

Measuring the Effect of E-Learning during Pandemic covid 19 Among Rural Students: The Case Study of Rural Students Residing in Chengalpattu

Mr. J. Yuvaraj

Assistant Professor,

Department of Visual Communication,

Sathyabama Institute of Science & Technology, Chennai. yuvaraj.viscom@sathyabama.ac.in

Dr. Nazini

Head of the Department, Assistant Professor,

Department of Visual Communication,

Sathyabama Institute of Science & Technology, Chennai

nazini.viscom@sathyabama.ac.in

Mr. A R Vimal. Raj

Assistant Professor,

Department of Visual Communication,

Sathyabama Institute of Science & Technology, Chennai vimal.viscom@sathyabama.ac.in

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Abstract— The global pandemic, COVID-19 have initiated the social distancing and digital platforms to enhance the E-Learning method. People started practicing staying indoors and being idle within indoor may lead to mental stress. To make people more involved and stress free, online learning is playing an important role. In this pandemic situation, online mode of learning is the best solution. Professors and other teaching professionals are making use of the virtual teaching platforms to teach from their home with all effective tools needed, which indeed makes the online sessions effective as the traditional ones. Pandemic has changed the whole process of teaching and learning. This has made learners to stay at their place and connect virtually for a long period of time and which in turn obstructs teaching and learning process. This Research framework emphasizes on the beneficial aspects of online learning at the time of pandemics. The continuous learning process emphasized through online learning with some digital tools and techniques. Education is being transformed not only in private schools, but it is being slowly setting benchmark in government schools also. E-learning technology is now creating new avenues and transforming the education sector. The preparation of teachers for online classes has changed. As the rural area Schools and colleges are getting adapted to the technological advancement e-learning is getting into a positive transformation. It is a great motivating factor that the rural area is trying to adapt to the digitally enhanced learning method from the traditional methods. Even though having many benefits in E-Learning there are some obstacles in online learning, but still digital learning has employed. The one factor of consent is that the rural area students are not fully equipped with technological factors like uninterrupted power supply, internet and mobile devices. Student behavior and attitude has changed in online classroom. Still many rural areas in India are trying to find solution for the above challenges to become eligible to

receive education completely online or in digital format.

Keywords: Rural education, distance education, Smart classroom, Internet, online teaching, student attitude, teacher methodology, World Wide Web, Government school.

I. INTRODUCTION

We live in a digital era. Gone are the days where we have to stick to a giant-size black box with a hand receiver to speak with someone who must have the same then-so-called telephone machine. Now, with ease, we can get connected to someone on the other side of this planet instantly. Social messaging applications and e-mail features have taken away the hassle of sending handwritten letters and wondering when it will reach the recipient. Until a few years back, no one thought we would order food online and get it delivered at our doorstep. Bill payments are superbly easy to carry out. No doubt, the modern technologies have changed our life in a whole different sphere than what we had been few decades ago and we must agree to the fact that future generations to come will lead a completely different lifestyle.

What matters is, out of 195 and more nations, how many countries have these technologies available for the people. It will become morally meaningless if these features are not available and accessible to all class of people across the globe. As the developed countries are reasonably a way forward in science and technologies, they get to access and enjoy the inventions sooner of their coming. However, the developing countries have to go through few processes to get the technology available to their government and people. It is further challenging for the undeveloped countries. India is considered to be in a good shape in terms of technologies and their availability. Yet, there are some grey areas which are not being talked widely and openly. We are all connected in one way or the other. What concerns a common man is, rural geographical locations are much behind than what urban cities have. Such a difference in the same country does not lead to a healthy and proportionate development of a nation. Internet connection and network availability are indispensable factors when talking about technology development. They play a major role in education. While there are many digital classrooms and online class features being conducted comfortably in urban cities, many villages still do not have internet facility in their region. Fortunately, smartphones have reached to all parts of our nation to a great extent. However, children who have to use smartphones for education purpose find it difficult to attend online classes/seminars due to non-availability of network provider in their villages. This imbalance should be addressed and regulatory measures must be taken in order to provide an equalized teaching to the students in all medium. Though private players like Jio, Airtel, VI etc., are leading in this race and trying to reach urban as well as rural geography, we can still see a digital divide in the accessibility by the people.

Traditional Classroom Learning Vs Virtual Classroom Learning: A black board and a teacher lecturing in front of students is the conventional way of teaching for effective learning as it has been for so many years. While virtual classroom learning has its own advantages, we cannot be certain whether it is up to the conventional classroom learning. Physical presence of the students in classroom gives room for interactions and live exercises. Despite having the same features in online learning (in a different mode), it doesn't feel complete like doing the same in traditional classroom. Through the traditional classroom learning, the teacher can evaluate the strength and weakness of students better. Conventional Classroom learning implies a social discipline and works

to better the mental alertness of the students. When students attend the class virtually, they tend to get distracted easily depends on their seated atmosphere. Not every student would have an individual room with a reasonable space at their home to attend the online class without any interruption. A strong and stable network is an essential element for online classroom learning. Though we have many network providers, we cannot say all the geographical regions in our country have strong network connectivity. Without a stable connectivity, online classroom learning cannot be attended properly by students.

Further, digital screen phenomena when used more than its limit, will lead to health complications. Globally, doctors are advising the mobile/laptop users to reduce the screen-time to avoid eye related issues. For students who already have eyesight issues, continued or long sessions of online classroom learning practice will further deteriorate the eye power. When the online classroom grows much to a broader usage, the educators have to consider these health points into consideration.

II. OBJECTIVE OF THE STUDY

This research attempts to find the students behavior and effectiveness of E-Learning.

- To find out the barriers of online education for students in rural area.
- To investigate what type of education students in rural area are willing to study for future development.
- To find out the student's activity and interactivity in online classroom.

III. REVIEW OF LITERATURE

Rimme Anand (2012) E-Learning is developing new skill set to learners. About 48% of respondents in digital learning is benefitted by way of knowledge, job opportunities, and learn new technology in the market creating new opening for the near future. People trust that E-Learning will surely help to fill the gap between developed cities having high literacy factor and rural areas with lesser literacy factor.

Ms. Swati Yadav, Dr. Anshuja Tiwari (2016) Accessing to information will result in Development of any society and also for rural India too. The entitlements achieved by socially marginalised community are empowered through E Learning. The first direction of welcome step is the launch of Digital India Programme.

Thomas, (2020) Pandemic COVID-19 has deteriorated the key elements such as Liberalization, Privatization and Globalization in education standards due to the limited mobility and exchange for academic activities between countries. The third world countries especially low and middle income countries suffer financial setbacks and lack of resources are making them paralytic in managing the changing scenario of educational planning, management and organization.

Gopal naik and K N Narasinga Rao (2020) The survey reveals that the Poor internet connection and the lack of device laptop/desktop are the main challenges faced by the students in rural area in online class. Last year, the Government of Karnataka issued laptops to first year degree students under the GFGCs scheme. Students will be able to access the OTC, if they have proper internet connection and laptop. Government of India through Bharat Net scheme is planning to connect all the 2.5 Lakh Gram Panchayat and provide Wi-Fi connection and Fiber net-based internet connectivity for households and institutions in rural areas. The students in village will connect in their laptop to access OTC with the help of WIFI. Without any delay if the Wi-Fi internet connectivity is provided as a harsh reminder of Corona students will be benefitted in their online

education.

Nanigopal Kapasia, Avijit Roy (2020) the education institution should formulate a perfect Education Continuity Plan (ECP) to help the students continue their learning process even during such pandemic. The education institution should avail the infrastructure facilities to start the digital learning process during future health emergencies. To improve the education system, it needs funding from different agencies and the stakeholders of higher education institutions getting the training. Positive space should be provided for the students who come from the vulnerable section of society by different initiatives. During pandemic the emerging vital multi-prolonged strategies are to be built to continue education that will ensure the development of the skill set to enable employability and productivity among young minds.

A. SAMPLING

Random Sampling and Convenience Sampling respondents are identified.

85 Samples selected –rural students in Chengalpattu, Tamil Nadu is selected for the study.

IV. METHODOLOGY

In order to study the online education from the population of E-Learning users respondents are selected. Students in rural area around Chennai are selected as a population using random sampling and convenience sampling respondents are identified. Students are engaged heavily in online education. The survey method is used to collect the quantitative data from the sampling. The factors influencing the consumer and the online websites are used as variables in this study. Descriptive and statistical tools are used to verify the significance of variable. To identify the significance of relationship between variables, correlation test is applied.

Random sampling and convenience sampling

Survey method

Quantitative data from the sampling.

Descriptive and statistical tools are used to verify the significance of variable.

To identify the significance of relationship between variables, correlation test is applied. Students in rural area Knowledge about E-Learning software:

Moodle LMS

Zoom

Google meet

Microsoft Teams

A. RESULT AND DISCUSSION

This study has yielded the following results and they are at first presented in a Descriptive manner. This study was carried out among the students of rural area in and around Chennai. Majority of the students have access to digital devices. Further statistical analyses will be done to find out which factors are significant in the online education behavior.

A. (i) DESCRIPTIVE DATA

In this section the finding is presented in the form of frequency and percentage along with the mean and standard deviation. A graphic presentation will assist in explain the data of information with more Clarity

Students giving preference and like to attend traditional classroom method.

In pandemic all the education system changed online.

Online education is adapted because of pandemic situation even-tough students like Traditional classroom method.

TABLE 1. FREQUENCY AND PERCENTAGE OF GENDER OF THE RESPONDENTS

VARIABLE	FREQUENCY	PERCENTAGE	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
MALE	42	49.7	49.7	49.7
FEMALE	43	50.3	50.3	100
TOTAL	85	100	100	

FIGURE 1: FREQUENCY AND PERCENTAGE OF GENDER OF THE RESPONDENTS

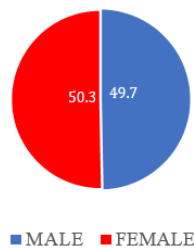


Table 1 and Figure 1 describes the frequency and percentage of gender chosen for the research with the percentage of 50.3 and 49.7 in Female and Male respondents respectively

TABLE 2. FREQUENCY AND PERCENTAGE OF AGE GROUP OF THE RESPONDENTS

VARIABLE	FREQUENCY	PERCENTAGE	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
18 - 20	53	62.4	62.4	62.4
21 - 23	29	34.1	34.1	34.1
23 - 25	03	03.3	03.3	100
TOTAL	85	99.8	100	
SYSTEM	01	0.2		
TOTAL	85	100		

FIGURE 2: FREQUENCY AND PERCENTAGE OF AGE GROUP OF THE RESPONDENTS

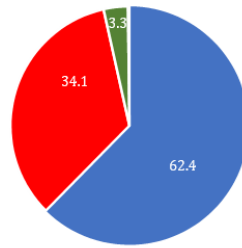


Table 2 and Figure 2 shows the age group of the respondents in this survey. It also displays that 18-20 age group of the respondents are higher than the other two age group. About 62.4 percent of the respondents are under the category of 18-20 Age group. Besides, 3.3 percent respondents are the age group of 23-25.

TABLE 3. FREQUENCY AND PERCENTAGE OF DEVICE USED FOR ONLINE CLASS BY RESPONDENTS

VARIABLE	FREQUENCY	PERCENTAGE	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
MOBILE	53	62.3	62.3	62.3
LAPTOP	29	34.2	34.2	34.2
TABLET	03	3.5	3.5	100
TOTAL	85	100	100	

FIGURE 3: FREQUENCY AND PERCENTAGE OF DEVICE USED FOR ONLINE CLASS BY RESPONDENTS

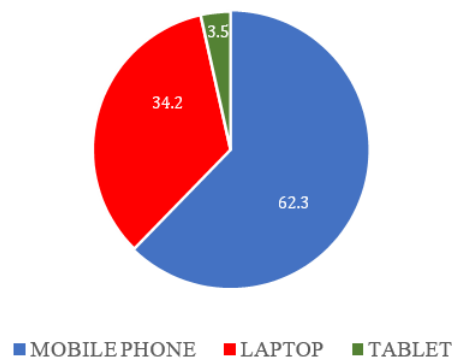


Table 3 and Figure 3 depicts the devices used to access online class of the 85 respondents, showing 62.3% being used in Mobile as it is a common connective device in the rural areas. Also, it is handy to carry with which it involves as part of our day-to-day life. Least percentage is 3% of respondents using online class with Tablet as a tool. This graph shows that most of the students prefers to use

Mobile device and also it is a cheaper device to afford for rural people.

Table 4. FREQUENCY AND PERCENTAGE OF TEACHING LEARNING METHOD STUDENTS PREFERRED FOR FUTURE

VARIABLE	FREQUENCY	PERCENTAGE	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
TRADITIONAL CLASSROOM LEARNING	65	76.4	76.4	76.4
E-LEARNING	20	23.6	23.6	100
TOTAL	85	100	100	

FIGURE 4: FREQUENCY AND PERCENTAGE OF TEACHING LEARNING METHOD STUDENTS PREFERRED FOR FUTURE

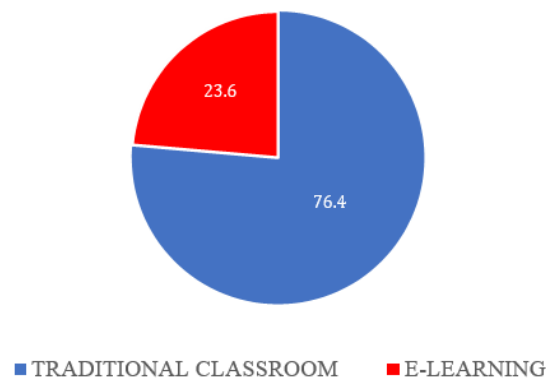
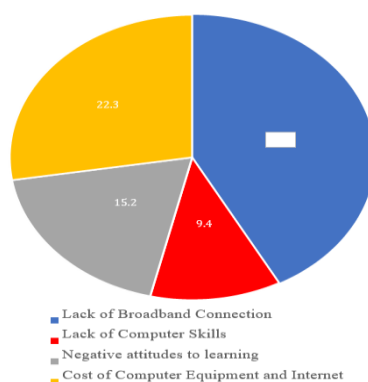


Table 4 and Figure 4 provides the opinion of the respondent about the teaching learning method students preferred for future for educational purpose. A majority of the respondents (76.4%) prefers for traditional classroom learning than E-learning (23.6%). Though we are in the world of technology still respondents prefer traditional classroom learning and disagrees for online learning. This result proves rural area learners have been affected and not in the interested state to continue with online education.

TABLE 5. FREQUENCY AND PERCENTAGE OF STUDENTS BARRIER IN ONLINE EDUCATION

VARIABLE	FREQ UENC Y	PERCE NTAGE	VALID PERCE NTAGE	CUMU LATIV PERCE NTAGE
Lack of Broadband Connection	29	34.1	34.1	34.1
Lack of Computer Skills	8	9.4	9.4	9.4
Negative attitudes to learning	13	15.2	15.2	15.2
Cost of Computer Equipment and Internet	19	22.3	22.3	22.3
Lack of knowledge about E-Learning, Course choice etc.	16	18.8	18.8	100
TOTAL	85	99.8	100	

FIGURE 5: FREQUENCY AND PERCENTAGE OF STUDENTS BARRIERS IN ONLINE EDUCATION



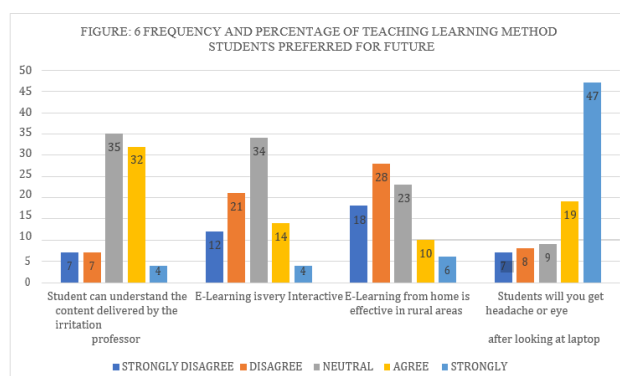
From the Table 5 and Figure 5, Variables are the barriers for the rural students who attending online education. With 34.1% respondents agrees the lack of broadband connection in the rural areas to

connect and attend the classes. Next to this barrier, Respondents around 22.3% agrees the cost of equipment to interact the classes with proper internet connection. Moreover, only 9.4% respondents have lack of computer skills and other tech skills to learn through online. Objective of the research strongly agrees with the result which states rural area learners or students have barriers to attend online classes.

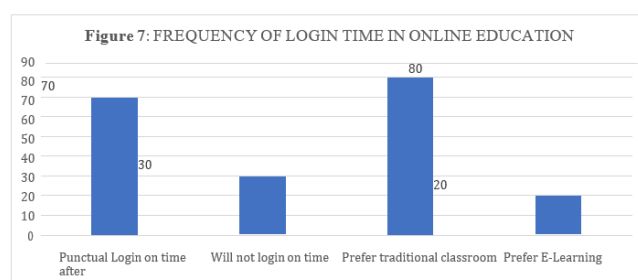
TABLE 6. FREQUENCY OF EFFECTIVENESS OF ONLINE EDUCATION

VARIABLE	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	TOTAL
Student can understand the content delivered by the professor	7	7	35	32	4	85
E-Learning is very Interactive	12	21	34	14	4	85
E-Learning from home is effective in rural areas	18	28	23	10	6	85
Students will you get headache or eye irritation after looking at laptop or	7	8	9	19	47	85

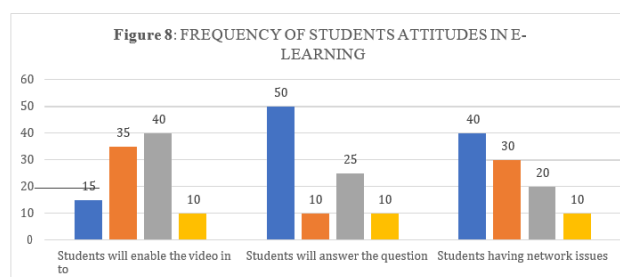
Mobile Screen						
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The above Table 6 and Figure 6 shows the effectiveness of online education for students or learners. With the results from the respondents, for the variables Students can understand the content delivered by professor and E-learning is very interactive during online class opinions highly neutral 35 and 34 respondents respectively. Whereas E-learning from home is effective in rural areas shows higher disagree from the result around 28 respondents. 47 Strongly agreed respondents who affected with headache and eye irritation after long hours of online class watch.



As it is presented in Figure 7, it is clear that 80% of the respondents prefers traditional classroom learning after COVID pandemic. Only 20% of the respondents wants to continue with Online Teaching method after COVID Pandemic. 70% of the respondents used to login on time punctually during online class. Around 30% of the respondents will not login on time when online class goes.



As it is presented in Figure 8, Video presentation in online classroom, 15% Students are enabling the video in online classroom, 35% Students will not enable the video in online classroom, 40% Students will enable the video sometimes in online classroom, 10% Students will enable the video rarely in online classroom.

Interactivity: Whether students answering the professor question, 50% students answered that yes, will answer the professor subject content questions, 10% students answered that no, will not answer the professor subject content questions, 25% students answered that will answer sometimes for the

professor subject content questions, 15% students answered that will answer rarely for the professor subject content questions, 60% of the students having network issue, 34% students having good network to attend online class, 80% student prefer traditional class room after COVID pandemic, 20% student prefer E-Learning after COVID pandemic.

V. CONCLUSION

This study provides lot of insights into the rural area student's education development. Students are continuously using an internet for online education and other activities. The personal character such as age, gender and occupation do not make any significant effect on their online education. Students like traditional classroom method rather than E-Learning with the finding from the study. Students having network issue, less understanding, not interacting properly during the online based E-learning method. Students from rural area who attending the online class suffers with mobile data which is not sufficient to attend all the classes per day.

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