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## **Student perception on learning patterns, references & challenges in e-learning**

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**Abstract**---Online Learning is one of the chief custom in day to day life due to Covid-19. In this pandemic season all students were enthused into E-Learning platform which is in need of hour to pursue their course. This subjective research fusion scrutinizes school children's, Graduates, Post-Graduates, Scholars experiences with online learning climate. For instance, a few pupils were pleased through their online platform other than still strive complementary with E-Learning. In addition, students originate to admit in an online learning will helpful to connected towards their jobs was very valuable. E-Learning creates an interesting environment where students can learn with animation picture, audio and video modes. Subsequent to an examination and variety of articles feasible, this manuscript pursuit to endow with a complete observation of the digital learning. The enormous blow of the Virtual learning systems in the meadow of tutoring specially in the superior learning has been confirmed in this paper.

**Keywords**---e-learning, virtual teaching, digital learning, student engagement.

### **Introduction**

Since 1999, the term e-learning has been used at Computer Based Training Programs (CBT) systems seminars. The principle behind e-learning is evident that e-learning existed as far back as the 19th century. Before the advent of the Internet, distance education offered students with education to develop skills.

First testing machine in 1924 was invented to test themselves. In 1954, BF Skinner invented the teaching machine in 1954 to enable schools to program instructions to the students. During the late 20th century, with the development of computers and Internet, there was a vast development in e-learning tools and delivery methods. In 1980, first MAC enabled personal computers at home to enhance and enrich learning. Expansion of E-Learning offers an opportunity to increase the e-learning tools that are useful to all sectors like companies, government bodies and individuals. The gap in the education system is closer due to the reach of e-Learning with the rapid growth in the economy today. The globalization of the 21st century is highly convenient and accessible. Conventional model of the education system has been disrupted in this pandemic with the wave of change in the education system through online education. The statistics from statista suggest that 65% of faculty support the use of Open Educational Resources (OER), 39%, for instance, support gamification and 37% faculty support MOOC courses.

As per 2011 census, 10% of Indians are in the age group of 14-18 years. This leads to more than 10 crore youth. India has more than 370 million users on the Internet that led to the growth of Online education at a faster pace. As stated by Arora 2017, more than 3 billion users use e-learning platform. Out of 18 million users of course era which is one of the largest e-learning platform 1.3 million users are from India. India is the third largest country for online learning after US and China. More than the student population, online enrolments are growing at a rapid rate and this is expected to continue in the forth coming years by slogan consortium. Most of the educators' state that online learning far better than face to face teaching. Increase in population [Broad 1997], competition among the educational institutions [Daniel & Cox 2002] and the change in the need of learners [Willis, Tucker & Gunn, 2003] increases the influence of e-learning.

The educational institutions started to adapt to the changes in the teaching and learning scenario with the growth and advancements in Internet technology to meet the demands of the learners and to provide a prominent and an ideal environment to enrich their knowledge. [Xu and Ebojoh 2007]. Knowledge is being shared through the Internet, which is accessible 24/7, anywhere, anytime. The term "E-learning" refers to education that occurs with electronic gadgets using Internet and Intranet [H Li 2009]. Alternatively, this is a form of "distance learning" referring to any learning that takes place in virtual in distance mode rather than conventional classroom. E-learning platforms are found to be increasing exponentially in almost all sectors. especially in education and corporate sectors over the past three to five years. The different modes of distance learning include Mobile Learning, Online Learning, CD-ROM courses, Tele-courses, Correspondence courses. Before the digital era, classes were confined to chalk and talk methods. Learners and educators are engaged with devices towards online courses and digital textbooks.

### **Review of Literature**

Cheng, G., and Chau, J. (2016)., The significance of instructors in promoting communication and interaction with students was underlined in research on faculty members' opinions and attitudes regarding online learning. Instructors

identified material competence and instructional design as important variables in online learning success. Similarly, professional and student training are required for online learning effectiveness Bell, B.S. & Fedeman, J.E. (2013)., According to the report, 31% of college students in the United States took at least one online course during the fall 2010 semester. The ambition of schools and universities to develop new money streams, increase access, and provide students greater schedule flexibility are the key motivations for the expansion of e-learning in the United States. However, as e-learning has grown in popularity, there has been ongoing discussion regarding its usefulness, as well as acknowledgment that a number of impediments to its widespread acceptance in higher education.

Freeze, R., Alshare, K., Lane, P., Wen, H., "IS Success Model in E-Learning Context Based on Students' Perceptions", 2010, presents an analysis of the success of e-Learning framed in a methodology intended to determine the capability of the process. The methodology used is intended to be independent of decisions on technologies and pedagogy, relying solely on an organization's ability to implement e-learning in a high-quality and sustainable manner. In its instructional design and execution, the success of every e-Learning course leads to greater student retention and acceptance. Alonso, F., Lopez, G., Manrique, D., & Vines, J. M. "An instructional model for web-based e-learning education with a blended learning process approach", 2005, recommended a web-based e-learning curriculum. The template of curriculum with an integrated approach to schooling (Alonso et al., 2005). They describe their model as a psycho-pedagogical education system focused on the structure of content, the numerous researches on psychology and social constructivism of information processing, and describes a mixed approach to the learning process" They stated that the intention of their model is to involve students with the material of e-learning to the degree that they get to understand topics they did not understand before." This will make them eager to practise and take steps and carry out new operations.

Zhu, X., states that Digital training is still in its early stages, and it is being shaped by constantly shifting technologies. To improve student learning, all online instructors must work more to blend teaching and technology. In a simple term, online discourse as a communication activity might be very helpful for students or learners in today's modern online learning environment by providing a space for information exchange and generating deeper thinking, but only if educators understand how, it might collaborate and also how learners know in the digital context. Khairan D. Rajab," The Effectiveness and Potential of E-Learning in War Zones: An Empirical Comparison of Face-to-Face and Online Education in Saudi Arabia.", 2018, The efficacy of online learning and conventional method of learning is contrasted in the Saudi Arabia's old overlooked background. This was achieved by reviewing the e-Learning experience of Najran University after conventional course distribution was halted by the institution because of continuing conflict between Saudi Arabia, the Arab Alliance, and insurgent groups from Yemen. The study also takes into account the possible advantages of e-learning in conflict zones, like the Najran southern frontier region of Saudi Arabia. The findings suggest that there is no statistical or realistic difference with regard to student success between online and face-to-face instruction. This paper also shows that online learning aims to improve the performance of higher education institutions to war-torn countries. E-Learning

provides students with a stable learning climate, forums for engagement and significantly, a professional education. This paper concluded to add to a body of scholarship in the Middle East on the feasibility and application of e-learning.

Bently, Y., Habte S., & Anjali, S, "Design and Evaluation of Student-Focused eLearning", 2010, addressed the use of technology in relation to how innovations are causing new instructional paradigms and models that contradict traditional assumptions and measures of efficiency. With the assistance of rising sophistication of information technology, these insights are becoming feasible. Although this research focused on e-Learning design and assessment in England, similar technical systems have also been developed in New Zealand, and For instance, Marshall's e-Learning Maturity Model Version 2.0 (2006). Zhu, X., states that Digital training has taken its baby steps, and is tuned by shifting technologies. To develop students learning skills, all online tutors must work more to blend teaching and technology. Simply describing Online learning is very useful for students or learners in this e-learning environment by creating room for exchange of information and produces in-depth thinking only if the learners clearly state and how learners know the digital content.

Parker, K., Lenhart, A., & Moore, K. (2011). The digital revolution and higher education: College presidents, public differ on value of online learning. Pew Research Center. This report is based on findings of value of online learning, prevalence of Online courses, Online students, Online learning future, digital textbooks, laptops and smartphones, college presidents and technology and college presidents and social networking Sher, A. (2009). Assessing the relationship of student-instructor and student-student interaction to student learning and satisfaction in Web-based Online Learning Environment. Journal of Interactive Online Learning. This study demonstrates the significance of student engagement in digitally eLearning. The association between interaction factors and student learning and satisfaction was investigated using regression analysis. Interactions between students and instructors, as well as student-student interactions, were determined to be essential sources to learning outcomes and fulfillment

### **Research Methodology**

A research design is the condition for collection and analysis of data in a manner that aims to integrate the different components of the study in a logical way ensuring the research problem. The research design is the conceptual structure within which the research is conducted. Research design includes the collection, measurement and analysis of data. This research work has primarily applied the empirical and descriptive research design. An empirical research design has been used to explore the student perception and faculties engagement on online teaching in the state universities of Tamil Nadu in the study. The descriptive research design describes the effectiveness of the E-learning process with the hypothetical assumptions. For initial stage of problem identification, the empirical research is used to identify and to study the fact on the research problem.

## Purpose of the Study

The study aims to analysis

- To identify the e-learning perception of digital natives
- To observe the student learning pattern
- To identify the preference of online materials for future references
- To analyze the challenges faced in online education.

## Sampling Design

The sample design refers to the technique of selecting sample respondents from the total population of state universities of Tamil Nadu and in this study, non-probability sampling technique is used and the researcher has chosen the sampling unit of the students and faculties for the study.

## Population of the Study

The analysis was carried out using the data collection through structured questionnaires in the form of Google forms. The respondents of the study were the under graduate, post graduate and the research scholars of various state university of Tamil Nadu. Further, the students from different academic fields like arts, science, commerce and humanities participated in the survey. This study utilized a quantitative design to obtain the opinions of the respondents on a random basis.

## Results and Findings

SPSS software is used as the analysis tool. Findings from the analysis of quantitative data is compiled from the primary data collected during the survey.

## Demographic Profile of Students

The current research work has presented that the demographic variables of the students of affiliated and autonomous colleges of state universities in Tamil Nadu. The demographic variables of the students are given below:

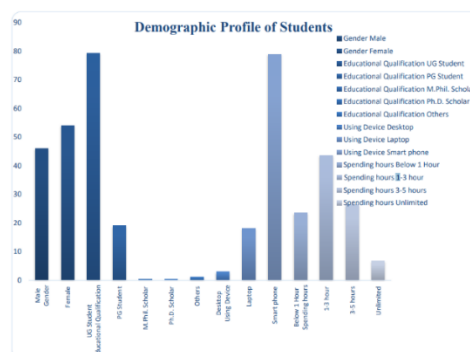


Fig 4.1. Demographic profile of the students

## Gender

The research work contains the majority of 641 (54.00%) female respondents followed by the 546 (46.00%) male respondents in the present study.

## Educational Qualification

Fig. 4.1 shows that the majority of 941 respondents (79.30%) have been doing UG degree followed by the 225 respondents (19.00%) under PG student category, 3 respondents (0.30%) under M.Phil. category, 4 respondents (0.30%) under Ph.D. category and 14 respondents (1.20%) under other educational category in the present study.

## Using Device

Figure 4.1. indicates that the majority of 937 students (78.90%) have been using smart phones for online class followed by 35 respondents (2.90%) belongs to desktop and 215 respondents (18.10%) belongs to laptop for online classes.

## Student Perception on Online Teaching and eLearning Process in State Universities Colleges (Autonomous & Affiliated)

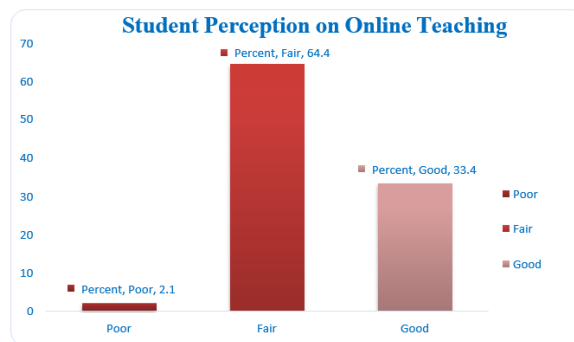


Fig. 4.2 Students Perception on Online Teaching and E-Learning Process

The researcher has studied the student's perception on online teaching in the present study. Figure 4.2 illustrates 2.1 percent (25) of respondents having poor perception, 64.4 percent of respondents (765) having fair perception and 33.40 percent of respondents (397) having good perception on online classes in the study. Hence, majority of the students have fair perception at moderate level in the present study.

## Perception on Online Teaching

The student's perception on online learning in state universities is given below:

Table 4.1  
Student Perception on Online Teaching

Perception	Percent
Poor	2.1
Fair	64.4
Good	33.4
Total	100.0

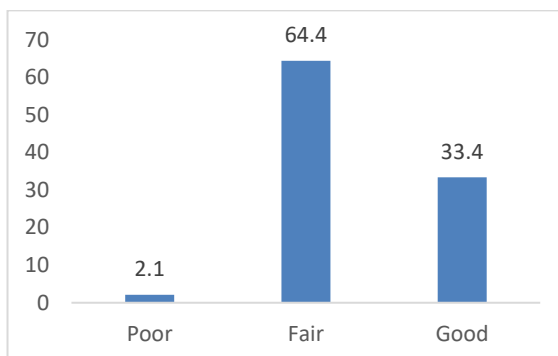


Fig 4.3. Teaching and E-Learning

### Process in the Study

The researcher has studied the student's perception on online teaching in the present study. The table 4.1 illustrates 2.1 percent (25) of respondents having poor perception, 64.4 percent of respondents (765) having fair perception and 33.40 percent of respondents (397) having good perception on online classes in the study. Hence, majority of the students have fair perception at moderate level in the present study.

### Learning Pattern

The study has shown that the preferred learning pattern

Table 4.2  
Student Learning Pattern

Learning Pattern	Mean
PDF document	4.23
E-Book	3.78
PPT	3.98
YouTube videos	3.99
Online Courses	3.91
Journals and Articles	3.73

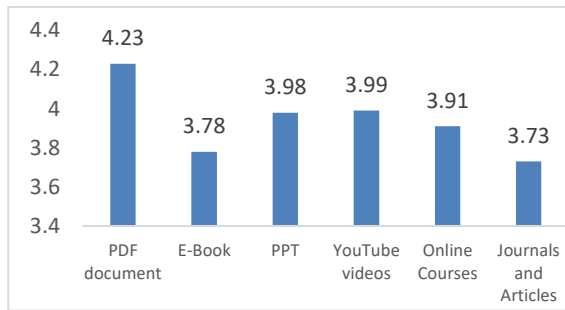


Fig 4.4. Learning Pattern Preference

Figure 4.4 reveals that the students preferred some learning pattern for the E-learning process in the present study. Primarily, the students have preferred PDF document (4.23) for the learning process and followed by the You Tube videos (3.99), PPT presentations (3.98), Online Courses (3.91), E-Books (3.78), journals and articles (3.73) in the present study.

**Reference Preference**

The study has been using more backup methods for revising their subjects with some techniques as follows:

Table 4.3  
Reference Preference

Reference	Mean
Take Screenshot	4.00
Take Notes	4.12
Save links	3.98
Download PPT	4.15
Only observe	3.76

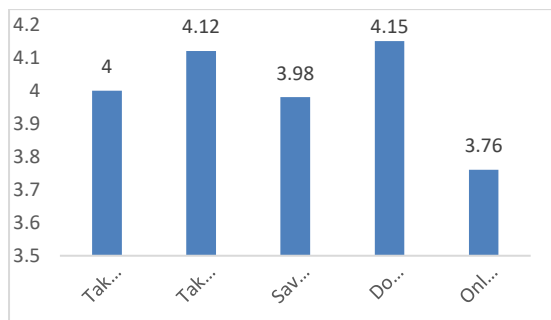


Fig. 4.5. Reference Preference

Fig 4.3. indicates that the majority of students have adopted the downloading the PPT presentations (4.15) followed by the backup methods like taking notes (4.12),



taking screenshots (4.00) and saving links (3.98) for E-learning process in this research work.

### Key Challenges

Table 4.4  
Key Challenges

Challenges	Mean
Network Issue	3.66
Facing problem Internet speed	3.62
Adapting unfamiliar Technology	3.22
Audio & Video	3.45

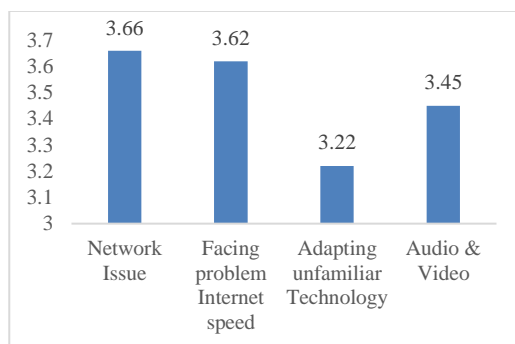


Fig 4.4. Challenges

Fig 4.4. represents that the issues of students connecting to online in the current study. Primarily, the students have faced the network issue during eLearning process (3.66) followed by the reasons like facing problem in internet speed (3.62), adapting unfamiliar technology (3.22), audio and video (3.45) in this research work.

### Analysis Of Variance (Anova) - Significant Changes Between Demographic Profile And Students' Perception On Online Teaching In State Universities Gender and Students' Perception

Table 4.5  
Descriptive Analysis of Gender and Students Perception

Gender	N	Mean Score	Std. Deviation	Range
Male	546	19.28	3.46	20.00
Female	641	19.42	3.55	20.00
<b>Total</b>	<b>1187</b>	<b>19.36</b>	<b>3.50</b>	<b>20.00</b>

The Table 4.5 shows that the mean score of female students (19.42) have higher perception with the range of 20.00 (SD=3.55) compared to the male students (19.28) with perception range of 20.00 (SD=3.46) in the present study. Hence, the female students have highly perceived with the E-learning process in their state universities in the study

### **Educational Qualification and Students' Perception**

Table 4.6  
Descriptive Analysis of Educational Qualification and Students Perception

<b>Educational Qualification</b>	<b>N</b>	<b>Mean Score</b>	<b>Std. Deviation</b>	<b>Range</b>
UG Student	941	19.27	3.48	20.00
PG Student	225	19.68	3.62	20.00
M.Phil. Scholar	3	15.67	2.08	4.00
Ph.D. Scholar	4	22.00	3.56	7.00
Others	14	20.29	2.43	9.00
<b>Total</b>	<b>1187</b>	<b>19.36</b>	<b>3.50</b>	<b>20.00</b>

Table 4.6 indicates that the mean score of Ph.D. scholars (22.00) have higher perception with the range of 7.00 (SD=3.56) followed by the other education group (20.29) with perception range of 9.00 (SD=2.43) in the present study. The PG students have perception (19.68) with the range of 20.00 (SD=3.62) and UG students have perception (19.27) with the range of 20.00 (SD=3.48). The M.Phil. scholars have low perception with the range of 20.00 (SD=2.08) in the present study. Hence, the Ph.D., scholars have higher perception on online teaching of affiliated and autonomous colleges of state universities in Tamil Nadu. This research measures the significant changes between the demographic profile and student perception on online learning in the study.

### **Conclusions**

In their light, the present study was conducted to analyze the impact and effectiveness of online teaching and e-learning and the study showed that both the faculty and the student community enjoyed the new way of digital learning. Awareness of the e-learning platform needs to be increased focusing on the student's requirement and the available platforms. More steps could be taken to have an understanding of the government initiatives and technical support. There is also a need to provide a proper and uninterrupted technical support which acts as a barrier in this savvy environment. Online mode of education in India is still at its early stage, therefore a clear knowledge on its e-resources, platforms, ease of use and technical availability will act as a boon for the learners and the teaching community. A small attempt towards this has been taken through this survey which could be further enhanced.

## Acknowledgement

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