

Understanding Personal Learning Outcomes of Online Education in Covid-19 Pandemic on Secondary and Higher Education Learners

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ABSTRACT

Online learning access levels are not uniformly distributed throughout the country as the majority of the schools, institutes and universities in the country prefer physical classes instead of digital ones. The purpose of research was to develop a psychological understanding on online education during COVID-19 pandemic from secondary and higher education learners' perspective. The present qualitative study consisted of a total of 31 students (N=31; 14 males and 17 females). The learners belonged to the age group of 15 to 22 years studying at various government and private institutions. The research used semi-structured interviews for data collection and thematic network analysis as a tool for data interpretation to yield insights. After independent review and revision of themes, a total of 12 global themes emerged, six themes describing the positive impacts and other six explained aspirational needs on online education. As a result, the study tapped into understanding not only primary factors related to online learning such as preference for learning, teachers response, infrastructural needs, etc but it also tapped into secondary factor that might have impact on online education such as social relationship with family and friends, home setting, role of social media & relationship with peers.

Keywords: *Online Education, Pandemic, Learners, Thematic Network, Global Themes*

The world has experienced a number of major pandemics in the last 40 years, yet none had similar implications for the global economy as the Covid-19 pandemic. Covid-19 is contagious but not as contagious as measles and not as likely to kill an infected person as Ebola, but people can start shedding the virus several days in advance of symptoms (Rothe et al., 2020). As a result, asymptomatic people transmit Covid-19 before they know to self-isolate or take other measures like physical distancing in public or wearing mouth/nose coverings to prevent spread of the virus through speaking, coughing, or sneezing. With very limited testing in many countries, also due to the unavailability of tests, unknowingly asymptomatic transmission is thought to be substantive (Li et al., 2020).

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Covid-19 pandemic has resulted in total closure of schools in about 192 countries all over the world with 91.4% of the total number of enrolled learners in these countries temporarily forced out of school (UNESCO, 2020). It was reported that over 1.6 billion learners across the world are currently compelled to stay out of schools as social distancing is being enforced locally and regionally around the world in order to contain the spread of Coronavirus disease.

Long periods of learning would be lost for as long as the closures lasted. Kekić et al. (2016) reported that schools losing long periods of learning due to disease outbreak can result in both temporal and permanent damage to the educational system. The temporal damage includes disruption of curriculum which could take a long time to be recovered while the permanent damage includes the fact that some learners may never return to school even when the disease outbreak has ended. According to the UNESCO report, closure of schools and universities had affected more than 90% of the total world's student population during mid-April 2020 which is now reduced to nearly 67% during June 2020. Outbreak of COVID-19 had impacted more than 120 crores of students and youths across the planet. In India, more than 32 crores of students have been affected by the various restrictions and the nationwide lockdown for COVID-19. As per the UNESCO report of 2020, about 14 crores of primary and 13 crores of secondary students were affected which are two most affected levels in India.

School closures carry high social and economic costs for people across communities. Their impact however is particularly severe for the most vulnerable and marginalized boys and girls and their families. The resulting disruptions exacerbate already existing disparities within the education system but also in other aspects of their lives. These include:

- **Interrupted learning:** Schooling provides essential learning and when schools close, children and youth are deprived opportunities for growth and development. The disadvantages are disproportionate for under-privileged learners who tend to have fewer educational opportunities beyond school.
- **Poor nutrition:** Many children and youth rely on free or discounted meals provided at schools for food and healthy nutrition. When schools close, nutrition is compromised.
- **Confusion and stress for teachers:** When schools close, especially unexpectedly and for unknown durations, teachers are often unsure of their obligations and how to maintain connections with students to support learning. Transitions to distance learning platforms tend to be messy and frustrating, even in the best circumstances. In many contexts, school closures lead to furloughs or separations for teachers.
- **Parental under preparedness and home-schooling:** When schools close, parents are often asked to facilitate the learning of children at home and can struggle to perform this task. This is especially true for parents with limited education and resources.
- **Challenges in creating, maintaining, and improving distance learning:** Demand for distance learning skyrockets when schools close and often overwhelms existing portals to online education. Moving learning from classrooms to homes at scale and in a hurry presents enormous challenges, both human and technical.
- **Gaps in childcare:** In the absence of alternative options, working parents often leave children alone when schools close and this can lead to risky behaviours, including increased influence of peer pressure and substance abuse.

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- **Rise in dropout rates:** It is a challenge to ensure children and youth return and stay in school when schools reopen after closures. This is especially true of protracted closures and when economic shocks place pressure on children to work and generate income for financially distressed families.
- **Increased exposure to violence and exploitation:** When schools shut down, early marriages increase, more children are recruited into militias, sexual exploitation of girls and young women rises, teenage pregnancies become more common, and child labour grows.
- **Challenges measuring and validating learning:** Strategies to postpone, skip or administer examinations at a distance raise serious concerns about fairness, especially when access to learning becomes variable. Disruptions to assessments result in stress for students and their families and can trigger disengagement.

The lockdown has compelled many educational institutions to cancel their classes, examinations, internships etc and to choose the online modes. Initially, the educators and the students were confused and apprehensive and didn't understand how to cope up with the situation of this sudden crisis that compelled closure of educational activities. To avoid total curriculum disruption during the Covid-19 pandemic, the government had introduced technology-based pedagogy to ensure that learners have access to learning materials while staying at home. Blended learning is a technology-based teaching system that integrates a face-to-face teaching approach with an online learning system.

Three trends that could hint at future transformations:

Education nudged and pushed to change could lead to surprising innovations

The slow pace of change in academic institutions globally with centuries-old, lecture-based approaches to teaching, entrenched institutional biases, and outmoded classrooms. However, COVID-19 has become a catalyst for educational institutions worldwide to search for innovative solutions in a relatively short period of time. For example, to help slow the virus' spread students in Hong Kong started learning at home, in February, via interactive apps. Another example is of a Nigerian school, standard asynchronous online learning tools (such as reading material via Google Classroom), were augmented with synchronous face-to-face video instruction, to help pre-empt school closures. Similarly, students at one school in Lebanon began leveraging online learning, even for subjects such as physical education. Students would shoot and send over their own videos of athletic training and sports to their teachers as "homework," pushing students to learn new digital skills.

Public-private educational partnerships could grow:

Learning consortiums and coalitions are taking shape, with diverse stakeholders including governments, publishers, education professionals, technology providers, and telecom network operators coming together to utilize digital platforms as a temporary solution to the crisis. In emerging countries where education has predominantly been provided by the government, this could become a prevalent and consequential trend to future education. Hong Kong-based, readtogether.hk forum is a consortium of over 60 educational organizations, publishers, media, and entertainment industry professionals, providing more than 900 educational assets, including videos, book chapters, assessment tools, and counselling services for free.

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The problem of digital divide

Most schools in affected areas are finding stop-gap solutions to continue teaching but the quality of learning is heavily dependent on the level and quality of digital access. After all, only around 60% of the globe's population is online. While virtual classes on personal tablets may be the norm in Hong Kong, for example, many students in less developed economies rely on lessons and assignments sent via WhatsApp or email.

When classes transition online, these children lose out because of the cost of digital devices and data plans. Unless access costs decrease and quality of access increases in all countries, the gap in education quality, and thus socioeconomic equality will be further exacerbated. The digital divide could become more extreme if educational access is dictated by access to the latest technologies.

The rapid spread of COVID-19 has demonstrated the importance of building resilience to face various threats from pandemic disease to extremist violence to climate insecurity, and even rapid technological change. The pandemic is also an opportunity to remind ourselves of the skills students need in this unpredictable world such as informed decision making, creative problem solving, and adaptability. To ensure those skills remain a priority for all students, resilience must be built into our educational systems as well.

Objective

The objective of the present research paper was to develop a psychological understanding of online education during COVID-19 pandemic using secondary and higher education learners' perspective.

The interview questions were used to obtain information about the impact of Covid-19 pandemic on personal learning outcome of the learners:

- Explained the impact of the online learning during Covid-19 pandemic experienced by students related to their learning and teaching activities
- Explained the impact of the online learning during Covid-19 pandemic experienced by students related to secondary factors such as home setting, social media, relationship with others, etc

The paper has tapped both positive and aspirational or negative impacts on personal learning outcomes of students of online education during the pandemic. As a result of studying online education from a learner's perspective to provide holistic understanding education during the pandemic.

METHODOLOGY

Sample

The present qualitative study consisted of a total of 31 students (N=31; 14 males and 17 females) studying at various government and private institutions. The learners in the study were in age group from 15 years to 22 years. A total of 28 students belonged to nuclear families and 3 belonged to joint families. 87.1% of learners used laptops for attending classes whereas 12.9% used mobile phones. The sample size included 30 students studying in national and state universities and one student in international school.

Sampling techniques

Students from secondary and higher education institutes were studied using convenient sampling. It is a type of non-probability sampling where members of the target population

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that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Dornyei, 2007).

Tool

The data is collected with the help of semi structured interviews and analysed with the help of a thematic network analysis in order to understand broad areas for understanding the learners' perspective on online learning and gain insight into their personal learning outcomes along with relationships with family, friends, social media and infrastructure. The study also studied the learner's perspective on the role of student-teacher relationship and peers.

Procedure

The participants were selected through a convenient sampling method. The participants were briefed about the nature and the purpose of the study. Initial rapport was established and consent was taken. Parental consent was taken in case of school learners. The participants were asked a number of questions through a video conferencing via google meet. The participants were thanked for their time and participation. The data derived from the semi structured interview was analysed with the help of a thematic network where themes were generated with the help of codes driven from the data.

The transcribed data for the participant was analysed using thematic analysis method, following the 4 phases of thematic analysis. In phase 1, familiarization of the data was done by repetitive reading through the entire data set. Then, initial coding was conducted. In phase 2, the codes were further grouped together dissected into issues discussed and basic themes. In phase 3, the basic themes were grouped together and organizing themes and global themes were decided. In phase 4, the global themes were independently reviewed and quotes from the data were selected. The independent review and revision of themes involved re-examining the original data for relevant incidents of data for each potential theme; expanding, collapsing, or discarding of initial themes; generation of new themes; and re-discussion of themes. The findings were grouped and tabulated and the results have been discussed below.

RESULTS

Table 1 Compare the basic themes, organizing theme and global themes

BASIC THEMES	ORGANISING THEMES	GLOBAL THEMES
Communication Mutual cooperation Interdependence Familial attachment	Affection Closeness Togetherness	Healthy co-existence
Lack of conversation Disagreements Dissatisfaction Passiveness	Misunderstanding Troubled	Diverging interests
Self-regulation Safe option Confidence boost Participative Time management	Self-monitoring Steadfastness Morale building	Commitment and deliberation

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BASIC THEMES	ORGANISING THEMES	GLOBAL THEMES
Preference based work		
Unfavourable Uneasiness Detrimental Concerning	Disadvantageous Problematic	Non conducive
Educative Attitude formation Medium of connection Relaxing	Informational Intimate	Receptive and reassuring
Disturbing Uncertainty Unhealthy	Provocative Ambiguity	Consuming and inflaming
Inclusive work Recorded lectures Flexibility of home Accommodative Cost effective	Objectifying Engaging Safe-keeping	Systematizing and assuring
Unpleasant transition Poor adjustment Lack of personal contact Poor concentration Absence of classroom setting Limited resources Poor concept clarity Selective learning Screen exposure Unreliable schedules Power cuts	Poor alignment Distractive Withdrawn Abstract procedure	Lack of substance
Preparedness Operational Well-adjusted	Readiness Perceptiveness	Robust mechanism
Prone Poor facilities Mismanagement	Breakdown Ineffective	Disharmony
Curated virtual software Presentations Digital drawing Virtual meets Formative assessment	Stimulative Supportive and resourceful	Productive
Use of dishonest means Rigid schedule Exhaustive Stressful Lack of experiential learning Passive Poor coordination	Deceiving Incomprehensive Pressurising Inconvenient	Lack of foundation
Enhanced accessibility	Facilitating	

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BASIC THEMES	ORGANISING THEMES	GLOBAL THEMES
Assisting Interactive Engaging Understanding Constructive	Supportive Inspiring	Competence
Inflexible Non-acknowledging Unbothered Difficulty in reorientation	Non-compromising Dismissing and assertive	Non-progressive

DISCUSSION & INTERPRETATION

The purpose of the study was to develop a psychological understanding of learners/student personal learning experience of online education during the COVID-19 pandemic. For this purpose, students of secondary classes (both secondary and higher secondary) i.e., 9th to 12th grades and higher education learners i.e., university going students were chosen as a sample. Semi-structured interviews revealed the status of the current situation of online education and perspective on psychological understanding of the condition from learners perspective.

The study revealed how different learners, students of school and university/ college going students perceive online education and throws light on the role of online classes during the pandemic. The use of different grade students and institutes helped in understanding the outlook of learners' perspective on online education since some schools and universities were more welcoming to the change than others and this helped in noting different patterns of opinion of learners in developing a psychological understanding of learning during the pandemic.

Under all broad areas of social life, individual or personal life, role of social media, perspective on online classes, infrastructural preparedness, grading system used and preferences and teacher interaction and pedagogy, ***a total of 12 global themes were concluded, six global themes representing positive global themes and six themes representing negative or affirmative global themes.***

The first global theme was ***“healthy coexistence”***. This theme was built around perception of the social relations with family, relatives and friends during the pandemic. This theme provides a wholesome idea about the outlook for status of the social relationship that learners had and can help in understanding their environment at home.

From this particular global theme, it can be understood that the pandemic caused a lot of changes in the relationship of the students. It was difficult to adjust to the circumstances in the beginning but it was preferred by the students to all loved ones staying together and more importantly safe. Feeling of certainty and security was maintained in relationships at home. Interdependence and cooperativeness was secured between members of the family. It can be understood from responses of the interviewees ***“During the lockdown period my family was with me only so we had a great time together as we got a lot of time to spend”, “I grew closer to my family”***.

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Strengthening of existing bonds and participation in home activities are significant learning from this theme. It presents a panoramic view of the relationship of the learner with others during the pandemic. It was noted that that use of technology was only while shifting to online modalities but families used online platforms for screening such as Netflix, amazon prime to spend time than traditional ways of talking or playing games. Further, relationships with close friends and neighbours were also strengthened.

Social support not only provides material support to make up for individuals in coping with stress but also improves their sense of meaning and sense of purpose. According to the theory of social connectedness, social connectivity represented by “keeping close relationship with society” can meet the individuals’ belonging needs, and can provide support for the individuals’ goal-oriented behaviour, thus promoting the generation of hope. Social support is transpiring from multiple sources (parents, teachers, close friends, classmates, and school) and consisting of multiple types (emotional, informational, appraisal, and instrumental), which serve to improve a student’s adjustment and outcomes (Malecki & Demaray, 2002).

The next globe theme corresponding to social relationships for negative or appraisal relationships that emerged was “*diverging interest*”. This particular theme encompasses all the relevant issues that are hurdles or problematic for maintaining relationships with others. This theme focused on concerns about health of family members, about oneself, changes in pandemic with family members, relationship with neighbours and friends. Further, the changes in ways of communicating and interaction was understood from this theme. The theme as it reflects in the name talks about diverging interest as the main bone of contention in maintaining relationships. It was understood that the learners at home had different interest areas where they wanted to develop relationships than that of parents. For example, the students wanted to go out and they were struggling to maintain stimulation at home whereas parents were having their focus on home chores rather than focusing on interactive conversation.

As one of the respondents said, “*We were at home for at least 6 months without getting out so our children had mood swings and most of the time we were irritated*”. Moreover, there were changes in individual self in terms of ways of interaction. As opposed to pre lockdown and pandemic situations, there were marked changes that reflected difficulty in communicating with others. This also led to psychological strain or negative effect on mental health of learners. This can be understood from some of the responses such as “*Honestly it has made me shy and anxious, I don’t feel like going out of my comfort zone and meeting new people, I like being on my own, spending time with myself*”, “*I’ve become extremely withdrawn socially. Never felt like texting or calling the people who used to be my friends*”.

The closure of schools has necessitated childcare at home, which inevitably had increased parents’ burden of childcare. Particularly, in a two-income household, a problem arises regarding who should care for the child at home. Married mother whose child delayed school entry increases labour supply for married women (Barua, 2014).

Moreover, the effects of physical distancing measures and movement restrictions on students’ mental health represent another cause for concern. Children today face anxiety about the negative impact of the pandemic on their lives and their communities, and

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uncertainty regarding the future such as for how long today's extraordinary circumstances will endure and how the pandemic will ultimately be resolved.

Social support and its relation to outcomes has conceptualized social support as a dynamic process, rather than a static state (Cornwell, 2003). DuBois et al. (2002) found that over a 2-year period, higher rates of growth for social support were associated with reduced levels of emotional and behaviour problems in a sample of fifth through eighth graders. Given the sudden onset and impact of the pandemic, scientific data are not available to fully understand the nature of the resulting psychological distress, but existing research suggests anxiety, depression, and worsening stress are common reactions (Rajkumar, 2020).

As individuals have become accustomed to staying at home for safety, beginning to reintegrate into society is nerve-wracking for many; psychologists have started to refer to these fears as "re-entry anxiety" (Dusharme, 2020). Moreover, the Centres for Disease Control and Prevention warned that the second wave of COVID-19 is likely to be far more devastating than the first (Sun, 2020).

The next emergent global theme was "**commitment and deliberation**" as a response to the individual experience to staying at home. This theme helps in understanding the students view on how it personally helps the students grow and focus on themselves when they are given exclusive and dedicated time to themselves at home without having to visit universities and schedule their day.

This particular theme explored the positive psychological impacts of the pandemic on the students. It entails confidence, dedication and self-regulation regarding the present and the future for working towards individual goals. This theme reflected the perception of students regarding their assigned work in courses. It helped in understanding that the students understood that it was a safer option for them to stay at home than the need to go out. Further, it was reflected that students found themselves relatively at a better position in terms of studies since they could reorient their focus on subjects and courses of interest and work on their skills.

Response of one learner from first year of college "*My study went really well during the time of the pandemic, because it saved the time of going to college. I used to do the classes according to my learning needs*". Another learner added "*For the first time, I was able to manage my studies on my own. I studied in the way I wanted to, which was not tiring and frustrating like our regular college days. Today, I'm placed in both Infosys and TCS. I'm grateful that because of covid-19, I was able to manage my life according to me, without being bound by college and attendance rules*". School students likewise reported confidence in their preparedness to lead instruction, and to support teachers in class.

Further, it was also highlighted that learners were curious and wished to explore new areas of interest as noted by one learner "*It has led people to learn new things*". It can be interpreted that one of personal motivations was curiosity. Students retained their enthusiasm to learn new things, overcome trouble, and succeed during a tough situation. They were curious to explore technology and learn new things. As young people adapt to new experiences, it is challenging; overcoming adversities and keeping things going is an achievement. Students' learning pattern showcased to be reproduction-directed learning.

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They were studying because they wanted good grades, so the assignments were important. It was understood their commitment to carry out assignments came from themselves.

In a study by Rahiem (2021) it was shown that religious commitment was also an important factor that could motivate learners to do well for their education. The students were motivated by their religious devotion. They believed that learning was a Muslim responsibility, and they received God's reward for learning. This perception is probably uncommon in other cultures, but this is how the students in this study looked at worship and religion and how studying is viewed as worship. Since it is worship, learning then becomes a duty.

The next global theme that dominated the individual response to the pandemic and online education was *“non-conductive”*. This theme was concerned with building resilience and demotivating conditions at home for engaging in productivity.

There were underlying themes that examined the perspective of learners in pandemic towards studying, assignments, class work and home environment. It was understood that learners found themselves worrying about health and uncertainty of the present and future situation. Moreover, students both college going and school going found it difficult to interact with their peers online hence made it difficult for them to form a rapport. Further, the learners also had difficulty maintaining contact or following a routine. They found themselves withdrawn socially and felt feelings of loneliness and uneasiness. The conditions were unfavourable for learners collectively.

In another study by Rourke et. al (2001) revealed that social presence is a fundamental presence that determines the quality of online learning, the others are teaching presence and cognitive presence. Social presence is the ability of students to interpret themselves socially and effectively into a community. Many students have also had to cope with the sense of isolation and loneliness that accompanies adherence to guidelines to engage in physical isolation or social distancing. Stress and anxiety are also elicited by circumstances that have resulted in complete disruptions of daily routines.

Some of the students' responses noted *“I cannot talk in the same way I used to”* , *“Led to a sense of loneliness”*. Situations of prolonged uncertainty are bound to result in elevated worry and anxiety (Flett, Endler, & Fairlie, 1999). Students also have a series of unique challenges that are specific to them. Students must try to maintain their concentration on learning despite it being difficult to do so. The learning and achievements of students are typically underscored by their goals and goal orientations, yet it is not easy to maintain a focus on achievement goals when life issues have become predominant.

Another significant challenge for students is that because they must now engage in online distance learning, the daily routines of student life have now been entirely altered. The anxious student who tries to soothe herself or himself through affiliation with peers now has limited opportunities to do so. It must also be acknowledged that the uncontrollable and uncertain situation that is now being faced will be entirely at odds with the need for autonomy and self-determination that is typically at the core of motivated goal striving (Deci & Ryan, 2012).

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Next theme for understanding the role of social media was ***“Receptive and reassuring”***. This theme revolves around the important role social media plays in the life of the learner in terms of dealing with nuances of the pandemic and coordinating with online learning. The understanding of the theme comes mainly from social media as a platform playing a dominant role for being a source of awareness, attitude formation, medium of connection and a leisure activity.

Social and mass media has the ability to convey a sense of unity by reaching a large number of audience/users. Social media may also provide grounds for misinformation and discrimination. People utilized the flexibility and pervasiveness of social media technologies to increase the public's adherence to the safety measures suggested by global health organizations to combat the spread of COVID-19.

Social media can play positive role during the COVID-19 pandemic by promoting effective strategies for helping individuals in dealing with social and physical distancing and reducing stigma, prejudice, discrimination, and inequalities. As noted by some of the responses of some of the learners, *“I feel social media has shaped a lot of opinions and has given information we would've been oblivious to otherwise”*, *“Very important for connecting with people”*, *“Source of information and relaxation”*.

Social media platforms were applied to educate people to take public health measures. During the pandemic, social media has become one of the most important channels to disseminate information with an absolute superiority in speed, reach, and penetration (Merchant & Lurie, 2020). Compared with their use of traditional media, young adults are more likely to use social media sources to attend to disaster-related coverage (Jones, Garfin, Holman, & Silver, 2016). Meanwhile, social media has been used to create and share information with personal interpretations, which may lead to the transmission of rumours, conspiracies, or misinformation (Wang, McKee, Torbica, & Stuckler, 2019).

The next theme under social media was **consuming and inflaming**. This theme revolves around the feelings of disturbance, uncertainty and unhealthy pattern of self-consciousness that stems from social media. This theme helps in understanding the perception of the learners on how social media has played a negative role in their life. It was thought to be a source of self-doubt, comparison and negativity.

In the advent of the COVID-19 pandemic, people are using social media more than usual because they rely on news sources from online sources to seek health information for themselves and their loved ones. Social media platforms' usage has become a welcome relief in the health disaster and global crisis during the ongoing COVID-19 pandemic. Analysing social media usage in the context of global health catastrophes like the COVID-19 pandemic should help disclose the global mental health toll.

Students noted *“It's not a safe place anymore, it does make you insecure”*. Other responses were *“Toxic”*, *“Negative”*, *“Negative role as it has made me feel very bad about many things”*, *“It has become a primary source of news these days, and all the negativity can be harmful for a person”*. Moreover, one of the students also responded that *“Minimal time on social media because of a lot of work and assignments”*. This showcases the amount of pressure some learners had on them for completing their work.

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The World Health Organization took a pioneer role by enhancing its communication efforts to properly address rapidly spreading rumours and questions from the public obtained in social media channels, also using search optimization strategies within the social media platforms to guide anyone asking questions about the pandemic by redirecting them to reliable sources. Similarly, social media platforms themselves include alerts or 'warnings' with links to reliable sources and fact checkers when searching for information on COVID-19 and other health-related issues.

Bhargava and Rani (2015) showcased in their study that the influence of social websites can be good on students, if there is a closer look on the real impact of social media. They had further opined that, several social media websites are continuously distracting adolescent students from their educational career. Through the study researchers had observed that adolescent students are emphasizing on social media sites which is a complete waste of time. As was also noted in an interview of one of the students in this research *“It is a distraction in my case but like whenever I am bored”*.

The next global theme was **“Systematizing and assuring”** for understanding the perspective of students of online learning and classes. This theme helps in recognising the sub-themes of objective making i.e. how routine and scheduling due to online classes helped students. Further, the learners found the classes engaging and viewed online classes as a safe alternative to continue education.

Students both school going and college going found themselves being more confident while responding and interacting in online classes as compared to regular classes. The fear of judgement and avoidance of face to face communication reduced stage fright phenomenon and performance anxiety and helped students in providing a boost to their confidence.

Some of the responses of college going students, *“Since, I'm a student of 4th year, so I can totally manage my studies even if no one is teaching me in offline classes or in any online classes “It's a good way to keep education going”, “It's great if you are preparing for competitive exams”, “The visual aspect, which was less during the traditional classes. It helps to visualise the concepts being taught”, “We can study from the comfort of our house”*.

According to Rubio (2007) due to low self-confidence many psychological barriers such as feeling insecure, fearfulness, having anxiety, and feeling apart from the society are possible barriers that may arise for a student during the class which can adversely affect the performance of an individual. They can consequently be leading an individual being distracted from the learning process.

Further, some learners recognised the importance of self-monitoring and were able to manage their time and routine in an efficient manner while attending online classes as compared to regular lectures. They also acknowledged the availability of abundant resources online which can help them access and understand at the comfort of home. The learners were conscious of the fact that the future of today is online and there was an understanding that they will utilise and get accustomed to the fruits to the technology once they are on board of streaming classes online as an alternative method of accessing education in India. Due to the coronavirus pandemic, the integration of technology into the educational system

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was the most effective and efficient way of providing distance education in order to do away with the spread of the virus (Kucharski et al., 2020).

On the flip side, in order to understand the negative perception of students of online learning and online classes, the global theme emerged was “**Lack of substance**”. This theme revolves around abstract procedures used for teaching, lack of practical or field experience, withdrawing due to lack of face to face interaction, especially for students of a new batch where the batchmates were not known.

Moreover, it was also felt by learners that online classes were distractive since they found it hard to maintain their focus and concentration on content that was taught in class for a prolonged period. Further, absence of classroom setting and poor alignment of classes increased worries in students. Uncertain schedule and extension of class than the scheduled created a problem in maintaining focus. The students also found the experience of online classes unpleasant as there was no face to face communication. Most of the lectures and classes took place without cameras which reduced touch with the peers and the teachers. Some students had limited access to resources in terms of availability of laptop or digital devices along with power cuts that further created a challenge of attending the classes. Furthermore, inadequate writing practice and lack of clarity of concepts especially for subjects such as mathematics, physics, etc that led to a difficult transition for students.

Some of the responses of learners from school “*We don't get to understand the concept there. Attention span has reduced significantly*”, “*Lack of studying environment, too relaxed and lack of peer to peer learning*”, “*Considering I'm in a board class I'm highly worried about my performance in the board examinations as I haven't properly studied from examination perspective the entire year*”. Some of the responses of learners from college “*There is no interaction, and personally for me, that's pretty important*”, “*Not everyone can be educated digitally because of the difference in resources*”, “*It has been tough due to the lack of physical presence of peers and professors*”, “*Uncertain schedules*”, “*We cannot understand how teacher is teaching*”, “*We could not do a lot of team activities effectively, difficult to establish rapport*”.

As it was established from previous global them that there are multiple advantages that can be attributed to online communication tools. They offer opportunities to structure communication and support collecting and sharing knowledge and encourage quiet or introverted students to participate in discourse (Liaw, Chen, & Huang, 2008; Wen & Tsai, 2008). However, it is also true that there are concerns with how obstacles in online communication such as restrictions in the exchange of socio-emotional information and in social presence can be overcome. There was an advantage of face-to-face learning and its potential in providing socio-emotional information (Harrington & Loffredo, 2010; Johnson et al., 2008; Westbrook, 2006).

The schedule is an essential component of school or college success, the schedule design ensures that courses are in a format that supports and promotes learning (Campbell et al., 2009; Rettig & Canady, 2013), as there was a relationship between class schedules and students' academic achievement (Sisson & Sisson, 2015). The time and frequency of instruction can affect student learning and there is an inseparable link between instruction time and class schedules (Bonner, 2012); they are mutually dependent one on the other (Jacobs, 2010).

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Online courses are often associated with extensive use of technology. Some scholars believe that the format of a course challenges or influences student success (Dunbar, 2004; Jagger et.al, 2013) primarily concerned with identifying the best tools to use for successful learning in online courses (Dunbar, 2004). They argued that student technical and non-academic skills are behind their success in online courses.

Grundmann (2010) argued that lack of laboratory and hands-on experience within the format of online courses is viewed as a major disadvantage, specifically for students in the field of science. However, he also discovered the format of instruction (online or traditional) does not affect the successful achievement of learning outcomes for science related lessons. Further, it was also found from responses of the learners that the students found themselves demotivated and laid-back as they had to make less efforts to attend online classes. Moreover, they were demotivated to get ready to sit in front of a screen as expressed by learners. It was also discovered that students used deceiving methods and it encouraged cheating in order to get good grades.

The next global thing that emerged was “**robust mechanism**” which encompassed the infrastructural readiness and perspective of learners towards the facilities and initiatives taken by their respective institutions in order to adjust and accommodate to the online learning modality. Perspectives that generate around this theme are readiness i.e. well preparedness of the institutions and perceptiveness i.e. the ability to cope up with the challenge of the pandemic and steadfastly manage the crisis.

The population of the school learners or secondary educators included The Airforce Public School, G.D. Goenka East, G.D. Goenka Kakardooma, Wisdom High International School, Army Public School Shankar Vihar, HPT Arts college, Nashik whereas the learners from higher education included University of Delhi (Ram Lal Anand College, Motilal College, GTB khalsa College, Shaheed Sukhdev College of Business Studies, Shri Ram College of Commerce, Atma Ram Sanatan Dharma), National Institute of Fashion Technology (NIFT), Delhi Technological University (DTU), The Manipal College of Dental Sciences Manipal, Institute of Hotel Management, Amity University, Haryana, Motilal Nehru Institute of Research and Business Administration, United Institute of Technology, Prayagraj, U. P. and Indiana State University (abroad).

Some of the responses from learners for understanding their views were, “*Well prepared in terms of having teachers with proper knowledge and tools for organising classes online*”, “*Our school started the online classes quite early and made sure that every kid could attend them*”, “*Our school was quite prepared for it*”. Further college learners responded, “*I think they did a good job. They gave us all a personal email ID to login with and time tables were also flexible*”, “*Steps were taken to have a smooth functioning by the university, like giving college domain mail IDs to everyone etc*”. “*A whole new website was designed that made everything much more accessible*”

Both external and internal factors will influence the readiness of online education delivery. External factors are the IT-infrastructure around the universities and in the country it operates. Other external factors are the support available from the government and different organisations and internet usage for the population. Characteristics of the student as customers can also be looked at as an external factor and this has proven to be a significant factor when assessing the effectiveness of online education (Paulsen, 2002).

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An important internal factor when it comes to online education is the characteristics of the teacher. The teachers or professor's attitude towards technology can be an important factor for the instructor. The attitude of the instructor will influence the attitude of students and their ability to learn. The internal infrastructure is also something that will affect the effectiveness of online distance education. It is impossible to ignore the new way of delivering education (electronically).

The next global theme that emerged for understanding perception of infrastructural readiness was **"disharmony"**. This theme described breakdown i.e. suspending of classes for certain months and ineffectiveness on parts of management in failure to provide information regarding schedule in time.

Frehywot et al. (2021) cited inadequate infrastructure, lack of face-to-face interaction, inadequate technical support staff, financial costs of maintaining the platform, and time commitment required from teachers as major challenges for online learning.

Power interruptions, weak infrastructure, and internet costs restricted the students' access to online content. Despite this perception, a striking finding was that students did not perceive technological limitations to be most important. Mostly students had experienced challenges relating to their personal study habits, situation at home, and interaction with educators. Some of the responses of the learners were *"Since the pandemic came as a surprise, my institution had put a pause on the classes for a week but then my school started conducting regular online classes"*, *"It was a surprise for them as well"*, *"Not prepared at all. But they managed to cope"*.

One of the students from HPT college, Nashik suggested that *"We didn't study for 7 months straight"*. Students experienced significant educational disruptions as the pandemic interfered with their academic functioning (Charles et al., 2020). Since the closure of tertiary-level educational institutions suspended face-to-face teaching-learning sessions, it interrupted the regular flow of academic programs (Jacob et al., 2020). The delay in reopening educational institutions can negatively affect their mental state and academic growth (Chandasiri, 2020).

In India, whether in modern metropolitans, developing towns or at a rural level, the quality of education is significantly different in government schools and private schools. Striking differentiators like classroom infrastructure, quality of teachers, extra-curricular programmes and more can easily be observed even today. The common level playing field is a digital screen with internet connectivity. Through a temporary one, even with the current shift to virtual education, government schools are struggling more than their private peers.

The next global theme **"productive and competent"** for understanding stimulants in terms of understanding teacher interaction in classes or lectures and supportive and resourceful for understanding perspective on how teachers helped in being empathetic towards students normalising the situation and coming on board with transition from regular to online classes.

Different grading practices were used relative to regular grading practices. There was use of multiple-choice quiz and frequent formative assessments took place instead of quarterly summative assessments. Aesthetic use of presentations, digital drawing and videos were

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used in classes in order to teach concepts and make classes more interactive. One of the popular techniques used by teachers was to use previous year question papers as a method to motivate students (whether it was school or universities going to learners) to make sure they continue attending classes.

Some of the responses on learners for understanding the kind of pedagogy or method teachers used to make lectures and classes interactive *“They made very interesting and effective presentations and also conducted interactive doubt clearing sessions”*, *“They took quizzes in form of fun online games”*, *“They used several interactive techniques such as ppt and other presentation activities in order to make class lively and cheerful”*, *“They tried to conduct a lot of activities, which was fun, also online webinars.”* Use of google meet, Microsoft teams and zoom for classes and lectures along with WhatsApp was used for medium of communication between parents, students and educators. In terms of teacher interaction with students other than the online classroom, the learners responded *“We had more frequent group discussions and the WhatsApp groups were very active”*, *“They used to answer them through the class group or in class”*, *“They were very understanding and helpful when it came to solving our problems”*.

Research by Kapasia et al. (2020) on the COVID-19 lockdown in India and its effect on students of higher education shows that around 86% of the students use their smartphones (mostly Android) for attending the online classes, while a mere 14% use their laptops. Since online learning primarily involves watching multimedia contents either during the live tutoring sessions, or when preloaded video contents are uploaded by the teachers to the learning platform, the type of device used for this purpose may affect the usability and consequently the student’s perception of the delivery platform. In the context of delivery of multimedia content there is enough evidence that the end user experience (often described in terms of the QoE – Quality of Experience) depends on the screen size (Pal and Vanijja, 2017), and hence can vary between smartphones and laptops.

Teachers were also supportive. The learners implied that their educators were available to take extra classes in case of doubts and would accommodate timings and class work according to the needs of the students. The professors were also keen on recording lectures so as to help students to revisit the lectures to understand concepts more comprehensively. Further, for practical or field based subjects and majors, the practical were cut short to understanding the subject and sample collection was avoided in order to avoid transmission and stress on students to collect a specified sample size.

Some of the responses from school learners *“They had more doubt classes and they were available when needed”*, *“They told us to reach out to them anytime of the day for queries”*, *“Teachers were able to urge each child to speak and if not then they would message you where you felt more comfortable discussing”*, *“They were extra patient”*, *“Perfectly, solving every problem and explaining everything”*, *“Frequent interactions and breaks”*.

Chakraborty (2014) revealed several factors that can create exciting learning experiences for online learners. The main factors are as follows: creating and maintaining a positive learning environment, building learning communities, providing consistent feedback in a timely manner, and using the right technology to deliver the right content. This was also confirmed by students in the present study.

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Adjustment is needed to teach curriculum or the learning and teaching method. Developing the strategies needed to teach and learn online successfully requires an understanding of learning styles and how they can be handled well in the online environment (Lewis, 2015). Successful teachers promote and facilitate students' active communication, interaction, collaboration, and engagement throughout the online course (Palloff & Pratt, 2011). These educators possess personal traits such as being motivated, supportive, visible, organized, analytical, respectful, approachable, active, responsive, flexible, open, honest, compassionate, and able to lead by example (Keengwe et. al, 2014).

Hence, the theme provides that teaching presence had a positive impact on learners' constructive and interactive engagement behaviours. These results demonstrated the value and the importance of online facilitators' role for design, organization, facilitation, and direct instruction (i.e., teaching presence) which is consistent with research studies (e.g., Hung & Chou, 2015; Vaughan & Garrison, 2005).

The next global theme that emerged was **“Lack of foundation and non-progressive”** for understanding perspectives on negative or aspirational teacher-student relationships that had emerged from some responses of learners. From the study it was found that school children had better relationships with their teachers and felt their teachers were more supportive and understanding as compared to college going students. Perhaps because of the understanding that as children enter formal school settings, relationships with teachers provide the foundation for successful adjustment to the social and academic environment.

Strong teacher-student relationships may be one of the most important environmental factors in changing a child's educational path (Baker, 2006). Assessing the effect of advanced degrees on teaching in higher education is a much more difficult scientific endeavour. Since the attainment of an advanced degree is a prerequisite to becoming a higher education faculty (at most institutions), an adequate control group is difficult to obtain. However, since the attainment of advanced degrees is often the only requirement to become a higher education faculty member, and since research shows that advanced degrees in a science content area have no effect on teaching quality at the primary and secondary level, this minimal requirement may be of concern at the college/university level (Darling-Hammond, 1999).

Postareff et al. (2008) compared the amount of teacher experience (in years) of higher education faculty with approaches to learning and found no significant shifts from teacher-centered to student-centered teaching practices based on experience. Results showed that efficacy does significantly improve with experience. This theme revolved around the emergent perspectives of learners non-comprising routines and inflexible schedule production coupled with assertiveness which made orientation to online learning difficult for some students. Students felt unacknowledged and felt classes were pressing. Moreover, the students in their inability to connect with the content taught in class found themselves becoming passive and unmotivated. Inattentive peers also influenced students' motivation and attention in class.

Further, the students found that the teachers were indifferent to the pandemic conditions since in few schools and universities, the educators increased the workload by assigning more assignments to be done. Learners felt that online learning was more of a “deadline making system” where they were burdened with work in order to meet specific deadlines.

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This increased stress in some students whereas in others it opened the gateway for using dishonest means such as cheating in order to score good grades. Learners also disliked the new grading system as it did not help in learning concepts and only led to learning specific topics. New grading system with reduced syllabus also removed writing practice for students which later became problematic for children accessing blended learning once lockdown was lifted (students taking boards examinations-10th and 12th graders).

Some of the responses on students based on teacher interaction in the classroom used for understanding the global theme were *“Communication was nil”, “I would like to simply laugh on this question.”, “The teacher didn’t provide any external help apart from what college had to offer and college services were not up to the mark”. “It was difficult to even get a reply from a teacher on WhatsApp”.*

Naidu (2013) argued that while carefully designed learning goals are important in all educational settings, they may be particularly critical in distance education, given that students are often studying independently and without a great deal of opportunity to interact with their peers and tutors. The relationship between clearly-specified learning goals and quality is more ambiguous. A course with overly rigid goals and assessments is thought to create more distance between the teacher and learner, and thus to require learners to exercise more autonomy, which could be challenging for some students (Moore, 2013).

In another study by Balaji & Chakrabarti (2010) asked students to rate their course’s online discussion forum in terms of the perceived quality, interactivity, and participative nature of the discussion. Perceived quality of discussion was positively related to students’ participation and interaction, as well as to self-perceived learning.

It can be concluded from the global themes regarding grades and student-teacher interaction that high-interaction instructors posted announcements on a regular basis to remind students about requirements for assignments, coming deadlines, posted documents, examination date sheet, and other logistic issues. In courses where the instructor made limited announcements, students were more likely to express dissatisfaction with the course. Students in high-interaction courses reported that their instructors responded to questions in a timely manner.

CONCLUSION

As can be understood from the above discussion, learners had experienced both positive and negative impacts of studying and learning in the “new environment” of learning online. The paper provides a systematic and comprehensive understanding for both higher education learners and secondary (both lower and higher) learners. It can be understood from the results of the study that although students were not keen for learning online and the transition to online medium was difficult for them as well as the faculties, however with time, learners preferred learning online. They were more considerate about health than the need of socialisation however, this need was more felt in school going students. College learners too were pro-online education however, they were less affected by health factors and more affected with building personal skills and self-regulation. Moreover, both females and males suggested similar responses in terms of understanding personal learning outcome, hence gender differences were not seen in case of studying the impact of COVID-19 and online education.

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There is a global recognition of the need for inclusive education policies during the pandemic. The results of this research study can add to the educational research available and expand the information of this study in the area of online education and school and university scheduling and the effects it has on student achievement. Thus, the pandemic has brought about an aspirational paradigm shift those modern teachers, professors, and student would do well to realize and embrace while learning the nuances of online learning mutually. Qualitative methods (such as the interview-based cases in this study or other types) are likely to yield insights more nuanced than, for instance, merely surveying a large number of blended or online learning instructors or learners.

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Conflict of Interest

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