



An Understanding on Technology-Driven Challenges among the Teachers: An Analytical Study

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Abstract

With the prevalence of new media technology, Internet has been the dominant factor. Education has evolved from residing with the gurus traditionally, to classroom learning system, and the online learning in the present COVID-19 era. The transition towards technology-driven learning has been challenging for the teachers and instructors significantly higher than the students, given the preparation required for taking a virtual class in terms of content and technology wise. There are several prominent factors altering the course of digital learning, specifically the adaptability of the teachers towards the gadgets, Internet, software applications and other digital tools utilized in the online learning system, which the present study makes an attempt to study.

Keywords: Higher Education, Health, New Media Tools, Students, Technology, Teachers

Introduction

Conventional approach of education and learning

Education plays a very crucial role in the progression of civilization. Over the years, there has been a gradual shift in the methodology of learning with the advent and advancement of technology. Conventionally, the chalk and blackboard style of learning was followed, initially in small grounds under the shade of trees which subsequently took over with four-walled classrooms.

In ancient times, in India, there was the Gurukula system of education, where anyone willing to study and learn went to the Guru or teacher's house and requested to impart their teachings. When the Guru (teacher) accepted the request, the disciple had to stay at the residence of the teacher and help him with all the chores at home and otherwise. The Guru taught several things from Sanskrit to holy scriptures and subjects like Mathematics and Physics. The learning was not restrictive and implicated memorizing facts and figures, but was very closely connected to nature and to life, with an application-based approach.

Lord Thomas Babington Macaulay instituted the concept of the modern school system in the 1830s when the English language was introduced in the curriculum. The curriculum then evolved to modern subjects like mathematics, science, and subjects like metaphysics and philosophy were presumed to be unnecessary. The pattern and methodology of teaching shifted to classrooms and the connection with nature was completely disconnected. The close relationship between the teacher and disciple was also discontinued.

The conventional education system revolved around blackboard, chalks, notebooks, textbooks, pens, and pencils. The students were supposed to learn in the confined classrooms; however, there the format of learning is interactive, where the students get to learn new ideas and concepts from their peers as well. At the same time, the one-to-one approach is possible, and the students would have the privilege to personally ask the teachers about any queries or guidance. The students, registered to a particular school or college, have to attend the classes on a regular basis and are marked and given assignments accordingly.

There are several advantages of the conventional learning pattern-

- The students will get a wider social exposure with fellow students from different backgrounds, skills, and will push the students as a whole to learn and perform better.
- Within similar age groups, academics and extracurricular activities are taken up in the right way with their learning potential and skills explored to the fullest with encouragement and also boost the confidence and morale of the students.
- The students get the complete learning benefit with this pattern and get proper guidance when needed, as in the classroom set-up any queries or difficulties can be resolved right away. Further on, when the students are not paying attention, the teachers can identify that, speak to them and guide them accordingly. (1)(2)

Innovation in education and learning

With the advancement in technology, 'Education' has gradually taken a digital leap. From the classic chalk and blackboard style, where the teachers are face-to-face interacting with the students to the development to a laptop or mobile phone screen for learning and teaching, technology got inherently automated into the education system. This can be significantly elicited with the two aspects:

- Advancement in classroom teaching:

In the conventional scenario, education followed a classroom system with props of chalks or markers, blackboard or whiteboard, notebooks, textbooks, etc. However, with the submerging integration of technology, the classrooms have evolved with televisions, laptops, projectors, speakers, followed by usage of laptops and mobile phones as an aid apart from the notebooks and reference books. The Internet has been widely used, with assignments now going online with Gmail, journal completion now getting easier with sharing the images on WhatsApp, etc.

In any case, the face-to-face learning was prevalent and acknowledged, but was further enhanced with several other digital and technological tools, thereby making it a semi-technology-based process. This can be further elicited with certain instances, like watching of subject-related videos on Television or projector, photographs of assignment shared on WhatsApp, learning of topics with Powerpoint presentations, etc. So, the classrooms have gradually evolved by incorporating several aesthetics of technology.

- Usage of e-learning platforms, websites, and applications:

The conventional process of being present in the classrooms of the schools and colleges has advanced further with globalization, technology and Internet. So, now, learning was not confined to the four walls of the classroom based in a specific location, but, reached beyond the seas with Internet. So, with applications, learning advanced further. So, learning can be in the form of Massive Open Online Courses or Certifications like from Udemy, Harvard University, Shaw Academy, SWAYAM, etc. But learning can also be distance-based with usage of applications like Zoom, Google Meet, where there is virtual interaction just like a classroom. Further, these platforms, are also used to promote learning and educational institutions with the webinar format.

There are different perspectives with respect to pros and cons of this globalization integrated with education. Education has become more personalized, and has surpassed all the shortcomings of the traditional methodologies and also developed learning into an impeccable process. This virtual format gives increased flexibility to access the learning for a subject at their own convenience and understanding of the subject. This is a wider opportunity to learn from the best teachers in the world for a specific subject connected with help of Internet and comes up as a customized approach. The quality of content given to the students while teaching in the online classes is enriched and revised from the information incorporated into teaching by other fellow teachers from different educational institutes, which presents the approach of modular learning. This also puts forth digital abstraction of the learning content, where new and effective tools add up to make learning more interesting and it will be imparted effectively.

COVID-19 and learning

COVID-19 pandemic has been one of the deadliest in the history and has affected several domains of life, making things more remote and connected with the help of technology and Internet. As COVID-19 pandemic's severity led to home isolation and lockdown, the education pattern with classroom learning came to a standstill. With the suppression of face-to-face interaction, what followed was a virtual interaction to not inhibit the progression of education and further continue the process of teaching and learning. So, learning has shaped further with online platforms like Zoom, Google Meet, Microsoft, etc., where virtual face-to-face interaction was possible. Teachers have taken a lot of initiatives starting from March-April 2020 with the virtual learning initiatives which has given the students an effective learning experience right in the confinement of their homes with the laptop, tablet or phone and then further get sufficient amount of time to complete the homework and assignments rather than travelling to and from the educational institutions and get more time to refresh and concentrate on the learning aspect.

Online classrooms and platforms

There are numerous virtual platforms based on the requirements of the teachers, students and parents. There are specific teacher-student communication platforms which puts forth interactive video lectures and effectively communicate in real-time. These platforms promote students to collaborate and communicate effectively and also have the interface to share videos, photos and assignments. Some of the popular platforms used are as follows:

- Flipgrid: This application is a platform for sharing of videos for a relevant subject, and is absolutely free.
- Zoom: It is a highly popular application for video-conferencing. The video lectures require a passcode which imparts security to the learning environment for students.
- Slack: It is an instant messaging tool, where the students have easy access to study materials after creating start hub.
- Bloomz: This application conveniently aids conversation between parents and teachers with access to class updates and track the behaviour along with availability of translation to 100 regional languages.
- ClassDojo: This platform gives parents the platform to join their children while a class is conducted via any device.
- Microsoft Teams: Microsoft Teams gives the complete environment of a virtual classroom where it becomes convenient for both the students and the teachers to share videos, homework assignments and further communicate via chatting interface.

Further, there are also classroom management platforms which are the tools that aid in making the learning function smoothly and are inherently time-saving. These platforms are for managing and improving the behaviour of the students, time management and nurtures a supportive and healthy environment. Some of these platforms are:

- Google Classroom: The usage of Google Classroom requires a Gmail account. The platform is used for easy communication, teamwork and exchange of homework assignments. Further, it can also be utilized to curate a class website which aids in storage of resources or information for students.
- Buncee: It is a simple tool which has the interface features to create course materials, presentations and stories and has 2,000 templates for curating charts and visual art. It is multi-purpose tool used for educational, business and person applications.
- Edmodo: It is a collaborative platform used for connecting the teachers, students and the parents. It is commonly used for supporting the students, giving quizzes, exchange of homework and assignments, and also curating posts and messages.
- Edulastic: Edulastic has high standards as an educational tool as it aids in administering assessments and to track the progress. It can be used in synchronization with Google Classroom.
- Eduplanet21: A highly resourceful platform, which allows teachers and the groups to receive a free subscription to utilize the platform.
- ClassMax: This is an online educational tool which supports teachers with curating the system like creating seating charts, monitoring the behaviour and further assessing the progress of the students.

There are several learning platforms based on a game format which blends a fun element into learning. These platforms have several features like quizzes, badges, points system, which along with classroom participation helps in developing critical thinking skills. Some of the best examples are:

- Prodigy Math Game: It is a game-based platform which incorporates learning with challenge levels having curriculum-based questions, further earn rewards and battle other friends.
- Kahoot: It is curated to work along with video conferencing applications like Zoom, Google Meet, etc. and focuses on learning by blending education questions with fun games.
- Gimkit: The platform has clever learning content which gives students the space to answer questions at their own comfortable pace. For every correct answer, rewards are in-game cash which can further be used for upgrades and power-ups.
- Quizlet: This application gives the format to learn a variety of subjects like Art, Math, Science, Humanities and Languages. The interface has flashcards and games to make learning enjoyable and has study modes according to the students' learning style.

Apart from the above applications, there are several websites or applications which are presently used for e-learning platforms, which involves specific skills or even a certification diploma. Some examples are Skillshare, 3P Learning, Dialpad, Docebo, Habyts. There are certain other applications which can be exclusively used by adults, which includes Coursera, Udemy, EDx, etc. (3)

Issues with Digital learning

There are several issues encountered by the teachers and students with context to digital learning thereby making it a challenging process. Some of the issues regarding the digital learning are elicited as follows:

- Affordability for technology is an important factor, as Internet and gadgets like laptop, smartphone, etc are a luxury.
- Institutional training for utilizing technology has been devoid for several teachers, which is one of the biggest hurdles to make online learning convenient for the students.
- Availability of Gadgets
- Technical issues with the laptop or smartphone like display issues, hardware or software inefficiency.
- Power (electricity) availability, as the remote regions of the country do not have 24*7 power supply.
- Lack of required digital infrastructure in the educational institutions
- Connectivity issues with Internet especially in cases of heavy rainfall, power cut, etc.
- Computer literacy for teachers.
- Data privacy and Data security.
- Lack of adaptability to online learning for students and online teaching for teachers.
- Eye-strain due to increased screen-time puts down digital learning.
- Restrained social interaction with remote confinement and technology integration.
- The content of digital learning and courses is not standardized in regional languages.
- The course content is not aligned according to the requirements of the deaf and hard hearing students.

3.0 REVIEW OF LITERATURE

The technology interface with education has been challenging which can be reflective of in the following research studies.

Teachers' use of technology and the impact of Covid-19

In the general scenario, the teachers followed the conventional method of teaching face-to-face in a classroom. However, with the COVID-19 pandemic induced lockdown, the learning and teaching shifted to online mode to ensure that there is no break in the education of the students. The shift from offline to online learning has been intruded with several factors like the adaptability and the skills of the educators which should synchronize with the learning process. Based on the results of the proposed study, it has been found that the teachers utilize technology, however, a small proportion of them lack the required confidence, are afraid to use the technology and avert utilizing it. (4)

Impact of modern technology in education

R. Raja and P.C. Nagasubramani in their research study have iterated about the impact that modern technology has delved further into the domain of education. The education system has been revolutionized after the advent of technology and its utilization cannot be neglected amid the schools and colleges in the present scenario. Technology plays a four-fold role in education – with being a part of curriculum, as an instructional delivery system, as a means of support for imparting instructions along with being a tool to make the learning process a little better. However, technology also has certain barriers like lack of time, lack of access, lack of resources, lack of expertise and lack of support. Technology, in the positive light promotes enhanced learning and teaching, globalization without any geographical limitations. There are several cons as well like a drop in the writing skills, more incidents of cheating and a decline in the required focus and concentration among the students. (5)

Online Education: Benefits, Challenges and Strategies During and After COVID-19 in Higher Education

Pitambar Paudel in his research study has explored both the teacher's and the learner's perspective on online education with respect to certain parameters like benefits, challenges and strategies during and after the COVID-19 pandemic phase for higher education in Nepal. The research design comprised of conducting online survey with a questionnaire to get the perspective of 280 students and teachers spread from five universities. Based on the research findings, online education was considered as a benefit in context to promoting online research, aided in building a connection among the practitioners and global community along with access to huge and authentic sources of knowledge along with challenges of time-management skills, increased liberty to the teachers and the learners and prevalence of a good internet connection at workplace. The most fundamental requirements for practitioners when it comes to online education are time-management skills, preparedness for technology and computer literacy. The preference has been a blended approach of both online and offline learning among the respondents. Further, the findings indicate that online education can be an alternative to the conventional approach of learning. (6)

A study on perception of teachers and students toward online classes in Dakshina Kannada and Udupi District

Abhinandan Kulal and Anupama Nayak in their research study have analysed the perception of the teachers and students with reference to the mode of online learning induced by COVID-19 in the Dakshina Kannada and Udupi district. Based on the descriptive analysis, it can be iterated that the teaching practices for online education are acceptable to the teachers and are also significantly confident when it comes to the effectiveness parameters. However, the teachers have revealed that more training and support from their respective institutions is required. The teachers, in an overall scenario, have a mixed response. Regarding the students, they are comfortable with online classes and are provided with required support from the teachers, though, the teachers are experiencing difficulties for managing the online classes as they have been devoid of the required training and development. The students further

believe that online classes cannot be a replacement for the traditional classroom method of teaching and learning. (7)

Methodology

The proposed research study has been conducted with the quantitative tools and techniques, where the respondents are teachers, academicians and professors from different colleges and universities to have a comprehensive approach on their adaptability towards the modern approach of learning integrated with technology. The questionnaire covers a number of points from the usage of social media applications, followed by the usage of several online learning portals – MOOCs, and several digital applications and tools which facilitate the teaching and the learning process. The survey was conducted among 284 respondents who are teaching at private and government educational institutions.

Findings And Analysis

The proposed study comprises of a survey with questionnaire circulated among 284 respondents (teachers) from private and government institutions, which had several elements from the general demographics to the teachers' perception on computers, online courses, digital tools, incorporating of social media tools and technology into the learning process. After the statistical findings are presented, a comprehensive discussion is written to further elaborate the findings and the required implications.

The first part comprises of the demographics, which has been presented as follows:

General Demographics

Table 1.1 Distribution of study respondents based on Gender in Teachers

Gender	Frequency	Percentage
Female	170	59.9
Male	114	40.1

From the respondents, 59.9 % have been female teachers, whereas, 40.1% have been male teachers.

Table 1.2 Distribution of Family Income in Teachers.

Family Income	Frequency	Percentage
Below 15000	6	2.1
15000 to 30000	69	24.3
30000 to 60000	86	30.3
Above 60000	123	43.3

From the study, majority of the respondents, around 43.3 % of the teachers have more than Rs. 60,000 as their income whereas 30.3 % have income range from Rs. 30,000 to 60,000, whereas only 2.1 % have the income less than Rs. 15,000.

Table1.3 Distribution of Area of Residence in Teachers.

Area of Residence	Frequency	Percentage
Urban	227	79.9
Rural	57	20.1

From the study on respondents, it has been found that majority of the respondents (teachers), 79.9 % are residing in urban zones and only 20.1 % of them reside in rural regions.

Table 1.4 Distribution of Institution type among Teachers.

Institution Type	Frequency	Percentage
Government	111	39.1
Private	173	60.9

From the respondents in the proposed study, 60.9 % of the respondents are teaching in private institutions, whereas, only 39.1% have been teaching in government colleges.

Perception, Awareness, Adaptability and Challenges

This is the second part of the statistical analysis, where with the questionnaire, the perception, awareness, adaptability towards digital learning of the teachers has been elicited.

Table 1.5 Teachers' Attitude towards Computers.

Factor	Yes	No	Not Sure
Major source of information	227 (79.9)	30 (10.6)	27 (9.5)
Efficient source of information	224 (78.9)	54 (19.0)	6 (2.1)
Help to acquire new knowledge	239 (84.2)	36 (12.7)	9 (3.2)
Should be priority in education	218 (76.8)	39 (13.7)	27 (9.5)
Very ease and comfortable to use	224 (78.9)	51 (18.0)	9 (3.2)
Complicates my task in classroom	96 (33.8)	137 (48.2)	51 (18.0)
Kills my creativity	66 (23.2)	170 (59.9)	48 (16.9)
Hinder my learning	54 (19.0)	197 (69.4)	33 (11.6)
Entertainment tool than learning tool	42 (14.8)	209 (73.6)	33 (11.6)
Reduced writing skill	108 (38.1)	156 (54.9)	20 (7.0)
Helps to connect people	206 (72.5)	66 (23.2)	12 (4.2)
Increased unethical practices	126 (44.4)	72 (25.4)	86 (30.3)
Helps to learn in pandemic	245 (86.3)	24 (8.5)	15 (5.3)
Made learning more ease	215 (75.7)	51 (18.0)	18 (6.3)
Effective tool for teaching	185 (65.1)	75 (26.4)	24 (8.5)
Learning is better when added with the traditional method	212 (74.6)	48 (16.9)	24 (8.5)

Above table 1.5 shows the teachers' attitude towards computers measures through various components. It is noted that approximately, 80% of teachers responded that the computers are major sources of information, efficient source of information, it helps to acquire new knowledge, it is very easy and comfortable to use. It can also be noted that 50% of the teachers disagree that computers complicate their tasks. And 60% of the teachers also disagree to the statement that computer kills creativity. It can also be seen that approximately 75% of the teachers disagree that computers are merely used as entertainment rather than for learning. Only 15% of the teachers agree to the later statement. 40% of the teachers agree that computer does reduce the writing skills. 86.3% of teachers agree that computers help in pandemic for learning. 75% of the teachers also agree that learning is better when the computer is added with the traditional method of teaching/learning.

Table 1.6 Frequency of computer tools usage among teachers.

Tools	Multiple times in a day	Daily	Weekly	Occasionally	Never Used
MS Word	197 (69.4)	51 (18)	0	30 (10.6)	6 (2.1)
MS Office	140 (49.3)	66 (23.2)	6 (2.1)	30 (10.6)	42 (14.8)
MS Power Point	143 (50.4)	33 (11.6)	51 (18)	33 (11.6)	24 (8.5)
Unix	24 (8.5)	21 (7.4)	6 (2.1)	24 (8.5)	209 (73.6)
Linux	21 (7.4)	24 (8.5)	6 (2.1)	15 (5.3)	218 (76.8)
Ubuntu	33 (11.6)	9 (3.2)	6 (2.1)	18 (6.3)	218 (76.8)
Printer	66 (23.2)	66 (23.2)	59 (20.8)	48 (16.9)	45 (15.8)
Scanner	93 (32.7)	24 (8.5)	47 (16.5)	69 (24.3)	51 (18)
GMAIL	162 (57)	83 (29.2)	18 (6.3)	21 (7.4)	0
Facebook	107 (37.7)	63 (22.2)	18 (6.3)	33 (11.6)	63 (22.2)
Twitter	39 (13.7)	51 (18)	21 (7.4)	24 (8.5)	149 (52.5)
Instagram	54 (19)	60 (21.1)	6 (2.1)	36 (12.7)	128 (45.1)
LinkedIn	60 (21.1)	24 (8.5)	30 (10.6)	54 (19)	116 (40.8)
WhatsApp	185 (65.1)	63 (22.2)	15 (5.3)	0	21 (7.4)
Telegram	56 (19.7)	33 (11.6)	33 (11.6)	60 (21.1)	102 (35.9)
Zoom Platform	48 (16.9)	87 (30.6)	60 (21.1)	44 (15.5)	45 (15.8)
Google Drive	122 (43)	75 (26.4)	39 (13.7)	48 (16.9)	0
YouTube	170 (59.9)	39 (13.7)	45 (15.8)	30 (10.6)	0

A summary of the frequency of computer tools used by teachers is given in the above table. From the above table, it can be noted that MS Word and WhatsApp are the most frequently used tools by teachers with 69.4% and 65.1% respectively for multiple times in a day. It can also be noted that 59.9% of the teachers use YouTube multiple times a day. Approximately 15% of the teachers use the other operating system such as Unix and Linux either multiple times in a day or daily. 30% of the teachers use LinkedIn either multiple times a day or daily. Approximately, 88% of teachers use Gmail either multiple times a day or daily.

Table 1. 7 Awareness on MOOCs (Massive Open Online Courses) among Teachers

Awareness on MOOC	Frequency	Percentage
Yes	218	76.8
No	66	23.2

From the respondents, majority of them, with 76.8 % have been aware about the online courses and certification, whereas, only 23.2% of them had no awareness on it.

Table 1.8 Completion of MOOC or Free Online Certifications among Teachers

Number of Certifications	Frequency	Percentage
None	143	50.4
1 to 3	75	26.4
3 to 5	24	8.4
5 and above	12	4.2
Never Heard	30	10.6

From the respondents, 26.4 % have completed between 1 to 3 certifications, 8.4 % have completed 3 to 5 certifications, and only 5 % of the teachers have completed 5 and above certifications. However, the majority, with 50.4 % have not completed any certification, and 10.6% have never heard about MOOCs.

Table 1.9 Use of Digital Education Platforms for Learning/Teaching by Teachers

Digital platform	Yes	No	Never Heard
Edmodo	63 (22.2)	149 (52.5)	72 (25.4)
Socrative	42 (14.8)	158 (55.6)	84 (29.6)
Projeqt	33 (11.6)	170 (59.9)	81 (28.5)
Thinglink	20 (7.0)	171 (60.2)	93 (32.7)
ClassDojo	15 (5.3)	170 (59.9)	99 (34.9)
eduClipper	14 (4.9)	189 (66.5)	81 (28.5)
Storybird	20 (7.0)	180 (63.4)	84 (29.6)
Kahoot	44 (15.5)	153 (53.9)	87 (30.6)
Scratch	18 (6.3)	182 (64.1)	84 (29.6)
Prezi	21 (7.4)	158 (55.6)	105 (37.0)
SelfCAD	0	194 (68.3)	90 (31.7)
Quizlet	27 (9.5)	179 (63.0)	78 (27.5)
Adobe Spark Video	6 (2.1)	203 (71.5)	75 (26.4)
Khan Academy	42 (14.8)	191 (67.3)	51 (18.0)
Seesaw	15 (5.3)	185 (65.1)	84 (29.6)

Table 5.9 illustrates that widely acclaimed digital education platforms used by teachers are tabulated above. Response to the use of such a digital platform is very low. The highest used platform is Edmodo with the rate of 22.2% among the teachers. The platform SelfCAD is not used by any of the teachers. As high as 35% of teachers are not aware of a platform called ClassDojo. Approximately 60% of the teachers have heard of it but have not used it for their learning/teaching.

Table 1.10 Number of digital education platforms used for learning/teaching by teachers

Number of Platforms	Frequency	Percentage
None	165	58.1
1 to 5	113	39.8
>5	6	2.1

From the respondents, 58.1% of the respondents do not use any digital education platforms for learning and teaching, whereas, 39.8 % of the respondents used 1 to 5 platforms and only 2.1 % of the teachers have used more than 5 tools.

Table 1.11 Usage of Social Media Tools for Learning/Teaching by Teachers

Social Media Tools	Yes	No	Never Heard
Facebook page to broadcast	90 (31.7)	188 (66.2)	6 (2.1)
Facebook live to stream live lectures and group discussions	60 (21.1)	206 (72.5)	18 (6.3)
Twitter as class message board	39 (13.7)	224 (78.9)	21 (7.4)
Instagram for photo essays	60 (21.1)	218 (76.8)	6 (2.1)
Class blog for discussion	75 (26.4)	191 (67.3)	18 (6.3)
Assign blog posts as essay	60 (21.1)	206 (72.5)	18 (6.3)
Class specific Pinterest board	30 (10.6)	236 (83.1)	18 (6.3)
Include social media links on college websites	125 (44.0)	156 (54.9)	3 (1.1)
Interest based Facebook groups	45 (15.8)	221 (77.8)	18 (6.3)
Follow interest-based Facebook groups	63 (22.2)	212 (74.6)	9 (3.2)

Above table 1.11 displays the use of social media tools in learning/teaching by teachers. The highest response rate was 44.0% for including social media links on college websites. Then tools like a class blog for discussion is highly used by 26.4% of the teachers. 31.7% of teachers use Facebook pages to broadcast. Only 13.7% of teachers used Twitter as a class message board.

Table 1.12 Challenges faced by teachers on online learning/teaching

Challenges	Yes	No	Not sure
Affordability of Technology	185 (65.1)	84 (29.6)	15 (5.3)
Institute support for training of technology	155 (54.6)	114 (40.1)	15 (5.3)
Gadget shortage and crashing system	170 (59.9)	102 (35.9)	12 (4.2)
Connectivity	188 (66.2)	87 (30.6)	9 (3.2)
Computer literacy	161 (56.7)	114 (40.1)	9 (3.2)
Adjusting of online courses to deaf or hard of hearing students	131 (46.1)	117 (41.2)	36 (12.7)
Data privacy	137 (48.2)	117 (41.2)	30 (10.6)
Security	152 (53.5)	117 (41.2)	15 (5.3)
Lack of interaction	146 (51.4)	117 (41.2)	21 (7.4)
All subjects cannot be taught online	173 (60.9)	105 (37)	6 (2.1)
Not all teachers/students are tech-savvy	179 (63.0)	90 (31.7)	15 (5.3)
Lack of standardised content for regionallanguages	146 (51.4)	129 (45.4)	9 (3.2)
Increase in screen time	170 (59.9)	105 (37)	9 (3.2)
Lack of formality	155 (54.6)	108 (38)	21 (7.4)
Insufficient digital infrastructure	167 (58.8)	108 (38)	9 (3.2)
Limited social interaction	167 (58.8)	93 (32.7)	24 (8.5)

Above table 1.12 presents the challenges faced during online learning/teaching by teachers. As high as 66.2% of teachers reported that there is a challenge in connectivity. 65.1% of teachers reported that they face a challenge of affordability of technology. 60% of teachers have a challenge on gadget shortage and crashing system. 63% of the teachers also agree that not all of the teachers/students to be teach-savvy which is a challenge. Approximately, 60% of teachers also agreed that there is insufficient digital infrastructure and limited social interaction which makes it challenging for them to teach or learn.

DISCUSSION:

Based on the research findings, teachers are in the process of adapting towards the new revolution in the domain of education. Regarding the usage of the computers, the teachers consider it to be a priority for the education process, is an effective tool used in technology and has supported the process of learning and education during the COVID-19 pandemic. More than 75% of the teachers are aware about the Massive Open Online Courses (MOOCs), however, more than 50 % have not completed any online

courses. The teachers hardly use any digital tools (around 20 % or less), and most have not even heard about the variety of digital tools. Though, there are significantly better figures when it comes to incorporating the usage of social media platforms for the education process. The online learning process has several challenges encountered by the students in the learning and by the teachers amid the teaching process. Some of these are affordability of technology, connectivity and technical issues, adaptability, lack of institutional training and adequate digital infrastructure.

Conclusion

Technology being both the boon and the bane comes with a flip side. For the younger generations it is an inherently convenient utility, but an arduous task for the older generations. However, this difference is not the age or generational gap, but, the gap towards adaptability and convenience towards technological utility. So, teachers are mid-way adapting to technology and the whole domain of digital learning has been a new landmark to the conventional classroom learning. The digital learning tools are a novel approach along with the MOOCs, which the teachers and instructors are still learning about. There has been awareness about the digital learning tools and applications to a certain extent, however, there is still a significant gap when it comes to implementation due to the challenges encountered regarding adaptability, connectivity, affordability and technical issues. Also, the age factor is a crucial point among the teachers towards adaptability and implementation part, with the younger generations being better tech-savvy and tech-friendly over the senior academicians.

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