AN EMPIRICAL ANALYSIS OF FACTORS INFUENCING THE STUDENTS PERCEPTION TOWARDS E-LEARNING AMID COVID-19 IN POLLACHI TALUK

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Abstract

The COVID-19 outbreak has had a significant impact on the global educational system; it forced the closure of educational facilities, which had a negative impact on student fraternities everywhere. Because of its contagiousness, COVID-19 required containment and imposed isolation, which significantly hampered teacher-student relationships. Computer-based learning has become the closest replacement for offline instruction in the absence of traditional classroom instruction and one-on-one interaction. In light of this, it is important to look at how students perceive and are prepared for the online learning system during the ongoing COVID-19 pandemic. From the total population of Pollachi taluk 345 arts, engineering, and management students from Bharathiar University and Anna University were surveyed online for their opinions as part of the research. From June to August 2020, this research study was carried out. It highlight students' favorable perceptions of e-learning and the key factors that influence its acceptance as a new form of instruction. Additionally, it has empirically proven the value of online education during the COVID-19 crisis. In fact, social media may help to further enhance learning outcomes as e-learning emerges as a new method of enhancing the learning process. It will help educational institutions and policy makers advance this online learning process in a more effective way. The researcher has chosen reliability and factor analysis to organize factors.

Keywords: COVID-19, teacher-student relationships, Pollachi taluk, perceptions of e-learning, online education, reliability and factor analysis

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INTRODUCTION

The global education system is increasingly incorporating online learning . Anyone can now easily access education due to online channels. India's education industry has continually expanded. Higher education has historically been one of the largest industries in India. Although online and distance learning have been around for a while, online learning has only recently been considered as a viable alternative to the traditional face-to-face classroom setting in Indian universities and colleges. The face-to-face classroom approach has always been used most frequently in the Indian educational system. The main obstacles to the adoption of online educational channels have been the familiarity and simplicity of using offline methods and the lack of a need for them. However, the educational boards have mandated the delivery of online courses at the college and university level in the wake of the current COVID-19 pandemic situation. Covid-19 has significantly changed the educational system around the world, not just in India. Universities all over the world and in India have suspended physical classrooms in favor of virtual classes. In

India, the development of online education is still in its infancy. While most private universities in India have experienced both positives and negatives as a result of this transition, the government colleges and universities are still adjusting. While technology makes life more convenient and accessible, it can also have its drawbacks, particularly in India where many students struggle to get online. This in turn causes problems with attendance and participation in online sessions, which makes it difficult to adapt to using online educational channels.The present study assesses students perception about online learning In Pollachi taluk.

REVIEW OF LITERATURE:

According to Nur Agung (2020), the COVID-19 pandemic has compelled the Indonesian government, through its Ministry of Education and Culture, to put policies into place that shift traditional classrooms to online classrooms. The current study analyzes survey data on students' perceptions of their online learning during the pandemic. It is a collective case study. At Pamane Talino College of Education's STKIP Pamane Talino, there were 66 participants in the English Language Education Study Program. Their opinions of their virtual classroom were documented by a survey. The perceptions of students' participation, accessibility, material and assignment delivery, and e-learning platform use have been recorded. Tables and narrative summaries of the findings were then created. According to the study, there are three main challenges to conducting online learning in the English Language Education Study Program at STKIP Pamane Talino: the first is the availability and sustainability of an internet connection; the second is the accessibility of the teaching materials; and the third is the compatibility of tools to access the materials. According to the findings of this study, accessibility is still the main variable influencing how well online learning works. In order to increase student participation, online learning for the English Language Education Study Program at STKIP Pamane Talino—and possibly Indonesia in general needs some more user-friendly platforms. This is especially important for students who live in remote areas without access to other support systems or reliable internet.

Nambiar, Deepika (2020) surveyed teachers and students online about their opinions and experiences with online courses. In response to the current pandemic, the Indian educational system recently implemented a change that involves offering classes online. The perceptions and worries of college and university teachers and students regarding taking online classes that have been made required in the wake of COVID19 are thus described by this survey. 407 students and 70 teachers from colleges and universities in Bangalore city made up the sample. The purpose of the data collection was to use an online survey method. The results indicate that the following factors are crucial for teacher and student satisfaction with online learning: timely and effective student-professor communication, accessibility to technical support, well-structured online course modules, and adaptations to allow for the delivery of practical lessons.

The pandemic and subsequent "lockdowns," according to Desireé J. Cranfield (2021), fundamentally altered the educational climate in higher education institutions. Prior to COVID-19, traditional universities had a variety of options for pedagogical practice, including different ways to deliver instruction. Overnight, traditional higher education institutions were left with only one method of delivery. The conversion of all services to digital platforms ushered in a time of "emergency eLearning." It's still unclear how much of an impact this abrupt switch to digital platforms will have on all student cohorts. It was inevitable that there would be some disruption to the typical educational experience of students, particularly for those who attended traditional universities. Additionally, this disruption varied according to the nation in which the University was located and its lockdown procedures. The perceptions of higher education students toward emergency eLearning during the COVID-19 pandemic were investigated and explored in this quantitative, comparative, international research project. Four factors were used to evaluate the experiences of students at universities in three different countries: (1) the home learning environment, (2) engagement, (3) participation preference, and (4) the impact on learning skills. The study found that the student experiences at the participating universities varied significantly. The "home learning environment," "engagement," and "perception of impact on learning skills" were the areas with the greatest differences. The different economic and digital developments of the three countries under study—South Africa, Wales, and Hungary—can be blamed for the variations in the "home learning environment." Last but not least, varying cultural backgrounds imply a discernible variation in student engagement, participation, and learning abilities.

METHODOLOGY AND TOOLS ADOPTED

Based on empirical observations and a thorough survey, the current research is a descriptive and analytical study. We gathered, examined, and interpreted both primary and secondary data. Reliability analysis and factor analysis are used to evaluate the perception of online learning. The Sample Design is based on convenient sampling and it is given to 345 Arts, Engineering, and Management students, under Bharathiar University and Anna University located in the Pollachi taluk of Tamilnadu.

RELIABILITY ANALYSIS

The Cronbach's coefficient alpha was used to determine the reliability of the scales used in this study. The normal range for Cronbach's alpha reliability coefficient is 0 to 1. The coefficient, however, actually has no lower bound. The internal consistency of the scale's items is inversely correlated with how close Cronbach's alpha coefficient is to 1.0. The coefficient alpha values were higher than the required minimum of.70. It has given reliable internal consistency estimates.

- The formula is as follows:

$$\alpha = \frac{kr}{1+(k-1)r}$$

- K is the number of items in the scale.
- R is the average correlation pairs of items.
- As the number of items in the scale (k) increase, the value of alpha becomes larger.
- If the inter-correlation between items is large, the corresponding alpha will also be larger.

TABLE 1.1

RELIABILITY FOR FACTORS RELATED TO STUDENT PERCEPTION TOWARDS E-LERNING AMID COVID-19

S.NO.	ITEMS	SCALE MEAN IF ITEM DELETED	CRONBACH'S ALPHA IF ITEM DELETED
1	E-learning allows learning at any place	123.86	0.888
2	It fosters active learning	124.08	0.887
3	It provides opportunity to interact with experts in the concerned field	124.25	0.887
4	It facilitates interest in learning	124.25	0.885
5	It provides subject related multi-media materials	124.34	0.884
6	It is helpful to prepare my assignments	124.31	0.884
7	It is a complete waste of time and money	124.30	0.884
8	I can participate in online discussions	124.18	0.886
9	I can involve in online seminars	124.15	0.885

10	E-learning is helpful to upgrade industrial trends from remote location	124.19	0.892
11	It has online library facilities	124.15	0.892
12	It provides audio/video conferencing for collaborative projects and learning	124.08	0.892
13	It reduces learning time and increases efficiency	124.08	0.887
14	It provides virtual classroom environment	124.10	0.887
15	It assists in the development of the study skills	123.86	0.888
16	It provides qualitative and quantitative information	124.08	0.887
17	It gives opportunity to pursue online courses	124.25	0.887
18	I can learn at my own pace	124.25	0.885
19	E-learning helps to reduce overall training cost and raid delivery of contents from multiple sources	124.34	0.884
20	It increases the probability of getting desired job	124.31	0.884
	MEAN		124.16
	VARIANCE		166.29
	STD. DEVIATION		12.89
	CRONBACH'S ALPHA		0.878
	NO. OF ITEMS		20

It demonstrates that the twenty measurement scale items used to assess students' attitudes toward e-learning in the context of Covid-19 are all trustworthy, according to the Cronbach alpha coefficient of 0.878. It is higher than the criterion value of 0.70. It offered reliable internal consistency estimates and coefficient alpha values for all the constructs that ranged from 0.884 to 0.892. It proves that the scales employed in this study were accurate. It is evident that the items on the aforementioned scale are consistent with one another and provide a valid indicator of the factors influencing students' perceptions of e-learning in the context of Covid-19, allowing for factor analysis to proceed.

DIMENSIONALITY OF THE MULTI-SCALE ITEMS (FACTOR ANALYSIS)

Factor analysis is a set of techniques that breaks down the number of variables into fewer factors that more economically explain most of the original data. Although a factor analysis's output can have a subjective interpretation, the process frequently sheds light on important psychographic variables and makes efficient use of data collection efforts. The subjective component of factor analysis is minimized by randomly dividing the sample into two and isolating the factors from each portion. If similar outcomes occur, the analysis is taken to be trustworthy or stable.

TABLE No.- 1.2 KMO AND BARTLETT'S TEST FOR FACTORS RELATED TO STUDENT PERCEPTION TOWARDS E-LERNING AMID COVID-19

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	**0.743**
Bartlett's Test of Sphericity: Approx. Chi-Square	**2217.12**
Sig	**0.000****
S/NS	**S**

**P<0.001 *P<0.05 S-Significant

Two tests, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and the Bartlett's Test of Sphericity, have been used to assess the significance of the relationship between the variables in the aforementioned Table 1.2. The test statistics value is 0.743 according to the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, indicating that the factor analysis for the chosen variable is found to be suitable or good for the data. The value of test statistics and the corresponding significance level are used in Bartlett's test of sphericity to determine whether the data are statistically significant or not. It demonstrates the strong correlation between variables.

TABLE No-1.3 EIGEN VALUES AND PROPORTION OF TOTAL VARIANCE OF EACH UNDERLYING FACTORS RELATED STUDENT PERCEPTION TOWARDS E-LERNING AMID COVID-19

component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.653	26.092	26.092	3.653	26.092	26.092	2.305	16.465	16.465
2	1.906	13.613	39.705	1.906	13.613	39.705	1.892	13.514	29.979
3	1.203	8.591	48.295	1.203	8.591	48.295	1.872	13.374	43.352
4	1.124	8.029	56.325	1.124	8.029	56.325	1.816	12.972	56.325

Extraction Method: Principal Component Analysis

The results of the factor analysis presented in the table 1.3 factors related to Student Perception Towards E-Learning Amid Covid-19 , have revealed that there are twenty factors that had Eigen value exceeding “one”. Among those four factors, the first factor accounted for 26.09 percent of the variance, the second 13.61 percent, the third factor 8.59 percent and the fourth factor 8.029 per cent of the variance in the data set. The first four factors are the final factors solution and they all together represent 56.325 percent of the total variance in the scale items measuring the factors related to to Student Perception Towards E-Learning Amid Covid-19**.**

TABLE No. 1.4

ROTATED COMPONENT MATRIX FOR FACTORS RELATED to STUDENT PERCEPTION TOWARDS E-LEARNING AMID COVID-19

Variable code	Component			
	I	II	III	IV
x10	**.757**	.232	.063	.041
x12	**.720**	.210	.042	-.032
x8	**.651**	-.151	.372	-.005
X9	**.599**	.159	.302	.111
X16	**.580**	-.096	.234	.0673
X19	**.550**	.059	.219	.042
x13	.166	**.752**	.119	-.096
X11	.458	**.647**	-.035	.059
X4	.029	**.600**	.294	.197
X14	.412	**.590**	.209	-.283
X15	.128	**.560**	.159	.317
X20	.115	**.531**	.116	.049
X6	.143	.090	**.741**	.072
X7	.157	.315	**.695**	-.180
X5	.114	.046	**.643**	.211
X2	.054	.062	.111	**.796**
X1	.111	-.180	-.017	**.786**
x3	-.287	.393	.180	**.579**
X18	-.156	.377	-.056	**.554**
X17	.177	.318	.116	**.512**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 12 iterations.

Table 1.4 represents the Rotated Component Matrix, which is an important output of principal component analysis. The coefficients are the factor loadings which represents the correlation between the factors and the twenty variables (X_1 to X_{20}). From the above factor matrix it is found that coefficients for factor-I have high absolute correlations with variable X_{10}(E-learning is helpful to upgrade industrial trends from remote location) ,X_{12}(It provides audio/video conferencing for collaborative projects and learning) , X_8 (I can participate in online discussions) and X_9 (I can involve in online seminars) X16(It provides qualitative and quantitative information),X19(E-learning helps to reduce overall training cost and raid delivery of contents from multiple sources)that is, 0.757, 0.720, 0.651 ,0.599 ,.580 and .550 respectively.

Similarly factor-II has high absolute correlation with variable X_{13}(It reduces learning time and increases efficiency), X_{11} (It has online library facilities), X_4 (It facilitates interest in learning) and X_{14} (It provides virtual classroom environment),X15(It assists in the development of the study skills),X20(It increases the probability of getting desired job) that is, 0.752, 0.647, 0.600, and 0.590 ,.560 and .531 respectively.

Next, factor III has high absolute correlation with variable X_6(It is helpful to prepare my assignments), X_7(It is a complete waste of time and money) and X_5 (It provides subject related multi-media materials) , that is, 0.741,0.695 and 0.643 respectively.

Factor-IV has high absolute correlation with variable X_2(It fosters active learning), X_1(E-learning allows learning at any place) and X_3(It provides opportunity to interact with experts in the concerned field), x18(I can learn at my own pace),x17(It gives opportunity to pursue online courses) that is, 0.796, 0.786 ,0.579 ,0.554 and 0.519 respectively. For example in this study, factor one is correlated with SIX variable out of the TWENTY variables with absolute value of factor loading greater than or equal to 0.5. In such a complex matrix it is difficult to interpret the factor. So we proceed to compute the rotated factor matrix.

TABLE No 1.5

Component Transformation Matrix

Component	1	2	3	4
1	.656	.540	.523	.063
2	-.261	-.035	.253	.931
3	.697	-.621	-.263	.243
4	.123	.567	-.770	.265

The factor correlation matrix is shown in the above table. The diagonal elements in the factor correlation matrix will be 1s and off diagonal elements will be 0s if the factors are uncorrelated with one another. Since the matrix was rotated using Varimax, all other variables—aside from a few—are discovered to have, if not zero correlations, then at least low correlations. Thus, the data's TWENTY variables were condensed into four component factors.

TABLE 1.6

SHOWING THE FACTORS RELATED STUDENT PERCEPTION TOWARDS E-LEARNING AMID COVID-19

x10	E-learning is helpful to upgrade industrial trends from remote location	0.57%	Factor I
x12	It provides audio/video conferencing for collaborative projects and learning	0.52%	
x8	I can participate in online discussions	0.42%	
X9	I can involve in online seminars	0.41%	
X16	It provides qualitative and quantitative information	0.37%	

X19	E-learning helps to reduce overall training cost and raid delivery of contents from multiple sources	0.33%	
x13	It reduces learning time and increases efficiency	0.57%	Factor II
X11	It has online library facilities	0.42%	
X4	It facilitates interest in learning	0.41%	
X14	It provides virtual classroom environment	0.38%	
X15	It assists in the development of the study skills	0.35%	
X20	It increases the probability of getting desired job	0.29%	
X6	It is helpful to prepare my assignments	0.55%	Factor III
X7	It is a complete waste of time and money	0.48%	
X5	It provides subject related multi-media materials	0.41%	
X2	It fosters active learning	0.63%	Factor IV
X1	E-learning allows learning at any place	0.62%	
x3	It provides opportunity to interact with experts in the concerned field	0.45%	
X18	I can learn at my own pace	0.40%	
X17	It gives opportunity to pursue online courses	0.35%	

CONCLUSION

As a result, the twenty variables in the data were reduced to four component factors, each of which can be identified as described above. The opinion that has the most sway is that e-learning is helpful for upgrading industrial trends from a distance, followed by The level of student comfort with online class design, structure, interaction between students and faculty, the caliber and quantity of course material, technical support, and general experience with online class delivery have an impact on the overall teaching and learning experience and determine whether or not online education will be successful in the long run. Thus, in order to increase the adoption of online channels by students across all disciplines, awareness must be raised, with a focus on the convenience and accessibility aspects.

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