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A Critical Analysis on the Psychological Impact of Online Education on Stakeholders in Tamil Nadu

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ABSTRACT

There has been a great technological revolution in education, especially in distance education. In this process online learning is playing a big role in recent times. Online learning has created a great impact on students, both physically and psychologically. According to the primary data collected through convenient sampling method from 205 respondents, the negative impacts and challenges in online learning have been brought to the fore. It has been made clear that offline learning cannot be replaced by online learning, and that the students don't prefer online learning, but they find them manageable. With the onset of COVID-19 pandemic in various countries, online learning was brought to many places around the world. However, we find that there is difficulty in coping up with the current trends by the stakeholders, and further, it is far from effective learning and overall development of students.

Keywords: *online education, online learning, distance education, COVID-19, psychological impact.*

I. INTRODUCTION

Technology has brought a revolution wherever it has stepped into. Technology has brought significant changes in education. From blackboard teaching to online learning, education has progressed very well. Education plays an eminent role in people's lives. Education has become diverse because of the advancements in teaching and technological development that has given easier techniques of teaching. One of the major issues that was raised in relation to education is distant learning courses and online education. Distant learning could be any form from Video Home System (VHS), DVDs, or online courses via the internet. When it is difficult to follow traditional education methods due to difficulty in scheduling or distances, distance education method tends to be more welcomed as distance education can be easier and more flexible in terms of time and place. As distance education grows, technology to support learning and teaching continues to transform too.

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Online education is an electronically supported learning that uses one or more technologies and relies on the internet to deliver instruction to students who are separated from the instructor and support regular and substantive student-teacher interaction and giving out study materials. It is a combination of the traditional classroom and the distance education experience. It is the latest expansion in distance education that started in the mid-1990s with the spread of the internet and the world wide web. Most of the institutions utilise a Learning Management System for managing online courses. The only way of online education in the earlier days was watching public classes of famous universities and tutorial videos of institutions. However, in the COVID-19 pandemic, online education has been mainly in the form of class-based teaching by teachers of one's own school, which is an extension of the original traditional learning.

Unlike the traditional method of learning, courses in online learning are web-based and circulated from a distance, using a range of synchronous (teaching and learning happening at same time) and asynchronous (teaching and learning happening at different times) computer technologies – and offered anywhere and anytime and hence, online learning is different from the traditional method by encouraging decentralised and collaborative learning environments.

Online education exists world-wide and is used for all levels of education. This learning method enables the individuals to earn credits, take examinations, or advance to the next stage of education over the Internet. It is of low cost and no need for specific places for learning. Different learning aids like flash cards and games can increase the learning experience of students and they can be done on the students' time without teacher's assistance. The three popular online education technologies include voice-centred technology (e.g., CD or MP3 recordings), video technology, (e.g., instructional videos, DVDs, and interactive video conferencing), and computer-centred technology delivered over the Internet or corporate intranet.

The COVID-19 pandemic has made a great impact on the academic world that consists of millions of enrolled students and active teachers who usually had regular classes in their institutions, and due to the pandemic, got stuck at their homes. The educational activities were badly affected due to the pandemic including learning disruption, limited access to learning facilities, job losses in the education sector, increase in students' debts, reduced funding for education, research constraints, and loss of learning interests among learners. To continue studying, online learning was introduced in many countries, including India. Even though online learning has several advantages, it has faced a good amount of criticism. The basic necessity for online learning, i.e., technological devices and the internet are unavailable to so many people. Though at the start of the pandemic internet and gizmos were not looked into by

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everyone, it became a determinant for studying in the pandemic. Students, teachers and parents have been greatly affected by the sudden change in the mode of learning though it had existed for some time. Students have greatly missed the school atmosphere and peer groups and learning online has created many other problems to be faced in the course of achieving education. The **aim** of the research is to study online education by looking into the psychological impacts of online learning on people and provide suggestions to make online learning better.

(A) Objective

- To explore the different perceptions on online education.
- To study the psychological impact of online education on the students.
- To provide suggestions to combat the negative effects of online education.

(B) Literature review

Al-Alawneh (2014) has examined the e-learning barriers as seen by faculty members of engineering colleges in three major Jordanian Universities - Yarmouk University, Jordan University of Science and Technology, and Al Balqa Applied University. The author has used primary data collected through a survey using 36-items and using four-point Likert scale from a sample of 176 faculty members who are involved in delivering online courses through web-based management tools. The author found a multivariate effect for the faculty members' perceptions in the relation to the country degree (Jordan versus Arab countries) and observed that all the three barriers' domains were high on the Likert rank and concluded that institutions of higher education should set a vision and a strategic plan to encourage faculty members to offer online courses and provide them with training and professional development to get along with technology.

Larreamendy-Joerns and Leinhardt (2006) have discussed promissory notes and concerns related to college-level online education as reflected in the educational literature. They argued that to appreciate the potential and shortcomings of online education, there is a need to trace the problems that bind between online education and distance education. They have used secondary data and reviewed the history of distance education through the lenses of three historical themes and mapped the current scenario of online education in terms of three educational visions which will inform the development of online initiatives. They emphasised the potential contributions of online education to democratisation and the advancement of the scholarship of teaching.

Izmirli and Izmirli (2015) have analysed the factors that influence in-service teachers to online education in the framework of the ARCS motivational model. They used a phenomenology

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model that was carried out with 52 pre-service teachers attending the department of Computer Education and Instructional Technologies at the Education Faculty of Çanakkale Onsekiz Mart University in Turkey and used primary data by an open-ended questionnaire within the framework of the ARCS motivational model. They used descriptive analysis and examined fewer than four themes and found that the most frequent factor motivating for online learning was 'relevance to individual differences' found under the theme of 'confidence' and the least frequent motivating one was 'flexibility' found under the theme of 'relevance'.

Gonen and Basaran (2021) have evaluated students' views on the use of SCORM (Sharable Content Object Reference Model) – compatible materials in physics teaching. They used primary data by a study carried out with 76 students attending Dicle College (DC), Diyarbakir Anatolian High School (DAHS) and Cumhuriyet Science High School (CSHS) located in the central town of the city Diyarbakir in southeast of Turkey in the academic year of 2008 to 2009. They directed 10 open – ended questions to 19 volunteering students to evaluate the views of the participating students about the learning approach used and about the web site designed. They found that the students were generally satisfied with the testing and instructional materials found on the web site developed but still faced problems like slowly-opening WBMs, an inadequate number of test forms including multiple-choice questions and insufficient duration of application. They concluded that considering the findings as a whole obtained in the study, it would be beneficial to use web-based educational applications in teaching physics in schools with better Internet infrastructure and opportunities.

Dhawan (2020) has analysed the importance of online learning and strengths, weaknesses, opportunities and challenges (SWOC) of e-learning modes in the COVID-19 crisis. The author used secondary data from various sources and used SWOC analysis and content analysis and followed descriptive research and concluded with a highlight on growth of education technology start-ups during the time of pandemic and natural disasters and included suggestions for academic institutions on how to deal with challenges associated with online learning.

Karthik and Brindha (2013) have analysed the efficiency of students who take online courses relative to the efficiency of students who are enrolled in offline courses. They defined the outcomes in terms of quantitative scores achieved by the student at the end of the course, the student's viewpoint of how much they learned in the course and the student's level of satisfaction with the course. They have concluded with the benefits of online education and the ways to promote the same.

Khan et al. (2021) have examined the students' perception towards e–learning during COVID-

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19 pandemic in India. They have used primary data by collecting responses from 184 university students of Delhi, India namely Delhi University, Jamia Millia Islamia (Central University) and Guru Gobind Singh Indraprastha University, through online questionnaires conducted during June–August 2020. They found that there was a positive perception towards e-learning among the students and thus acceptance of this new learning system showing the significance of e-learning in the time of COVID-19 crisis. They concluded that the findings of the study will facilitate educational institutions and policy makers to take this online-learning process to the next level in a better way.

Erdinc (2021) has discussed the general information about distance education and its operation and about online educational operations, research, development and delivery in Australia and analysed the international online education projects developed by Macquarie University in Australia. The author has used secondary data from various sources especially International Development Program Education Australia's biannual survey of international Students in Australian Universities and found that since 1996, there has been a steady growth in off-campus students. The author concluded that the development of the international online education project 'Borderless University' by Macquarie University is a good example for other universities preparing for the 21st century and global education.

Eltayib and Suliman (2020) have examined the impact of COVID-19 on Sudanese Higher Education System. They have done a desktop analysis leveraging Sudanese universities sources where possible providing a map of the intra-period higher education responses to COVID-19 across 11 universities and found that the responses by higher education providers have been diverse from having no response through social isolation strategies on campus and rapid curriculum redevelopment for fully online offerings. They have also discussed the reality of e-learning in Sudan for some Sudanese education institutions and have given recommendations on the same.

Zou et al. (2021) have discussed the online college English education in Wuhan against the COVID-19 pandemic with respect to student and teacher readiness, the challenges and the implications. They have used primary data by conducting a survey of 2310 non-English – major college students and 149 English teachers from three types of twelve higher education institutions in Wuhan to understand challenges and implications for future online college English education. They found that the overall level of readiness for students was 3.68 out of a score of 5.0, and that for teachers was 3.70. They also found that though the students reported the highest level of readiness in technology access, they were most troubled by technical problems during online study. They concluded that there is a need for online college English

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education development.

Roddy et al. (2017) have analysed the best practice principles for online instructors, students, and student support and considered how these might apply to intensive online environments. They suggest that the accelerated nature of learning in intensive settings may place additional demands on students, instructors and support mechanisms. Further research is imperative to determine predictors of success in online intensive learning environments.

Gopal et al. (2021) have examined the impact of online classes on the satisfaction and performance of students during the pandemic period of COVID-19. They did a quantitative study and collected from 544 respondents through an online survey who were studying the business management or hotel management courses in Indian universities and used structural equation modelling to analyse the proposed hypotheses and found that four independent factors essential for educational management, used in the study viz. quality of instructor, course design, prompt feedback, and expectation of students positively impact students' satisfaction and further student's satisfaction positively impact students' performance.

Julien and Dookwah (2020) have examined the experiences of undergraduate students as they transit from face-to-face learning to online learning at a higher education institution in Trinidad and Tobago. They used secondary data within the local context indicating that there exists a dearth of information about the experiences of these students. They conducted a survey where 15 undergraduates participated in this study with informal structured interviews and semi-structured questionnaires. They recommended the use of more online learning-form of education.

Wilczewski et al. (2021) have explored the psychological and academic effects of studying from the home and host country during the COVID-19 pandemic. They used primary data collected using an online questionnaire on 236 students from the host country and 121 in the home country from 62 countries done two months after transition to online learning. They studied students' levels of loneliness, life and academic satisfaction, acculturative stress, academic adjustment, performance, loyalty, and perceptions of the online learning experience and found that there is a positive influence of (peer and familial) support on online learning experience from the home country and a significant difference in experiencing acculturative stress occurred for students in quarantine/self-isolation in the host country. They concluded with a confirmation on the expected increased levels of loneliness among self-isolating students in both countries.

Fidalgo et al. (2020) have examined the students' perceptions on distance education by a

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multinational study. They have conducted an online survey distributed to undergraduate students in Portugal, UAE and Ukraine. Using this pilot study, they have found that in all the three countries, students' major concerns about such programs were time management, motivation, and English language skills. They concluded with six recommendations informed by interpretation of students' responses and the literature, offered to assist institutions who want to offer distance education as a part of their educational strategy.

Ng (2021) has proposed a conceptual model to understand the physical learning environment of online distance learners in higher education. The author found that little attention has been given to where exactly learners do their learning and studying and how the physical and social aspects of the physical environment within which the online learner is physically embedded (e.g., the home) supports and constrains learning activities and has drawn theories and research in environmental psychology, online learning, telework and mobile work, and higher education and also identified several gaps in research and suggestions for future research are proposed.

Wan et al. (2016) have done a multi-year study of teaching an online computer literacy course in a medical university to understand the effectiveness of adopting educational technologies in the students. They organised a course with three core components: Open Education Resources (OER) reading, a book club, and online game competition which were delivered by a learning management system (LMS). They found positive results in terms of students' self - evaluation and online participation rate. They concluded that innovative activity design is an effective method to enhance computer literacy for undergraduate students with health science-related majors.

Zalat et al. (2021) have explored the experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. They have used primary data collected using an electronic questionnaire with a validated Technology Acceptance Model (TAM) for exploring factors that affect the acceptance and use of e-learning as a teaching tool among medical staff members of Zagazig University, Egypt and found that 88% of the staff members agreed that the technological skills of giving the online courses increase the educational value of the experience of the college staff. The highest barriers to e-learning were insufficient / unstable internet connectivity, inadequate computer labs, lack of computers / laptops, and technical problems. They concluded with highlights on the challenges and factors influencing the acceptance, and use of e-learning as a tool for teaching within higher education.

Szpunar et al. (2013) have discussed the importance of understanding the nature and

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occurrence of mind wandering in the context of classroom and online lectures. They used secondary data by looking into early studies that say about student attentiveness via dependent measures such as physical markers of inattention, note taking and retention and gave a broad overview of studies that have directly measured mind wandering in the classroom and online learning environments. They concluded by discussing interventions that might be effective at reducing the occurrence of mind wandering in educational settings, and consider various avenues of future research that are believed to shed light on this phenomenon.

Valverde-Berrocoso et al. (2021) have described the educational integration of ICT and the teacher education model to obtain evidence that contributes to understanding the phenomenon. They have used primary data by conducting a survey using a questionnaire consisting of two self-reporting tools and a scale on the description of teaching practice with ICT was applied with a sample made up of teachers from public primary and secondary schools (N = 251) prior to the closure of schools due to the COVID-19 pandemic. They followed a univariate analysis along with descriptive analysis and found various weaknesses that can be identified in digital competence among teachers, as well as in the initial/continuing training model, which contribute to the understanding of the difficulties encountered during 'emergency remote education'. They concluded that flexible education requires a redefinition of the teacher training model that encourages learning anywhere, anytime.

(C) Research methodology

The current study follows an empirical method of research. The research problem is found based on the review of literature. The major contribution of the study is the collection of the facts of a particular area and testing of the hypothesis of a cause-and-effect relationship between variables. The research design is exploratory and experimental, exploring the problem tested with hypotheses and providing solution from the analysis. Convenient sampling method is used. The survey has been done during the COVID-19 pandemic period, when the lockdown was initiated all over Tamil Nadu, India. The sample size is 205. Primary data is collected via online questionnaire survey method and secondary data includes the articles, journals, and reports. The analysis is carried out for demographic statistics (Age, Education, Locality, Designation) and hypothesis testing graphs are used. The tools for analysis include clustered bar graphs, descriptive statistics, and ANOVA linear regression, using SPSS.

II. DATA ANALYSIS AND INTERPRETATION

Demographic statistics:

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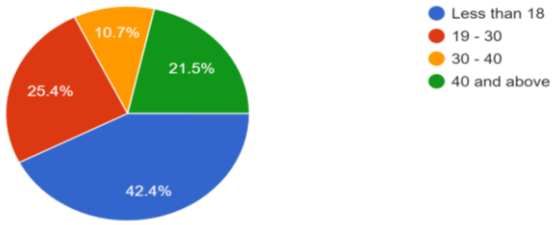
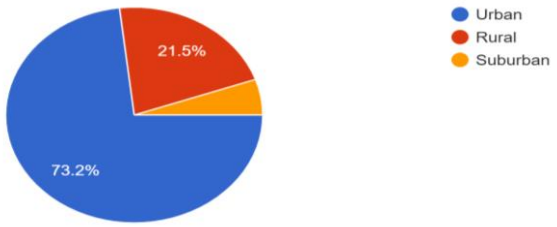
		Age	Educational qualification	Locality	Are you a student / teacher / parent?	Device used for online learning (parent, consider your child's mode)	Average time spent on online learning per day	Type of internet connection
N	Valid	205	205	205	205	205	205	205
	Missing	100	100	100	100	100	100	100
Mean		2.11	2.3902	2.52	1.74	2.74	3.31	3.49
Median		2.00	2.0000	3.00	2.00	3.00	3.00	2.00
Mode		1	3.00	3	2	3	3	2
Std. Deviation		1.177	.90959	.826	.521	.591	.625	2.016
Variance		1.384	.827	.682	.271	.349	.390	4.065

Variable 1:



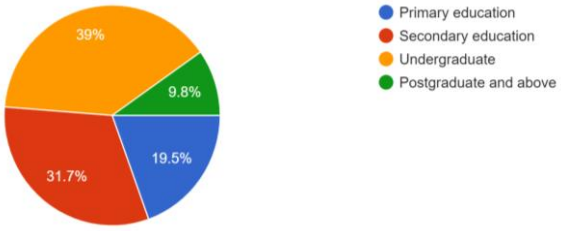
Legend: Pie chart showing the age of the respondents.

Variable 2:



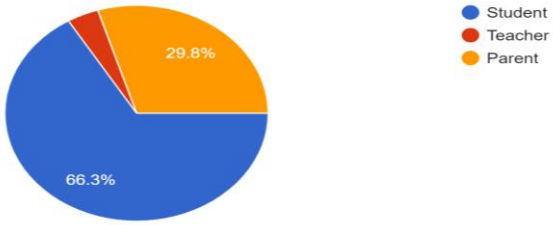
Legend: Pie chart showing the locality of the respondents.

Variable 3:



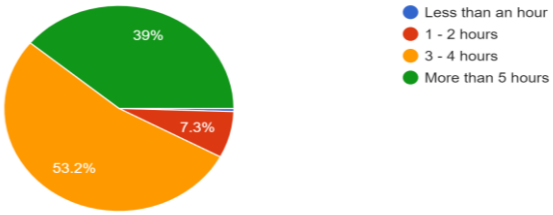
Legend: Pie chart showing educational qualifications of the respondents.

Variable 4:



Legend: Pie chart showing the designation of the respondents.

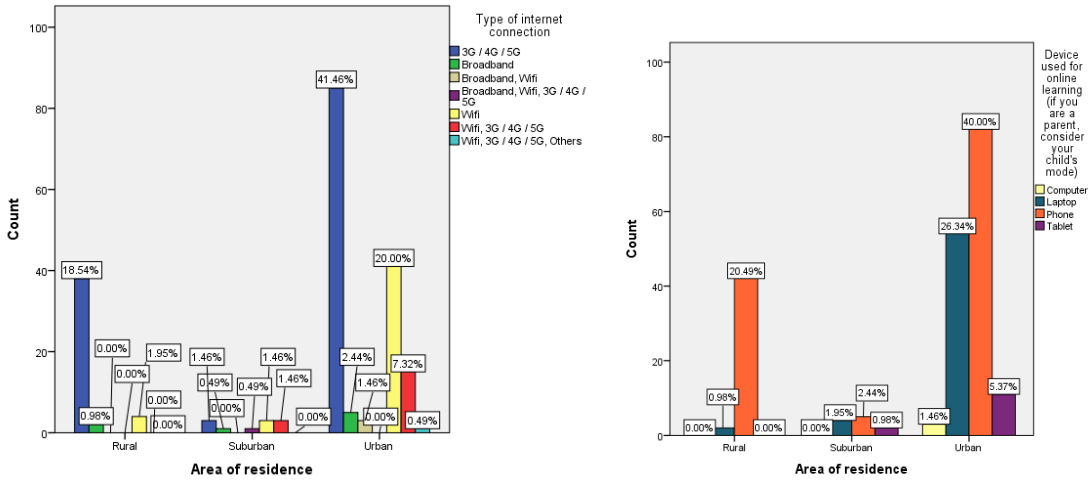
Variable 5:



Legend: Pie chart showing time spent on online learning.

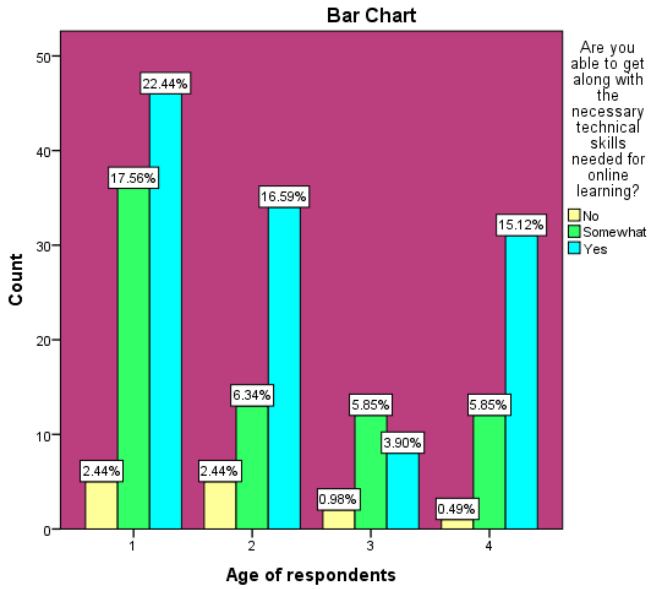
- Data analysis:

Figure 1:



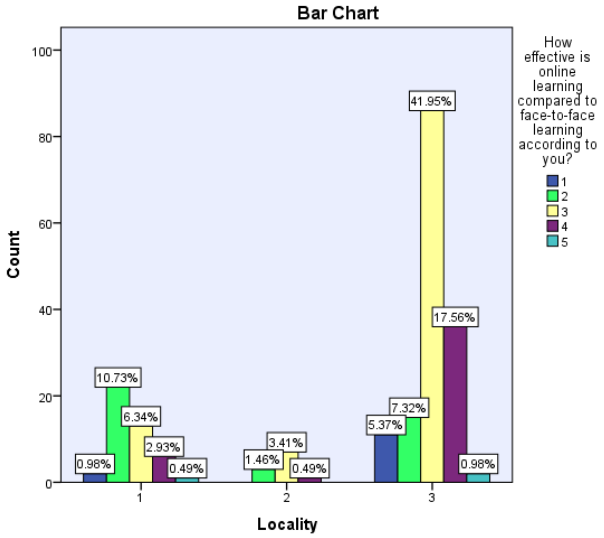
Legend: Figure 1 shows the type of internet connection used for online learning and the device used for online learning, based on their area of residence.

Figure 2:



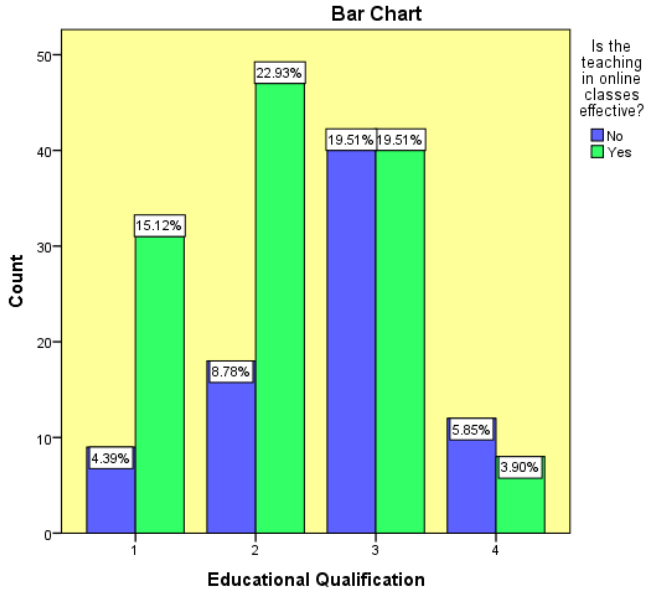
Legend: Figure 2 shows how many percent of the respondents have the technical skills needed for online learning based on their age where 1 – Less than 18, 2 – 19 to 30, 3 – 30 to 40 and 4 – 40 years and above.

Figure 3:



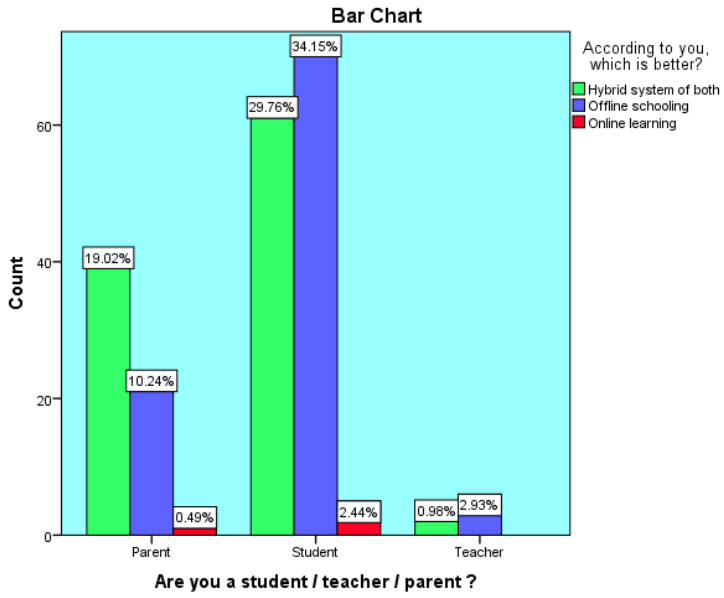
Legend: Figure 3 shows the views on online learning compared to offline learning according to the respondents based on their locality where in the horizontal scale, 1 – rural, 2 – suburban, and 3 – urban and in the coloured areas, 1 – worse, 2 – bad, 3 – not bad, 4 – better, 5 – very effective.

Figure 4:



Legend: Figure 4 shows the views of the respondents on whether they find online learning effective or not based on their educational qualifications where 1 – Primary education, 2 – Secondary education, 3 – Undergraduate, and 4 – Postgraduate and above.

Figure 5:



Legend: Figure 5 shows the views of the respondents on the desired mode of learning based on their designation.

Table 1:

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Average time spent on online learning per day[b]	.	Enter

a. Dependent Variable: How is your understanding of subjects in online learning?

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.021[a]	.000	-.005	.872

a. Predictors: (Constant), Average time spent on online learning per day

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.065	1	.065	.086	.770[b]
	Residual	154.491	203	.761		
	Total	154.556	204			

a. Dependent Variable: How is your understanding of subjects in online learning?

b. Predictors: (Constant), Average time spent on online learning per day

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.480	.329		10.577	.000
	Average time spent on online learning per day	-.029	.098	-.021	-.293	.770

a. Dependent Variable: How is your understanding of subjects in online learning?

Legend: Table 1 shows the linear regression between the independent variable, the average time spent in online learning and the dependent variable, the understanding of subjects in online learning.

Table 2:

Experience in online learning	Valid	Mean	Median	Mode	Std. Deviation	Variance
Flexibility in time and space	205	3.81	4.00	4	.648	.420
Practical lessons (e.g., laboratory classes)	205	2.80	3.00	3	.906	.821
Theoretical lessons	205	3.82	4.00	4	.620	.384
Learning materials	205	3.92	4.00	4	.706	.498
Interaction between teachers and students	205	3.30	4.00	4	.978	.957
Quick responses to doubts	205	2.67	2.00	2	.921	.849
Conduct of exams	205	3.02	3.00	3	.987	.975
Student-to-student interaction	205	2.35	2.00	2	.925	.855
Understanding of concepts	205	3.61	4.00	4	.795	.631

Legend: Descriptive statistics showing the experience in online learning according to the sample respondents where 1 - Very bad, 2 - Bad, 3 - Neutral, 4 - Good, 5 - Very good.

Table 3:

Impact of online education	Valid	Mean	Median	Mode	Std. Deviation	Variance

Social loneliness	205	4.13	4.00	4	.621	.386
Distraction from studies	205	4.19	4.00	4	.601	.361
Health problems	205	4.10	4.00	4	.717	.514
Missing school environment and friends	205	4.87	5.00	5	.440	.193
Difficulty in understanding lessons	205	4.04	4.00	4	.625	.391
Sedentary and monotonous learning style	204	4.00	4.00	4	.695	.483
Stress and anxiety	205	4.11	4.00	4	.625	.390
Virtual learning fatigue or mental fatigue	205	4.08	4.00	4	.572	.327

Legend: Descriptive statistics showing the impact of online education on sample respondents due to COVID-19 pandemic where 1 - Strongly Disagree, 2 – Disagree, 3 - Neutral, 4 – Agree, 5 - Strongly Agree.

Table 4:

Challenges faced during online education	Valid	Mean	Median	Mode	Std. Deviation	Variance
Network issues	205	4.28	4.00	4	.759	.576
Issues with irregular power supply	205	4.08	4.00	4	.893	.798
Lack of devices to aid online classes	205	3.83	4.00	4	.826	.681

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Lack of interaction	205	4.12	4.00	4	.618	.382
Difficulty in getting the doubts cleared	205	4.32	5.00	5	.865	.749
Lack of effective teaching methods	205	3.98	4.00	4	.653	.426
Lack of peer group learning	205	4.39	5.00	5	.723	.523
Lack of face-to-face interaction affecting attentiveness	205	4.61	5.00	5	.674	.454
Distractions at home	205	4.09	4.00	4	.683	.467
Lack of physical activity, affecting physical and mental health	205	4.68	5.00	5	.570	.325
Lack of technical skills	205	3.95	4.00	4	.698	.488
Lack of suitable environment for attending online classes	205	3.95	4.00	4	.651	.424

Legend: Descriptive statistics showing the challenges faced due to online education according to the sample respondents where 1- Agree, 2 - Disagree, 3 - Neutral, 4 - Strongly Agree, 5 - Strongly Disagree.

III. RESULTS

Figure 1 shows that majority of the sample respondents use phone for their online classes (62.9%) and only a few use computers for the same (1.5%). Of this, the majority of those in the rural areas use phones (20.49%) while the only other device used by them is laptop. But those from the rural areas use all the given devices for their online classes with phone (40%) and

laptop (26.34%) being the most used devices. Again, when it comes to the type of internet connection used, the respondents from the rural areas majorly use 3G/4G/5G (18.54%) and the other internet connections used are Broadband (0.98%) and Wi-fi (1.95%). Those from the urban areas mostly use 3G/4G/5G (41.46%), followed by Wi-fi (20%). But it is noted that those from the suburban areas and urban areas have all the types of internet connections available for them to use for online classes. Overall, phones and 3G/4G/5G is used by the sample respondents.

Figure 2 shows that majority of the respondents who are less than 18 years, 19 to 30 years, and those who are 40 years and above, get along with the necessary technical skills needed for online learning (22.44%, 16.59%, 15.12%, respectively). Those are aged between 30 to 40 years somewhat get along with the necessary skills needed for online learning (5.85%). On the whole, only around 5% of the respondents don't get along with the necessary technical skills needed for online learning.

Figure 3 shows that the majority of the respondents from the urban areas and suburban areas state that online learning is not bad as compared to face-to-face learning (41.95% and 3.41%, respectively), while majority of the respondents from the rural areas state that online learning is bad compared to face-to-face learning (10.73%). Only a few feel that online learning is better than face-to-face learning (20.98%) while 1.47% feel that online learning is very effective compared to face-to-face learning.

Figure 4 shows that a majority of the respondents who have completed primary education and secondary education find teaching in online classes effective (15.12% and 22.93%, respectively). The undergraduates show state that teaching in online classes is effective and ineffective as they have shown an equal percentage (19.51%). Those who have completed their postgraduate degree and above, state that teaching in online classes is ineffective (5.85%).

Figure 5 shows that the majority of the parents find a hybrid system of online and offline learning better than having only either of them (19.02%). Majority of the students find offline learning (34.15%) better than online learning (2.44%) and a hybrid system of both (29.76%). But there is only a slight difference between their support to offline learning and hybrid system. No teacher finds online learning (0%) as a better one than offline learning (2.93%) and a hybrid system with both online and offline learning (0.98%), with more teachers opting for offline learning.

Table 1 shows that there is a significant relationship between the independent variable, average time spent in online learning and dependent variable, understanding of subjects in online

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learning as the t-value is high (10.577) and more than 2 and is more than the significance value (4.14). The time spent in online learning affects the understanding of the subjects.

Table 2 shows that in terms of flexibility in time and space, theoretical lessons, learning materials, interaction between teachers and students and understanding of concepts, majority of the respondents find their experience in online learning as good, as the mode in all these criteria is 4 and mean is 3.81, 3.82, 3.92, 3.30, and 3.61, respectively. Majority of the respondents find their experience in online learning as bad in terms of quick responses to doubts and student-student interactions, as the mode in both the cases is 2 and mean is 2.67 and 2.35, respectively. Majority are neutral about their experience in online learning in terms of practical lessons and conduct of exams as the mode in both the cases is 3 and mean is 2.80 and 3.02, respectively.

Table 3 shows that the majority of the respondents agree that online learning has made an impact in their lives, in terms of social loneliness, distraction from studies, health problems, difficulty in understanding lessons, sedentary and monotonous lifestyle, stress and anxiety and virtual learning fatigue or mental fatigue, as the mode in all these criteria is 4 and mean is 4.13, 4.19, 4.10, 4.04, 4.00, 4.11, 4.08, respectively. Majority of the respondents strongly agree that online learning has led to them missing their school environment and friends, as the mode is 5 and mean is 4.87. It is confirmed that everyone agree that online learning has made a great impact on their lifestyle and learning pattern.

Table 4 shows that the majority of the respondents agree that the challenges in online learning are network issues, issues with irregular power supply, lack of devices to aid online classes, lack of interaction, lack of effective teaching methods, distractions at home, lack of technical skills and lack of suitable environment for attending online classes as the mode in all these criteria is 4 and mean is 4.28, 4.08, 3.83, 4.12, 3.98, 4.09, 3.95, and 3.95, respectively. Majority of the respondents strongly agree that the major challenges in online learning are the difficulty in getting the doubts cleared, lack of peer group learning, lack of face-to-face interaction affective attentiveness and lack of physical activity, as the mode is 5 and mean is 4.32, 4.39, 4.61, and 4.68, respectively. Many of them agree that almost all the factors, as given here, are a barrier in online learning, from network issues to distractions at home.

IV. DISCUSSION

The majority of the respondents rely on mobile phones and 3G/4G/5G internet more than the other choices. Mobile phones thus, have got an important role in education in the recent scenario considering the past negative issues regarding phone usage. Another thing to be noted is that many are from the urban areas and hence, such facility may be available well for them. Those

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from the rural areas don't have all the types of devices and internet connection to use for online classes. This clearly shows the problem of internet penetration and development disparities between the different areas of residences of the people **(Figure 1)**.

Many are able to get along with the necessary technical skills needed for online learning. This may be because in a year in a pandemic, people have developed these skills over time, as these technical skills are important for their studies. While looking into this aspect in terms of the age groups, those who are less than or up to 30 years show relatively more people who are not able to get along with the necessary skills needed for online learning. This may be because many of the respondents are students and some might find it difficult to get along with the sudden changes in their learning patterns **(Figure 2)**.

Online learning is manageable according to the respondents compared to offline learning on a general basis. Of this, we can still see that respondents from rural areas feel that online learning is bad compared to offline learning. This can be due to the fact that people from rural areas have limited access to electricity, internet, proper devices, etc., because of which they are constantly anxious and stressed about how they will get along with the lessons taught in online learning **(Figure 3)**.

People normally find online learning effective. But it is noted that there is an equal percentage of respondents who have completed their undergraduate degree, who don't find teaching in online classes effective. Also, those who have completed a postgraduate or a higher degree state that teaching in online classes ineffective. This may be because they have not attended online classes considering their supposed age groups **(Figure 4)**.

The desired mode of learning is found to be offline learning or a hybrid system of both. This result is in contrast with the result from Figure 3 and Figure 4. This draws us to the conclusion that people find online learning manageable yet don't desire for the same. This may be due to many reasons which are discussed in the tables that follow. It is concluded that people prefer offline learning more than online learning. Only a very small fraction of people finds online learning better than offline learning and hybrid system of both **(Figure 5)**.

There is a significant relationship between the independent variable, average time spent in online learning and dependent variable, understanding of subjects in online learning. When more time is spent in online learning, the stakeholders may find it difficult to cope up. Sometimes, they tend to get vexed because of spending too much sitting and a lot of screen time. Also, the other way to consider the relationship is spending more time in school and the understanding of subjects **(Table 1)**.

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Though there are found to be merits of online learning, there are more demerits. For example, practical lessons cannot be taught to the fullest due to lack of face-to-face interaction and improper teaching methods. Online learning is found to be bad in terms of people's connection with their school environment and their friends though online learning is found to take away the disadvantages found in offline learning like flexibility in time and space. It is concluded that people's experience in online learning has been both good and bitter at the same time **(Table 2)**.

Online education has made a lot of impact on the stakeholders psychologically. The main impact is stated to be their yearning and longing for the school environment and meeting friends. School environment and meeting friends is found to play a major role in students' lives and may be concluded that missing school and friends would have led to many psychological impacts on the students. Many agree that online learning has led to social loneliness, distraction from studies, health problems, difficulty in understanding lessons, sedentary and monotonous lifestyle, stress and anxiety and virtual learning fatigue or mental fatigue. Since there is no way other than online learning, the stakeholders seem to put up with it. It is concluded that the stakeholders have been psychologically affected by online learning **(Table 3)**.

Online learning is found to pose many challenges to the stakeholders. The main challenges according to the stakeholders are found to be the difficulty in getting the doubts cleared, lack of peer group learning, lack of face-to-face interaction affective attentiveness and lack of physical activity. Other challenges they agree upon are network issues, issues with irregular power supply, lack of devices to aid online classes, lack of interaction, lack of effective teaching methods, distractions at home, lack of technical skills and lack of suitable environment for attending online classes. **(Table 4)**.

Apart from these, the stakeholders agree that there are other barriers too which need to be looked at too. Children aged below 10 years are the most affected as they have not yet stepped into the society and many have lost their social skills. We need to note that schools are considered as mini societies that help us to improve the required skills needed to develop in this world. This is also stated by some respondents. Many respondents have brought out their reasoning as to why online learning are not that effective. One of the respondent has stated that online classes are effective only if the teachers could make the students understand the concepts using extraordinary teaching techniques; but lack of emotional-cum-physical closeness and no contact among the students affect their learning process and that students also fail to experience the school environment that results in the failure of building the social behaviour that will have a serious impact when they are expected to interact with different personalities in future. So, a

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hybrid mix with perfect blend of online and offline schooling techniques may help to take over these difficulties. One of the respondents pointed out how the students learning online will be missing the cheerful environment and wide range of experiences missing the making of such childhood memories. Another respondent has stated how not all people are able to attend online classes as they can see young children going to work for daily wages. Their education is getting compromised because of their financial problems. This is true owing to the cost of attending an online learning being higher than the cost of going to offline classes. Some others have stated that learning is a continuous process and, in this pandemic, online learning helps to be in touch with subjects for their daughter and other students. Another person has contended that something is better than nothing and for pandemic situation, online is better than offline. But it shouldn't be permanent method according to a few others. It has also been stated that online keeps the students in touch with studies but not good enough for long term for their overall studies. According to another respondents, online learning is never appreciated. It brings more burden than knowledge. Some state that teachers should prepare study materials and refer books instead of reading from Google. This contention may be because of the use of materials available online used by teachers themselves for teaching in online classes. They also expect more student-student interactions, teacher-student interaction, student participation and engaging classes which is considered as one of the challenges in online learning. Learning without a gap is considered to hamper the studies of students too. Some suggest hybrid systems on alternate days or doubt-clearing sessions in offline classes as online learning cannot displace offline learning for a 100 percent. And also, offline schooling is considered to be needed for the better future for students and that they are very important in every student life. Some wish online learning to work better like how it looks so, on the face of it.

Overall, online learning, though works better as an alternative to offline learning in the pandemic, being effective and manageable according to people, people don't prefer online learning when they are asked to choose between online learning and offline learning as the cons of online learning over weigh the cons of offline learning.

- **Limitations of research**

The major limitation of this study is the sample frame. The samples were collected through online platforms like sending links via WhatsApp, and so, the sampling method and sample size are yet another drawback. Collection of data via online platforms is limiting the researcher to collect data from the field as the respondent is not known, and hence, there is lack of reliability over the respondent's opinion and this research could only come to an approximate conclusion.

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V. SUGGESTIONS

Since the students miss physical interaction with fellow students and peer groups, this deprivation should be offset by creating a proper family environment. Teachers should encourage students to be involved in discussions, and the teaching method should not be one way traffic. Generally, students understand the subjects better in a classroom teaching rather than in online learning. Hence proper methods should be evolved for online teaching. Psychological impact is more in the case of children. There are cases where children lose interest in talking or understanding and even refuse to take food, because of online teaching. Generally, children learn by playing, which is not possible in online learning. The time spent in online learning needs to be reduced as students tend to get anxious and stressed due to increased amount of time sitting in the same place. Not all can do self-study. Hence, there is a need for special attention to those who depend on the teachers for learning.

VI. Conclusion

Technological advancement has forced a radical change in many aspects of society. This has influenced the formation of societies and has placed a big role in education. It has assisted in the creation of information delivery and information society. Educational institutions are under pressure to meet the requirements for efficient and effective education.

Online education has a very bad psychological impact on students due to its parting away from the school environment. It has brought a large impact on children aged below 10 years who at that age, need to step into the society and develop their social skills. Since not all the classes are as interactive and engaging as in offline classes, understanding of concepts have become a question mark to students who are not good at self-learning.

We need to understand that students not only need intelligence to develop, but also need to develop intellectual and social skills to improve both their intelligence quotient and emotional quotient. Online learning helps in many other ways like in distance education to those who cannot afford for on-campus classes, as it is an easy mode of learning cutting time and cost factors. However, the objective of learning is to improve the students mentally, socially and psychologically too, which is possible only in offline classes.

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