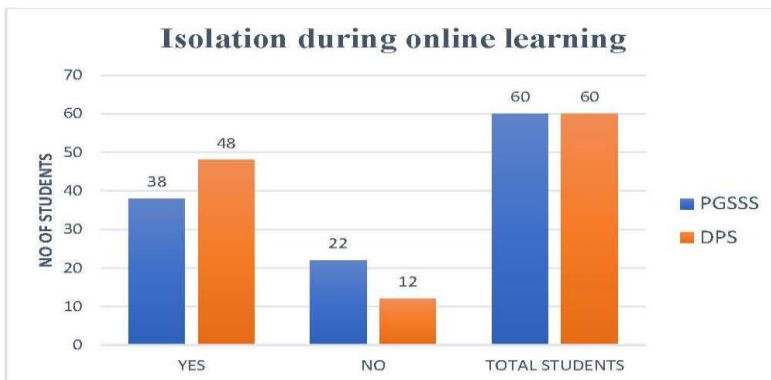
18. Congenial Learning Environment.

QUESTION	PGSSS	%	DPS	%
YES	42	70	36	60
NO	18	30	24	40
TOTAL	60	100	60	100

Majority of students found Congenial Learning Environment during online mode teaching.

19. Feeling of isolation during online learning

QUESTION	PGSSS	%	DPS	%
YES	38	63.34	48	80
NO	22	36.66	12	20
TOTAL	60	100	60	100

Majority of students observed isolation during online learning mode in both schools.
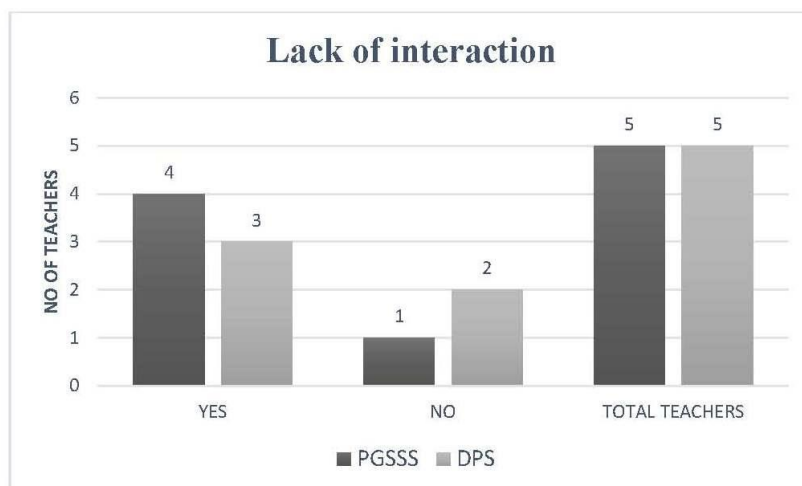
Analysis of Teachers Feedback

1. Teaching mode

QUESTION	PGSSS	%	DPS	%
ONLINE	0	0	0	0
OFFLINE	5	100	5	100
TOTAL	5	100	5	100
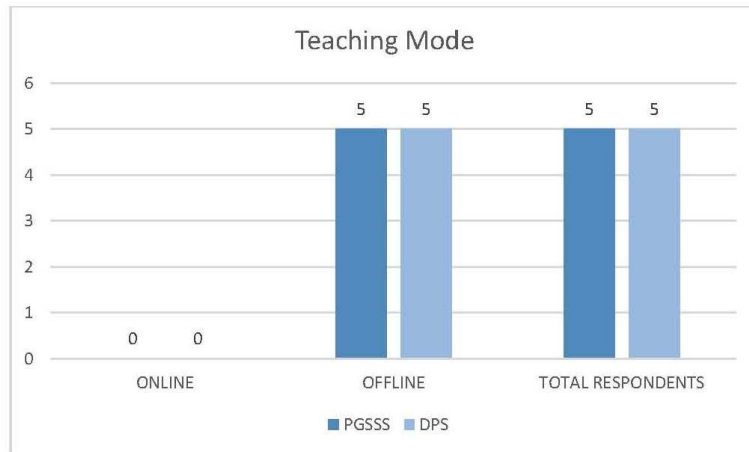
Teachers preferred fully offline mode in both schools .

2. Lack of interaction

QUESTION	PGSSS	%	DPS	%
YES	4	80	3	60
NO	1	20	2	40
TOTAL	5	100	5	100

Teachers realised lack of physical presence of student major factor for ensuring effective interaction with students.
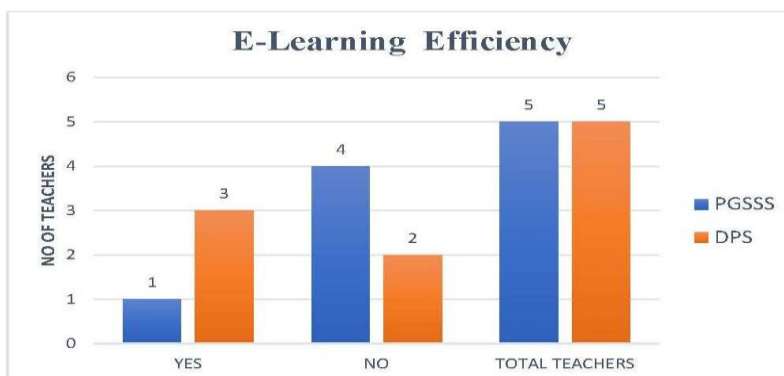
3. Accessibility of Sources of e-learning Mode

QUESTION	PGSSS	%	DPS	%
YES	5	100	5	100
NO	0	0	0	0
TOTAL	5	100	5	100
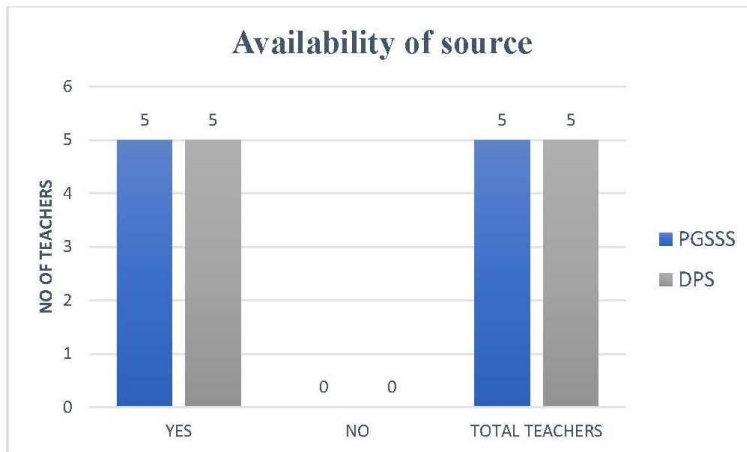
Teachers found easy accessibility of sources of e learning mode of teaching in both schools.
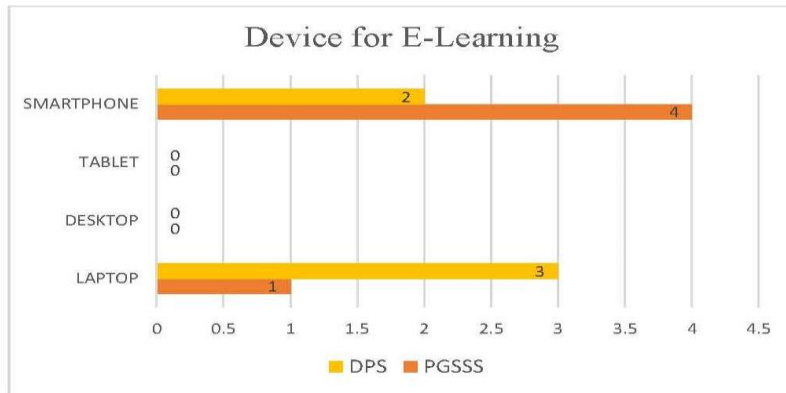
4. Productivity of E-learning

QUESTION	PGSSS	%	DPS	%
YES	1	20	3	60
NO	4	80	2	40
TOTAL	5	100	5	100

Teachers in govt schools found the e learning mode less productive than private schools
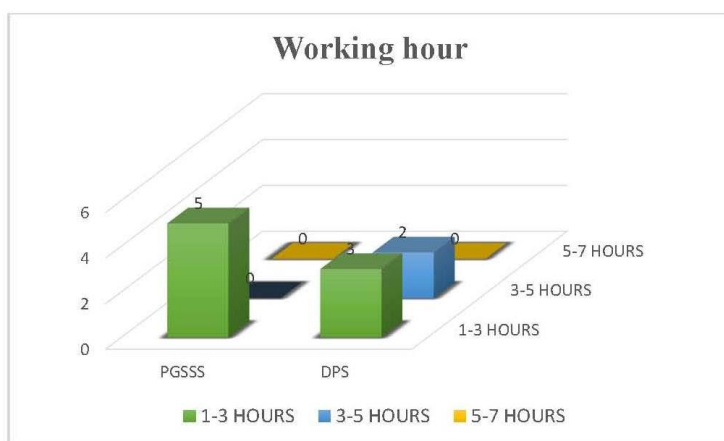
5. Suitability of Devices for E-learning

QUESTION	PGSSS	%	DPS	%
LAPTOP	1	20	3	60
DESKTOP	0	0	0	0
TABLET	0	0	0	0
SMARTPHONE	4	80	2	40
TOTAL	5	100	5	100

The laptop has been used mostly in private schools and smart phones suitable used in govt schools.
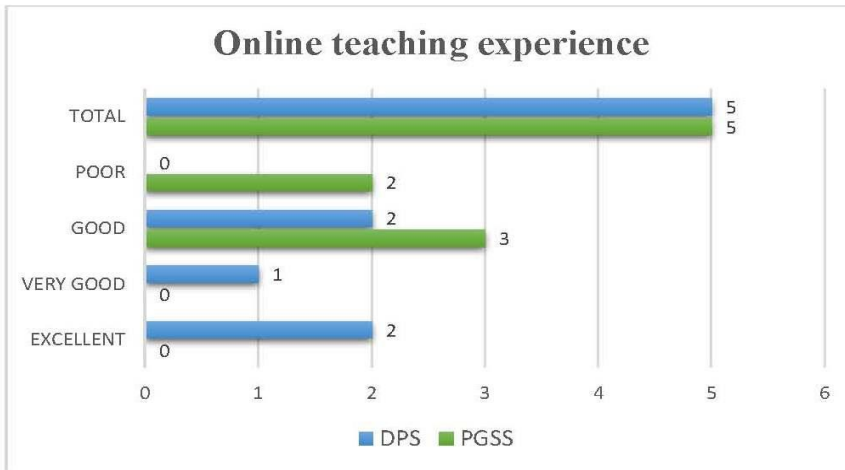
6. Devotion of Working Hours

QUESTION	PGSSS	%	DPS	%
1-3 HOURS	5	100	3	60
3-5 HOURS	0	0	2	40
5-7 HOURS	0	0	0	0
TOTAL	5	100	5	100

Reasonable working hours 1 – 3 hours were mostly followed in both schools.

7. Outcome of Online teaching experience

QUESTION	PGSSS	%	DPS	%
EXCELLENT	0	0	2	40
VERY GOOD	0	0	1	20
GOOD	3	60	2	40
POOR	2	40	0	0
TOTAL	5	100	5	100

Online teaching experience has been noticed successfully in private school than govt schools.

8. Use of methods for E-learning other than Internet facility

QUESTION	PGSSS	%	DPS	%
PRE-DOWNLOADED	2	40	3	60
CD- DVD'S	0	0	0	0
PROJECTORS	0	0	0	0
ANY OTHER	3	60	2	40
TOTAL	5	100	5	100
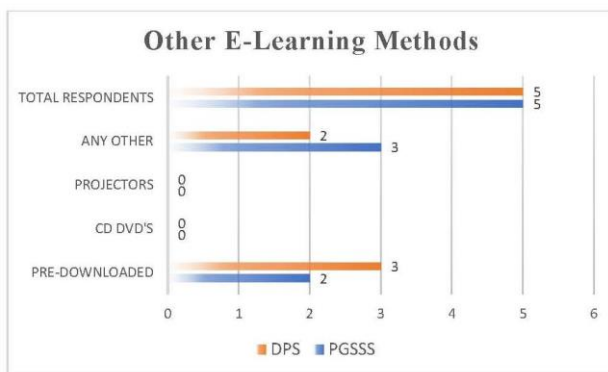
The usage of pre downloaded mathods of e learning other than internet facility has been used mostly in private schools than govt schools.

4.1 Findings

The following findings were observed from the analysis and interpretation of qualitative and quantitative information:-

1. There has been ups and down of enrolment in PGSSS whereas in DPS there has been by and large same enrolment in comparison to initial years.
2. Enrolment of Gen, ST and OBC Category has decreased as compared to Precovid pandemic period but enrolment of students in SC category increased in PGSSS. In DPS enrolment of Gen and SC category has decreased but enrolment of ST has increased and OBC marginally increased.
3. Facilities of digital infrastructure imparting online education in DPS have been better than PGSSS.
4. On the basis of observations of faculty members and students offline classes are more effective than online classes because offline teaching/learning provide better quality education due to face-to-face interaction.
5. Feedback from students during online education is ineffective due to lack of face to face interaction between teachers and students.
6. Students were irresponsible during online classes on the basis of the feedback of the faculty members of both schools.
7. Role of management in DPS during online classes was better than PGSSS.
8. Google Meet was the most used online platform by both schools during online classes.
9. Students were found un-attentive, non-serious and indifferent.
10. There was lesser use of online digital platform during pre-covid period.
11. Maximum use of online digital platform during post-covid period was observed.
12. Both schools followed SOPs smoothly/properly.
13. Students of DPS faced difficulties in finding out proper source of E-learning platform than students of PGSSS.
14. Online education has an adverse impact on mental health of students and teachers.
15. Poor internet connectivity was the basic problem faced by the majority of students and teachers.
16. Congenial and healthy environment was found during online education at home.
17. Students felt isolation during online classes which also caused psychological problems.
18. On the basis of observations of faculty members majority of respondents used both methods Pre- downloaded and any other method.
19. Average working hours of faculty members during online education were 1- 3hours.
20. Device mostly used by faculty members during distance learning in PGSSS was Smartphones and laptop in DPS.
21. Teachers of DPS were more satisfied with the technology and software of E-learning as compared to PGSSS.
22. Teachers felt comfortable during online classes due to facilities at home.

4.2 Suggestions

Following suggestions are being made on the basis of finding of the study.

1. Mode of offline teaching/learning has been found effective than online mode of E – Learning as per the observation of faculty members.
2. Government should make special provisions of budgetary allocation for strengthening digital infrastructure in Government school especially for smart classes.
3. Students should be sensitized regarding SOPs to be followed during pandemic.
4. The bandwidth of internet should be increased.
5. IT Education should be made mandatory for every student enrolled in +1 because of job opportunities in all sectors.
6. Software should be devised to check misuse of mode of E –Learning.
7. Government should pay attention for starting yoga classes for reducing mental stress of the students.
8. Students should be made aware about increasing use of E-learning education and also its relevance and effectiveness in the era of globalisation and technological advancements.
9. All faculty members should be updated about new methods of using E-learning platforms.
10. They should also be encouraged to use offline -platforms like pre-loaded contents under computer system due to non-availability of internet.
11. IT labs should be well equipped with latest academic softwares.
12. Parents/Guardians should keep watch on their wards during online education.
13. There should be effective mechanism for interaction/feedback between parents and teachers.

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