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Research Article

The New 'Normal' in the Era of COVID-19: Students' and Teachers' Perspectives on E-Learning

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A B S T R A C T

Introduction: The COVID-19 global pandemic and a lockdown of everyday life activities, forced a switch from school learning to e-learning. This study was conducted to know the perceptions of students and teachers towards e-learning.

Method: This was a cross-sectional Google Form-based online survey conducted over a period of 1 month (6/10/2020 to 8/11/2020). The study population was students and teachers across the state, central and ISCE board from cities, mainly from Gujarat. The difference in the proportions of responses among students and teachers was analysed using Chi-square.

Results: The survey participants included 753 students and 488 teachers. The majority (78.8%, 593/753) of the student respondents were from State Board. Nearly 83% (622/753) of students and 66.8% (326/488) of teachers agreed that e-learning kept them safe from the threat of COVID-19. Almost half of both the student and teacher respondents dedicated 3-5 hours exclusively to e-learning. Students were 2.3 times more likely than teachers, to use screens for other activities (OR 2.3; CI: 1.8 - 2.9).

Conclusions: The majority of students and two-thirds of teachers perceived online learning as a measure to keep them safe from the threat of COVID-19. Nearly 3-5 hours were dedicated to e-learning in a day by more than half of the students. There were several perceived advantages (in terms of studying in the comfort of home and less travel time) as well as disadvantages (in terms of decreased concentration and cost of gadgets) of e-learning.

Keywords: Students' Perception, Teachers' Perception, Online Education, COVID-19, E-Learning, Smartphones, Screen Time

Introduction

The global pandemic of COVID-19[1] resulted in the lockdown of all activities of normal life including education, bringing the school education and people involved face-to-face with the prospects of switching over to e-learning and teaching all of a sudden.

Parents, teachers, students, and education managers were heralded into a situation finding ways to continue with teaching/ learning and academic activities, at a time when the usual school routine was not an option.[2,3]

School education essentially has remained a classroom teaching with direct use of chalk and board, and practical demonstrations; though some urban schools, mainly in the private hands, have embraced technology in a step-up manner over time. Over the past few years, the modern technology of communication and presentations has found a way into learning/ teaching.[3,4] Even Medical Education Units overseeing higher learning have modified educational technology from chalk and board to the use of computers.[5]

Due to the ensuing pandemic, schools, and colleges were shut for an unpredicted duration, due to which, it became necessary to resort to electronic media to complete the syllabi and courses of schools and colleges. Thus, suddenly, academia was faced with the overwhelming need for e-learning/ teaching.[2] Many of them started experimenting with various online modes and platforms such as Zoom, Webex, Microsoft teams, Google, and other media.[4,6]

Unprepared or at least ill-prepared, they had to switch over to using ways and means of e-learning, using computers, laptops, cell phones, net connectivity, and various software and hardware. This entailed additional expenses and a need for technological support ranging from a power supply and backup to a multi-user seamless synchronised communication system;[3,4,6] all to be accommodated in homes which may be overcrowded or not designed for such activities. Since this was the first pandemic of this kind in the past century, not much is known about the issues faced by students and families in using online mode and appliances for e-learning.[7,8] Therefore, this study was conducted to know the perceptions of students and teachers towards e-learning.

Methodology

This was a cross-sectional Google Form-based online survey conducted over a period of 1 month (6/10/2020 to 8/11/2020). Ethics committee approval was obtained from the Manav Health Foundation - Independent Ethics Committee, Reg. Office: A-1, Anupam Nagar Soc. Behind Rajvee Towers, Near Tube Company, OP Road, Vadodara-390020; on 21/09/2020. The questionnaire included questions related to the perceptions of students and teachers regarding e-learning. It was pre-tested and later the form was created in 'Google Forms'. The pre-testing was conducted with a smaller group of people, representing both teachers and students (30 in number). The pilot study participants were not included in the main study. The questionnaire was administered after peer review, after making necessary changes (with post-translation and back translation) so that the essence of the questions was not lost. The language and sequence of questions were rectified for better understanding. It was formulated such that the questions for students and teachers were different. The participants were directed towards their respective set of questions after they selected the group. The questionnaire included 'multiple choice single answer' and 'multiple choice multiple answers' questions. The URL of the form circulated was available at https://forms.gle/6uofYYuJnTt5uBPr7.

The study populations were students (5th grade and above) and teachers across the state, central as well as ICSE boards from various cities, mainly from Gujarat. The Google Form, thus validated, was sent across various media such as WhatsApp groups as well as electronic mail (e-mails). Consent was implied and participation in the study was completely voluntary. The objectives of the study were stated clearly in the Google Form. The participants were ensured that their information would be kept anonymous. Responses were locked on 09/11/2020.

Data Entry and Analysis

The data, collected in Google format, was downloaded and transferred to Microsoft Excel 2016 (.csv format). Quantitative variables were described in median and IQR and qualitative variables were described using percentages and proportions. The difference in the proportions of responses among students and teachers was analysed using Chi-square. A p-value of 0.05 was considered statistically significant.

Results

Participant Profile

The survey participants included 753 students and 488 teachers. Majority (78.8%, 593/753) of the student respondents were from State Board while 13% were from Central Board and 8.2% were studying in Indian School Certificate Examinations (ISCE) board. More than half (54.5%, 413/753) of the student respondents were females. Nearly three-fourths (77.2%, 581/783) of the respondents were from Secondary or higher-secondary sections. On the contrary, 54% (262/488) of teachers who responded were teaching in Central Board schools. Nearly half (45.5%, 222/488) of the teachers taught in Secondary sections, while 42.6% (208/488) taught the primary classes.

Perception and Preference for E-Learning

On asking about their perception regarding e-learning, 82.6% (622/753) of students and 66.8% (326/488) of teachers were of the view that e-learning kept them safe from the threat of COVID-19 (OR 2.4; CI:1.8 - 3.1). More than half of the students (55.5%) and nearly half of the teachers (47.3%) preferred classroom teaching over e-learning (OR 1.4; CI: 1.1 - 1.7). A combination of both real-time and recorded teaching was preferred by 40.6% (136/335) of the students while real-time teaching was preferred by 44% (113/257) of the teachers. Forty-one percent of students used mobile phones for their lectures, while 39.8% (194/488) of teachers used laptops or desktops for their lectures (Table 1).

Almost half of both the student and teacher respondents dedicated 3-5 hours exclusively to e-learning, with less than 3 hours of screen time dedicated to other activities in 59.6% of the students and 41.8% of the teachers. Students were 2.3 times more prone to using screens for other activities than teachers (OR 2.3; CI: 1.8 - 2.9). Half of the students took a break of less than 15 minutes between two online sessions, while half (48.6%, 237/488) of the teachers took a 15-30 minutes break between online sessions (Table 1).

Table 1.Perception of E-Learning among Participating Students and Teachers

Variables	Students n (%)	Teachers n (%)	Odds Ratio (CI)	P-value
E-learning keeps us safe from the threat of COVID-19				< 0.0001
Yes	622 (82.6)	326 (66.8)	2.4 (1.8 - 3.1)	
No	131 (17.4)	162 (33.2)		
Preference of learning				0.006
Classroom learning	418 (55.5)	231 (47.3)	1.4 (1.1 - 1.7)	
E-learning	335 (44.5)	257 (52.7)		
E-learning tool preferred				<0.0001
Real-time (Live)	108 (32.2)	113 (44.0)	Ref	
Asynchronous (Recorded)	91 (27.2)	99 (38.5)	1.0 (0.7 - 1.5)	
Both	136 (40.6)	45 (17.5)	3.2 (2.1 - 4.9)	
The device used for E-learning				0.00005
Laptop/ desktop	288 (38.3)	194 (39.8)	Ref	
Mobile	309 (41.0)	148 (30.3)	1.4 (1.1 - 1.8)	
Tablet	156 (20.7)	146 (29.9)	1.4 (1.0 - 1.9)	
Screen time dedicated exclusively to e-learning (hours)				0.00001
< 3	136 (18.0)	177 (36.3)	2.0 (1.5 - 2.7)	
3-5	380 (50.5)	246 (50.4)	Ref	
> 5	237 (31.5)	65 (13.3)	2.4 (1.7 - 3.2)	
Screen time for other activities (hours)				0.0001
< 3	449 (59.6)	204 (41.8)	Ref	
3-5	210 (27.9)	219 (44.9)	2.3 (1.8 - 2.9)	
> 5	94 (12.5)	65 (13.3)	1.5 (1.1 - 2.2)	
Break between two online sessions (minutes)				0.00003
< 15	379 (50.3)	193 (39.5)	1. 4 (1.1 - 1.8)	
15-30	328 (43.6)	237 (48.6)	Ref	
> 30	46 (06.1)	58 (11.9)	1.7 (1.4 - 2.7)	
Total	753	488		

CI = Confidence Interval

Perceived Concerns and Advantages of E-Learning

Common concerns perceived by students were decreased concentration while learning (50.9%), no time to spend with friends or peers (50.1%), decreased interaction with teachers while studying (42.6%), and distraction due to other applications (41.6%). For the teachers, the operational cost of the gadgets (42.2%), inability to check students' progress (39.1%), affected interaction with students (34.6%), and learning the e-learning platforms were major concerns (33.2%) (Figure 1).

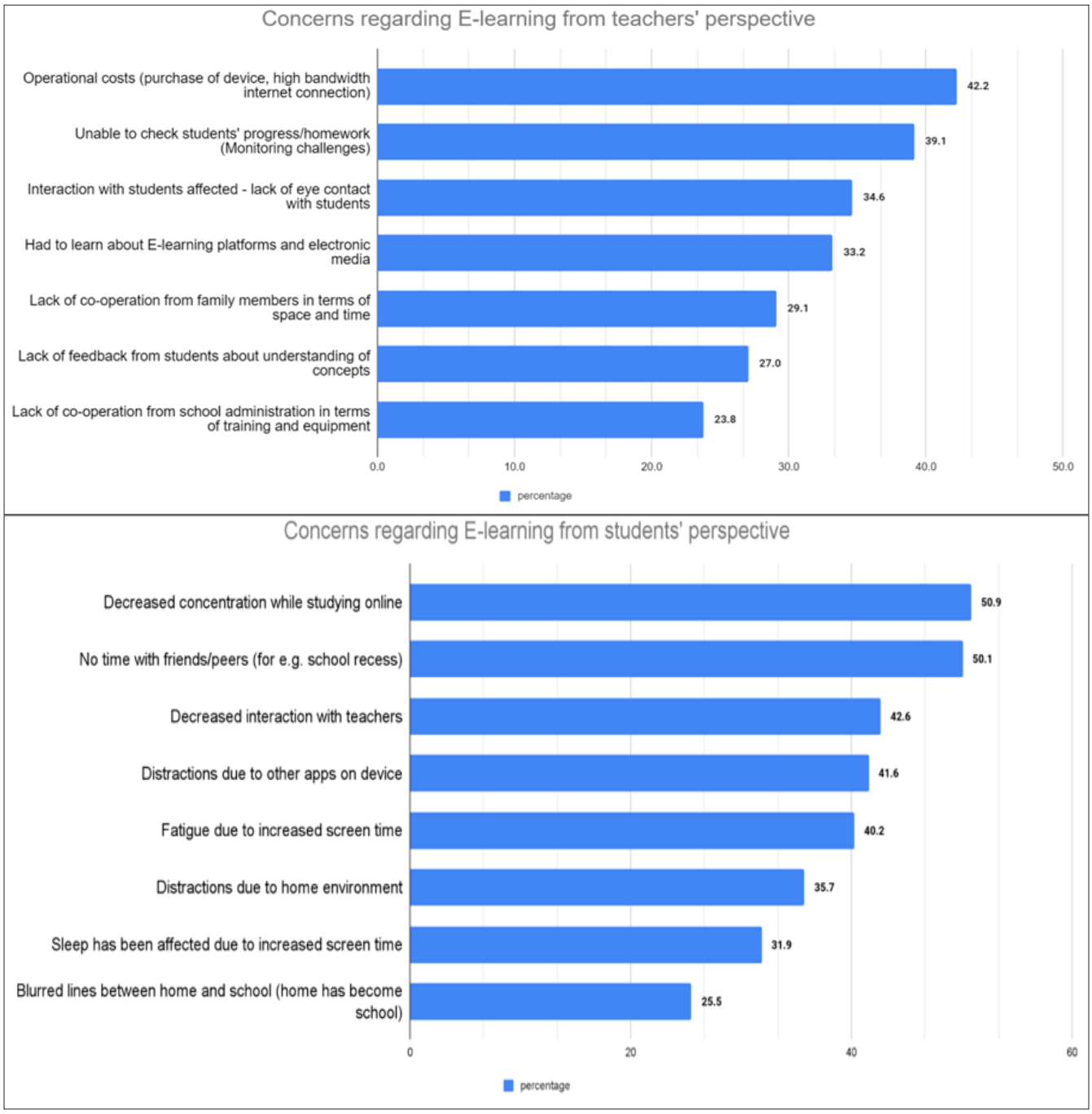

Figure 1.Concerns regarding E-Learning as Perceived by Students and Teachers

The advantages of e-learning from students' perspective were studying in the comfort of home (55.8%), saving travelling time from home to school (55.5%), and more personal time with friends and family (43.6%). The teachers also felt that e-learning saved travelling time (34.4%), gave more time with family (32.8%), decreased travel expenses (32.6%), increased opportunities of attending other webinars (31.1%), and made it possible to conduct teaching in the comfort of home (28.9%) (Figure 2).

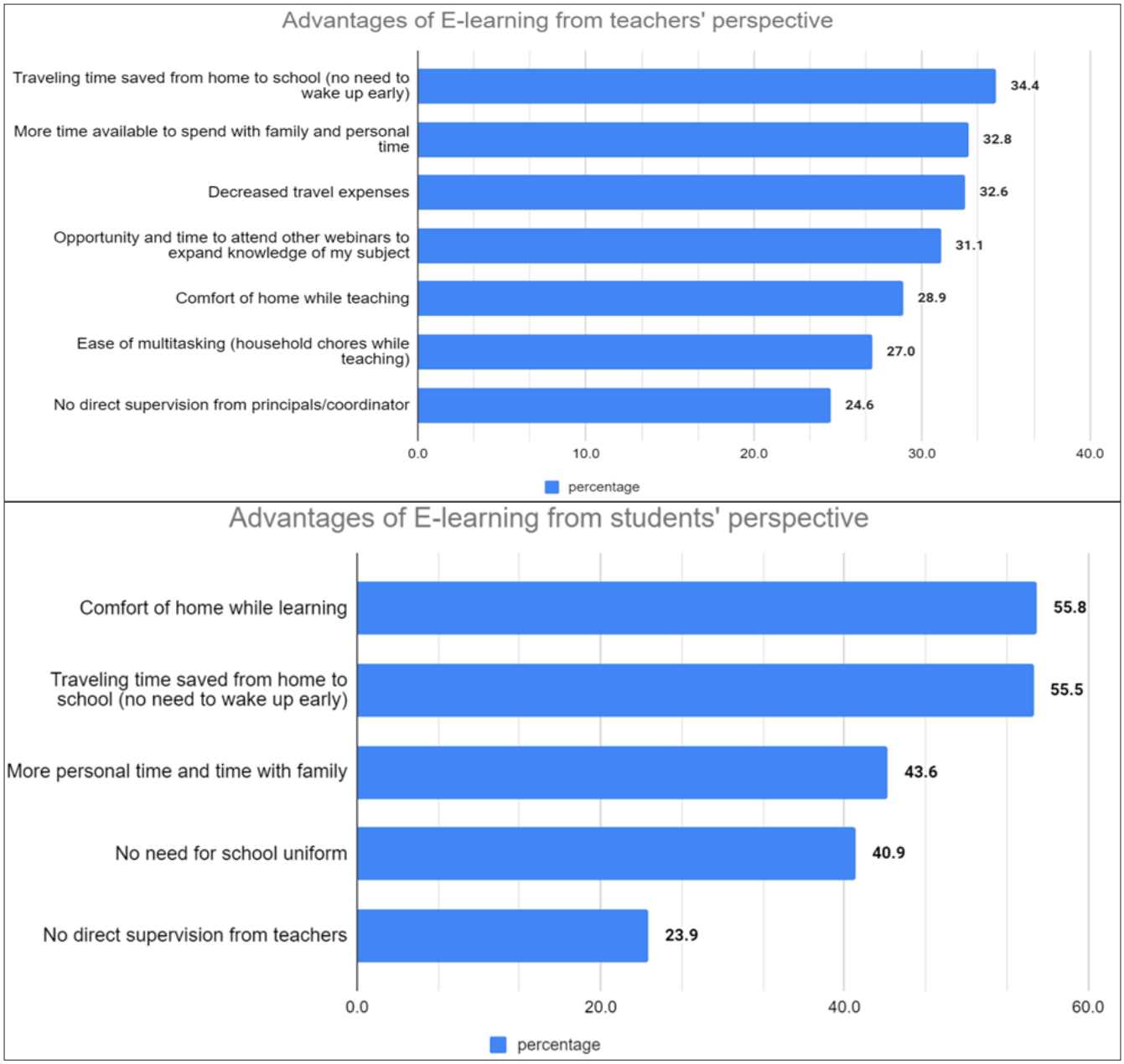

Figure 2.Advantages of E-Learning as Perceived by Students and Teachers

Discussion

During the COVID-19 pandemic, after an initial surge of panic and havoc as well as the closure of all routine activities including schools, shops and malls;[1,3] the government and administration started finding ways and means of getting routine life back on track. Thus began online teaching, with its own advantages and disadvantages.[8,11] To our knowledge, there have not been many studies, which have explored the perceptions of students and teachers regarding the online teaching platform.

The students in this study were majorly from the State Boards and were studying in secondary and higher secondary sections, while teachers were mainly from the Central Board and were teaching the primary and secondary sections. Secondary and higher secondary students are more likely to have mobiles and more access to Google Forms, hence the study received a major response from this group. The Central Board started their online sessions early as compared to the State Boards; hence more responses were from the Central Board teachers.

In the midst of the pandemic, when going out of home was considered a strict “no-no”, getting the option of schooling while staying at home was a welcome step. The same was also perceived by the majority of the students (more than 80%) and two-thirds of the teachers, who considered e-learning as a way to protect themselves from the threat of COVID-19. Other studies have also shown the preference

for e-learning to avoid exposure to the infection while going outside for educational purposes.[8,12,13]

Nearly 50% of the respondents felt that e-learning was better than classroom teaching and of these, 40% of students preferred a combination of real-time and recorded teaching. This is the beginning of a new era of online learning; not only for schools but also for other teaching platforms, which helps to identify newer methods of teaching-learning. Since this was an initial phase of the e-learning set-up, there were several different view points on its ease and acceptance, as is evident from various initial surveys and studies.[5,6,12,14] Further exploring qualitative studies in detail regarding the perceptions of teachers and students with regard to e-learning, is the way forward.

Almost half of both the student and teacher respondents dedicated 3-5 hours exclusively to e-learning, with less than 3 hours of screen time dedicated to other activities by two-thirds of the students and 41.8% of the teachers. Thus, one of the necessities is to have an organised time structure for teaching as well as giving enough time for outdoor activities. Students were 2.3 times more prone to using screens for other activities than teachers. Proper training and counselling in this regard are necessary. The study shows that most of the students and teachers did not take adequate off-screen breaks, which would lead to many ophthalmic and concentration issues.

E-learning, across all demographics, had a major advantage: it provided more time to spend with family, do other chores, and gain academic or extracurricular knowledge in the comfort of their own home. Students, as well as teachers, liked saving travel time and cost.[7,9,11,14] This led to relaxed sleep schedules for students as they did not have to wake up early. On the other hand, students experienced difficulty concentrating in online classes and had sleeping problems as well as fatigue due to increased screen time. Both groups agreed that this new method affected student-teacher interaction in a negative way. The teachers were majorly concerned with the operational cost of online learning. They experienced a significant learning curve for this new teaching method. These issues need more exploration in future studies. Cost-effective studies can be undertaken for the same.[7,15,16] More teachers than students preferred the lack of direct supervision from their superiors. Lack of feedback from students, and non-cooperation from their families and school administration were some other concerns of the teachers.

Conclusion

The overall perception of students and teachers toward e-learning has been positive. They mainly preferred e-learning because it provided protection from the threat of COVID-19. There were clear advantages for e-learning recognised by both groups (students and teachers). On the other hand, they were also worried about how it affected their health and the fact that it had some short comings when compared to the traditional schooling approach. With the pandemic now gone, many of its effects like e-learning are here to stay, also since screens are a ubiquitous presence in people's lives now. More such studies are required to understand their effect on health and society.

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Conflict of Interest: None

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