Learners' Perception Towards the Shift from Offline to Online Pedagogy and Factors Affecting it

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Abstract—The paper provides an introduction to e-learning and the impact of its shift from offline to online pedagogy. On one side, e-learning has made access to numerous learning opportunities flexible in time. On the other side, it also impacts the student's learning process. This paper aims to find out the status of e-learning adaptation among students by understanding the impact of COVID scenario on e-learning adaptation, the impact of user's time, course structure, and edginess among students. This paper also studies if the cost-effectiveness does prevail or not with the current course design and if it can be applied to the virtual courses as well or not. This study discovers the possible outcomes through virtual learning and is affects the present mindset of a learner or not.

Keywords—e-learning, online learning, knowledge, shift, factors affecting e-learning, learners' perception, offline learning

1 Introduction

In the early days, Vedic and Buddhist education systems were followed, primarily teachers and students stayed together and received an education, sharing a deep understanding of education and culture. Education, an important sector, has been following a traditional pedagogy of face-to-face interacting learning process for ages, which has now been shifted to virtual platforms. This, in turn, has jeopardized the students' absorption of the learning process. The quick shift from the offline to online pedagogy system has confused the entire education system pouring many thoughts like- is the quality of the education being affected, is the attention which was paid in a direct meeting with students, possible virtually, is the absorption process while the increase in screen timing affects the student?

So, this pandemic has created uncertainty pouring all these doubts and questions and disturbing the exam cycle. There has been a more significant impact in the student internships, placements, decrease and increase of fee collection, also created an issue in managing the working capital. Several hiring decisions for the vacant positions have been halted, affecting the quality and excellence. This paradigm shift has disrupted

the mindset and learning cycle among friends as examinations aren't taken seriously as, access to devices and other technology is easily being provided, losing authenticity. However, there might also be a positive side due to the emerging digitalization trying to move towards future paperless education. Looking to the positive sides, Digital Education also allows students to access recordings of the classes for clarity. Many webinars are good practices for online teaching, which are rising and giving easy access to everyone, bringing eminent personalities and students on the same platform, engaging, and having live sessions.

On the other hand, misuse of the situation can also take place. The capacity of schools/colleges might be increased, compromising the students' quality. The exposure will be limited till the virtual screens. There will be no peer-peer learning and access to real-world scenarios. So, the brain will also be limited till that imagination of things which will be jeopardized till the theoretical part. The dedication and sincerity among students will be stopped within time. As already a lot of online content is available, which will be equal to the virtual deliveries being happening will impact the students who are more inclined towards offline classes. But as the pandemic forced the adaptation of Online classes through various virtual platforms, more focus should be on framing a more systematic way without compromising the future of coming generations.

This research aims to determine the possible future outcome of this shift and how that will affect a student's learning and absorption. Also, the current course design can apply to the virtual courses as well. This study aims to discover the possible outcomes through virtual learning, how this affects the present mindset of a learner, and how much this affects or creates mental stress and anxiety among students.

2 Literature review

The pandemic drastically forced the shifting of the learning process and educators from offline to online [1]. Online e-Learning has become an alternative to conventional face-to-face training. Numerous organizations execute e-Learning to address understudies' issues, particularly those of non-conventional ones. This online education is being a paradigm of modern time. The pandemic situation has made many institutions adopt this E-learning process trying to meet students' satisfaction with technology learning [2]. Different educational institutions have suspended physical instruction and have adopted e-learning [1]. Students are being anxious about the sudden change in the learning environment and without a structured course to be adopted online [3]. According to the evaluation of the few studies, it is precarious to return to typical traditional educating pedagogy at any point shortly as pandemics have restricted physical gatherings and led to strict social distancing, which might affect learning opportunities. Even educational units are battling to find alternatives to manage this difficult time. These conditions make a terrible call to look after from falling off our system, staff, workers, and communities [1].

Satisfaction among students and persistence has been taken as important factor for determining the success of online pedagogy. Mentoring from the instructor is important

to factor in learner's satisfaction [4]. Training instructors with different strategies and approaches to teaching online is also important; this will increase the knowledge and help frame and design online courses [5]. This transition needs to help the instructor also in both training and designing courses to be taken virtually [6]. The use of online learning and usage of technology might improve the quality of teaching through exposure to e-books, and other resources educational services as well as enabling remote evaluation, exchange, and collaboration between students [7]. Online program has been shown to be easy and convenient where students fail to understand the idea of accessing work to completing the different work are two different things [8].

2.1 Different models for evaluating the satisfaction among students and teachers

Various studies have been done to understand the absorption, fulfilment, and involving process which comes under personal, behaviour, and environment. According to one of the models and considering User fulfilment, TAM (Technology Acceptance Model) was proposed by [9]. The model under perceived ease, concludes that same technological product will need no effort and would be easy to use, whereas user and perceived usefulness means to what extent using a software system would make their work easy task [7].

Some researches prove virtual learning is more efficient than physical. The study by [10] divided two sections into exposure towards to physical class and virtual e-learning and found the latter to be effective. Whereas another study claims three factors attract the process of education; virtual learning has become complicated to few and has been a boom to few with full-time jobs [2]. Online evaluation seems good to take into practice for higher education and would be continued by adopting the new change. [11]. Since e-learning is completely digitalized, the adaptation of a new learning atmosphere becomes more complicated. Learners/users/students perceived satisfaction or perceived fulfilment with the digitalization-based virtual learning will determine whether they will be useful with this system and continue. One of the factors to be considered in the course of traditional methods can be implemented in e-learning, and it's necessary that the course need to be designed in a way that quality isn't hampered. In addition to this, peer learning, self-learning, and screen time issues should be designed strategically that utilization should be the utmost and enable students to monitor their learning and absorption during the e-learning [2]. Through virtual learning individual motivation, and the environment they are in makes them adopt e-learning [12]. A few studies raise questions like is it worth attending online classes? Will it be successful in delivering like the real-world lecture course [13]. The application of data visualization technology to update teaching mode, teaching content, teaching concept, teaching level is discussed [14].

2.2 Factors affecting e-learning

Flexibility is considered as one of the factors of e-learning satisfaction. At one point, virtual learning is flexible, allowing learners to choose their time and comfort. On the

opposite side, the legitimate check should be finished by the organization, playing the role with efficiency providing all the functionalities are easily accessible or not handling the software and tech parts. Appropriate and continuous loadings and usefulness of programs and software and effectively open conditions would upgrade the virtual learning satisfaction [2]. Online classes had the option to oversee same as virtual and besides giving new information development [15]. As indicated by examining student's uneasiness or edginess likewise hampers their contentment. New strategies and innovations by the educator and causing them to comprehend will drag the interest of new students or non-experienced ones and keep the engagement on. Moreover, it is stated instructor's inclination toward the students and their teaching approach motivates and positively impacts learners [2].

The hip, also known as high-impact practices, has been introduced to give the students a pinch of the virtual environment in terms of self-regulation, self-direction, and online learning self-efficacy [16]. Other studies looking for offline/online programming stated online to be better as a comparison to physical but was threw with many questions like till what extent will this be connected with programmers or digitalization and compared within a time-shared computing facilities where online was automatically programmed and offline had to monitored time to time.

Therefore, it feels online teaching has become a necessity moreover during this pandemic time. And have made the different institutions adopt different pedagogy systems but maintaining the quality would be the question at the end. Innovative, adaptable, and easily accessible solutions can help to deal with the current pandemic [1]. Few studies state time has been saved by online learning reducing the travel time and utilizing it on another side [17]. Media used in learning can also be used in such a way that the instructor brings out creative and innovative ways to build the enthusiasm and remove the boredom among students [18]. Students enroll with the hope of grasping and absorbing knowledge with practical use. The expectation is high regarding quality and rate of return, so it's important to satisfy them and help foster their persistence and academic success [19]. Also, this pandemic has reduced peer learning. Support from their loved ones and friends also plays an important role during this situation, where studies have shown increased anxiety cases [20].

3 Objectives of research

This research focuses on the Indian students from different demographics who are currently pursuing online classes and tries to analyze the absorption level from the perception of the learner and factors accountable for this paradigm shift from offline to online. The study is to understand the psychology of learners, their willingness to learn, and their acceptance of online learning. The research focuses to Understand the learner's perception towards the e-learning, Impact from the shift of offline to online platforms, their learning adaptability, mental edginess, screen timing exposure, and holding the attentiveness and what would help in the absorption come learning in the users.

4 Hypothesis and research model

The paper states that various factors have led to e-learning adoption.

4.1 Ho: COVID scenario led to an increase in the adoption of E-learning

Along with the study, it was hypothesized. The outspread of contagious diseases has led to an increase in digitalization, further increasing the absorption of e-learning also; in a pandemic or lockdown-like situation, people would prefer Online classes over offline classes.

4.2 Ho: E-learning saves a lot of time for users

The adoption of e-learning has saved a lot of time in terms of traveling. E-learning has added flexibility into your life, working and studying according to your comfort zone. It is time-consuming to use the distance learning tools and switch different platforms for activities (video calls, learning applications, etc.)

4.3 Ho: E-learning is directly proportional to cost-effectiveness

It was hypothesized whether decreasing the fee structure would lead to more adaptation of e-learning courses or will students prefer doing a regular course over a distance degree? Or has e-learning forced us to get be more dependent on digital gadgets than earlier?

4.4 Ho: E-learning has increased edginess/ anxiety among student

It was hypothesized online studies don't allow you to focus majorly and tend to lose track, and Online studies have left us with no me time and are loaded with works and create unnecessary edginess.

4.5 Ho: E-learning is directly proportional to user satisfaction

E-learning is more engaging and interesting, or it led to more screen time which has reduced my learning adaptiveness. Online learning has helped me to study concepts using different strategies activities, making it enjoyable.

4.6 Ho: E-learning has a better course structure

It was hypothesized are learners satisfied with the way the course is structured in the online sessions, or do they feel the course needs to be modified according to online learning, or do we need individual mentoring, assessment, or motivation to feel confident studying online.

5 Research methodology

Data collection was done from students studying in various institutes all over the country, i.e., India, and pursuing different degrees through online classes through a well-structured questionnaire to understand the exact scenario of e-learning. Sample surveys were done by around 217 students understanding the scenario. The questionnaire was divided into two segments. The first seek information regarding the social demographic characteristics like age, gender, educational level, location. This helped us to understand in picking students from different states/cities of India with different backgrounds. In the second section of the questionnaire, questions were asked on their various factors like satisfaction, persistence, mental edginess, social factor, individual factor, and flexibility. This was asked to understand the psychology of the respondents. The question started from accumulating the general details of the respondent and moving ahead with the negative-positive impact of e-learning. The dependability and the legitimacy of this research were found out by utilizing the Confirmatory Factor Analysis using SPSS AMOS. A Likert scale from 1 to 5 is utilized for the estimation of each factor.

6 Data analysis technique

6.1 Descriptive analysis

Information gathering in this study is done by arranging individuals of different age groups and from different backgrounds gathered and bought it down into basic and simple structure and are unique and real. It additionally assisted in the cleaning of information and exception.

6.2 Statistic inferential analysis

This analysis is used in a study to test the planned examination theories (hypothesis) and examine the results based on the analysis. SEM (Structural Equation Modelling) was utilized for testing the hypothesis using the SPSS Analysis of moment structure, i.e., AMOS programming. AMOS provides plenty of quantifiable techniques that perform. that performs coordinated testing of association among the chosen set of variables. Multiple ward variables create coordinated models explained at any rate by one independent factor forming a multifaceted model structure. In addition, ward variable together represents themselves as a free factor for other progressive connections. To perform the goodness of fit assessment, the goodness of fit index and respective cutoff values are presented in Table 1.

Table 1. Goodness of fit value

The Goodness of Fit Index	Cut off Value	Indicates
X2 Chi-Square Value	Preferred to be a small value	Bad Fit
X2/DF	≤2 ≤5	Fit Reasonable
GFI	≥ 0.90 0.80 ≤ GFI ≤ 0.90	Good Fit Marginal Fit
RMSEA	≥ 0.05 0.05 ≤ RMSEA ≤ 0.08	Good fit Marginal fit
AGFI	≥ 0.90 0.80 ≤ AGFI ≤ 0.90	Good fit Marginal fit
TLI	≥ 0.90 0.80 ≤ TLI ≤ 0.90	Good fit Marginal fit
CFI	≤ 0.90	Good fit

7 Results and discussions

The questionnaire was planned using the continuous thought process and learning the respondents go through the current situation of online learning and understand the positive and negative judgments on it. Characteristics of the respondents can be found in Table 2.

Table 2. Sample characteristics

Age	
15–20	10.1%
20–25	70.6%
25–30	19.3%
Gender	
Male	51.8%
Female	48.2%
Education	
Higher education	5.5%
Under graduation	29.8%
Post-graduation	64.7%
Location	
Central	8.3%
East	11.9%
West	24.6%
North	35.4%
South	19.8%

The measurement model shown in Figure 1 mentions the coefficient estimated and the error variances for the model for each variable.

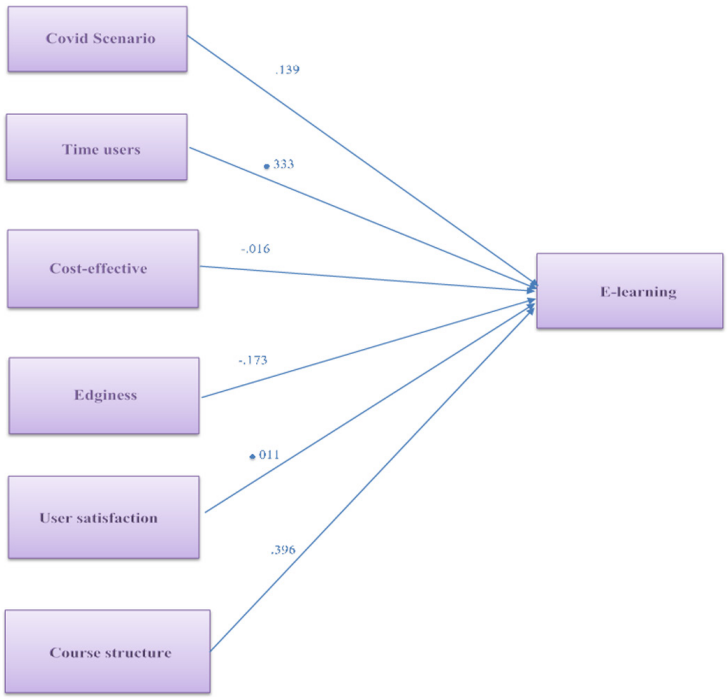

Fig. 1. Measurement model

Running the analysis in the SEM, the software-generated output is significant with Chi-square at 13.647, with probability level = 0.034. The endogenous variable in the SEM was E-learning, whereas covid scenario, time users, cost-effective, edginess, user satisfaction, course structure were considered as exogenous variables. Other fit indices test results are summarized in Table 3. To see if the model is proper for the goodness of fit record this assessment was done to check the sensibility of the model. For the characterized framework used in the examinations to be appropriate for the explanation and to meet the measures, this evaluation was performed.

Table 3. Model viability test results

The Goodness of Fit Index	Criteria	Outcome of Analysis	Model Assessment
Chi-Square	Expected to be low; χ^2; df: 988	8.013	Adequate
Probability	> 0.05	0.034	Marginal
GFI	> 0.90	0.982	Adequate
AGFI	> 0.90	0.918	Adequate
TLI	> 0.95	0.902	Marginal
CFI	> 0.95	0.972	Adequate
CMIN/DF	2 – 5	2.274	Adequate
RMSEA	< 0.08	0.077	Adequate

Table 3 informs about the aftereffect of examination testing the model fit decency. The subsequent section shows the standard worth measures needed to attain a good score in an assessment, following the third section showing the results of the examination. Finding the connection among different variables, this exploration study analyzed using P-value. This investigation aims to provide information on the quality of the relationship of each variable taken for this research. The SEM results are mentioned in Table 4.

Table 4. Structural equation modelling result

Hypotheses No.	Antecedent	Variable	Estimate	S.E.	P	Decision
1	E-learning	Covid Scenario	0.139	0.119	0.24	Reject
2	E-learning	Time users	0.333	0.115	0.004	Support
3	E-learning	Cost-effective	–0.016	0.115	0.892	Reject
4	E-learning	Edginess	–0.173	0.111	0.118	Reject
5	E-learning	User satisfaction	0.011	0.125	0.928	Reject
6	E-learning	Course structure	0.396	0.128	0.002	Support

Notes: Significance Level less than 0.050 is rejected.

Table 4 analyses the estimation of the p-value, indicating the essential estimation of acknowledgment and rejection of the hypothesis. The analysis of P-value if greater than 0.05 that the two variables impact on each other is measurably unimportant.

The covid scenario doesn't show a considerable effect on e-learning. The relationship doesn't show to be related as the P-value being insignificant. Therefore, we do not support our hypotheses, i.e.,

Covid scenario led to an increase in the adoption of e-learning. This can be stated not necessarily covid scenario is responsible for the adoption of e-learning.

Time users have a considerable effect on e-learning. The relationship shows a positive effect among the two. As the P-value is significant, we support our second hypothesis, i.e., E-learning saves a lot of time for users.

Cost-effective doesn't show a considerable effect on e-learning. The relationship shows a minute negative effect. The P-value is insignificant. We do not support our third hypothesis, i.e., E-learning is directly proportional to cost-effectiveness.

Edginess doesn't show any considerable effect on e-learning. The relationship shows a minute negative effect. The P-value is being insignificant; therefore, we do not support our fourth hypothesis, i.e., E-learning has increased edginess/ anxiety among students.

User satisfaction doesn't show any considerable effect on e-learning. The P-value being insignificant, we do not support our fifth hypothesis, i.e., E-learning is directly proportional to user's satisfaction.

The course structure has a considerable effect on e-learning. The relationship shows a positive effect among the two variables. The P-value is being significant; therefore, we support our sixth hypothesis, i.e., E-learning has a better course structure.

8 Conclusion

The goal of this paper is to understand the perception of Indian students from different demographics who are currently pursuing online classes and tries to analyze the absorption level from the perception of the learner and factors accountable for this paradigm shift from offline to online. Several factors were taken in regard to understanding the current scenario being faced by the students. This paper considered all factors and stated a few hypotheses on the basis of which result stated there wasn't much shift in the psychological behavior of students. It was time-saving and conducted according to their convenience. The research paper states adoption of e-learning among students hasn't disturbed their study pattern to that extent. [21] also states that students were able regular and were able to create individual study programs due to mobile learning technologies. Time users and course structure have played an important role in e-learning. The study says users' time has been saved a lot in studying online, which shows a positive impact also, the course structure isn't required to be changed much, and adapting the same pattern isn't showing much difficulty among students which is a contrast with [22].

There is ample scope for future research to match the level of perceptions among students practicing online education worldwide, their experience pre- and post-pandemic and also with time have their learning adaptability, mental edginess, screen timing exposure have been impacted and what have been changed in a while and how have it affected the absorption come learning in the users.

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