
E-LEARNING IN EDUCATION- AN INSIGHT INTO THE CHALLENGES FACED BY THE LEARNERS

Ms. Anumol M. V¹, Dr. Ranjith Somasundaran Chakkambath², Bhama Arun³

^{1,2}Asst Professor, Amity Global Business School Kochi, Ernakulam,682035, India

³MBA student, Amity Global Business School Kochi, Ernakulam,682035, India

ABSTRACT

The India e-learning industry is primarily being driven by the widespread use of online training programmes in the business sector and the increasing prevalence of wireless communication technology. E-learning enables learners to study at their own pace and schedule, connects them with educators and peers worldwide, and broadens their perspectives. This research aims to investigate the association of gender with selection of a particular course as major and also identify the factors that contribute as challenges to E-learning in India. The target population was E-learning aspirants from across Kerala, India. A study with a sample size of 150 students aimed to understand the impact of E-Learning on education. Chi-square Test and Exploratory factor analysis was done as part of the investigation to arrive at conclusive results.

Keywords: E-learning, Education, Exploratory Factor analysis, Learners, Challenges

1. INTRODUCTION

The concept of eLearning has its roots in computer-based learning, which emerged in the 1960s and 1970s (Johnson, 2020). The University of Illinois introduced the PLATO system in 1960, providing interactive coursework through computer terminals (Smith et al., 2019). The development of personal computers and the internet in the 1980s and 1990s shaped eLearning as we know it today. The Electronic University Network, launched in 1995, offered online courses to students in multiple countries (Brown, 2018). E-Learning, or electronic learning, has transformed education and training by providing accessibility, flexibility, cost-effectiveness, personalization, engagement, and globalization (Johnson, 2020). E-Learning is efficient in updating workers on new information and can provide real-time, just-in-time knowledge (Smith et al., 2019).

The 2000s witnessed the rise of learning management systems (LMS) like Blackboard and Moodle, enabling educators to manage online courses and deliver content (Jones, 2016). This era also marked the growth of Massive Open Online Courses (MOOCs), expanding access to higher education globally (Smith, 2018).

Presently, eLearning has become an indispensable component of education and training, with various tools and technologies available (Thomas, 2022). These include video conferencing, online collaboration tools, gamification, and adaptive learning technology, facilitating personalized, engaging, and interactive learning experiences (White et al., 2021).

The history of eLearning demonstrates the transformative potential of technology in making education and training more accessible, flexible, and engaging for learners of all backgrounds and ages. Ongoing eLearning trends emphasize personalized and interactive learning experiences that leverage the latest tools and technologies (Davis, 2019).

2. PURPOSE OF THE STUDY

E-learning can pose several challenges for students, including insufficient or unstable internet connectivity, inadequate computer labs, lack of computers/laptops, and technical problems. Other challenges include difficulty in interacting with instructors and classmates, isolation, lack of motivation, equipment-related challenges, distractions, time management challenges, barriers to learning, difficulty in understanding the learning material, and administrative issues.

The purpose of this research is to investigate the following areas related to E-learning:

- To understand what are the factors that contribute as challenges the usage of E-Learning.
- To understand the impact of e-learning in education.

The findings of this research paper will be useful for institutions and educators to address the challenges faced by E-Learning and improve the learning experience for students.

3. LIMITATIONS OF THE STUDY

- The period of this study was only 2 months because of which data was not able to collect from a larger section for the survey.
- The results obtained cannot be taken as a generalization of the population as it was limited to the region of Kerala.

4. LITERATURE REVIEW

Importance of E-Learning During the COVID-19 Pandemic

The COVID-19 pandemic has forced schools and universities to adopt e-learning as the primary method of instruction (Maatuk et al., 2021). E-learning has provided a way for students to continue their education while maintaining social distancing measures (Pokhrel & Chhetri, 2021). It has also offered opportunities for innovation and flexibility in education.

Challenges and Opportunities of E-Learning

The sudden shift to e-learning has presented several challenges, such as lack of access to technology, limited interaction, and poor digital literacy (Maatuk et al., 2021; Maatuk et al., 2022). However, e-learning has also presented opportunities for students and instructors to develop new skills, such as time management, self-motivation, and technical proficiency (Zala, Hamed & Bolbol, 2021; Maatuk et al., 2022). It has also provided access to education for students who may have been limited by geographical location or other factors (E-learning in Higher Education Institutions During COVID-19 Pandemic: Current and Future Trends Through Bibliometric Analysis, 2022)

Challenges and Realities of E-Learning

E-learning technologies and pedagogical approaches have been employed in various fields, such as sport and physical education, during the pandemic (Moustakas & Robrade, 2022). E-learning has presented challenges such as limited interaction, lack of access to resources, and poor motivation (Moustakas & Robrade, 2022). However, it has also provided opportunities for innovation and flexibility in education (Moustakas & Robrade, 2022).

E-learning has provided access to education for students who may have been limited by geographical location or other factors. E-learning has enabled students to develop digital skills that are increasingly important in the modern workforce (Maatuk et al., 2021).

5. RESEARCH METHODOLOGY

5.1 Research Design : This study aims to understand the challenges of E-learning for learners. We use a descriptive and analytical research design in this study with the help of a structured questionnaire. The study uses convenience sampling for selecting the respondents from across Kerala.

5.2 Population Of the Study: The target group were E-learning aspirants from across the State of Kerala. Kerala is one of the states in India which has higher literacy rates. The data was gathered in accordance with the responses of 150 candidates who received an online questionnaire and provided a sample size.

5.3 Data Collection: Data for this study included both primary and secondary sources. A questionnaire was used to collect the essential information that was distributed to respondents via social media channels like Instagram, WhatsApp, and E-mail. Google forms was used for data collection. The first part of the questionnaire focused on demographic and general information related to level of satisfaction. The second part focused on the investigation related to factors that contributed as challenges to E-learning. LIKERT scale was used for this part of the questionnaire. Additional inputs for the questionnaire and the research were generated from information gathered from websites, journals, and earlier study papers makes up the secondary data.

5.4 Statistical Tools and Techniques Used for Analysis: The statistical techniques and tools employed in this study's analysis consists of Google forms. The software used to analyse and interpret the Chi square Test and exploratory factor analysis was with the help of SPSS (Statistical Package for The Social Sciences).

6. RESULTS AND DISCUSSION

The data was collected using structured questionnaire through google forms from respondents across Kerala. The questionnaire included LIKERT scale for collecting information related to factors that impacted the E-learning industry.

6.1 Descriptive Statistics

Gender Distribution: The survey shows that 47.1% of the respondents are females, while 52.9% are males. This indicates a relatively balanced gender distribution among the participants.

Age Groups: Among the respondents, 83.3% fall into the age group of 18-30, indicating that the majority of the participants are young adults. Additionally, 11.8% of the respondents belong to the age group of 41-50, suggesting a smaller representation of middle-aged individuals.

Occupation: According to the survey results, 55.99% of the respondents fall into the "others" category. This category likely includes students or parents, as they are more likely to participate in e-learning. Furthermore, 31.4% of the respondents are self-employed.

Preference for Online Classes: Regarding their preference for online classes compared to offline classes, 50% of the respondents indicated a preference for online classes, 27.5% responded with "no," and 22.5% responded with "maybe." This suggests that a majority of the respondents find online classes to be better than offline classes.

Preferred Format for E-Learning: When asked about their preferred format for e-learning, 37.3% of the respondents stated that they do not have a preferred format, 28.4% might have a preferred format, and 34.3% have a preferred format. These results indicate a relatively equal distribution among the three categories, suggesting diverse preferences for e-learning formats.

Frequency of Spending on E-Learning: When asked about their spending frequency on e-learning, 31.4% of the respondents stated that they spend rarely, 28.4% spend monthly, 21.6% spend daily, and 18.6% spend weekly. These results suggest diverse spending habits among the participants.

6.2 Exploratory Factor Analysis: Factors Contributing as Challenges to E-Learning for Learners

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.869
Bartlett's Test of Sphericity	Approx. Chi-Square	423.570
	df	45
	Sig.	.000

Factor analysis was done to find out the factors influencing E-Learning. Bartlett's test of sphericity, which tests the overall significance of all the correlations within the correlation matrix, was significant ($\chi^2(45) = 423.57, p < 0.05$), indicating that it was appropriate to use the factor analytic model on this set of data. The Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the strength of the relationships among variables was high (KMO = .869), thus it was acceptable to proceed with the analysis. Two factors with eigenvalues greater than one were extruded from the analysis.

Table 2 shows that The first factor was robust, with a high eigenvalue of 4.854, and it accounted for 48.54% of the variance in the data. Factor two had an eigenvalue of 1.108 and accounted for a further 11.082% of the variance.

The first Factor was identified as "Technical Factors" based on the characteristics of the variables included in the list. The variables were - Lack of quality, Requires strong self-motivation, Security risks, Lacks face to face communication, Prone to technical issues, Cheating prevention, Causes social isolation. The second factor was identified as "Feedback Factors" which included Student feedback is limited, Lack of communication skill development and Requires more screen time. Previous literature has sighted Learning Comfort and Learning effectiveness as factors which influenced E-learning platforms choice among students (Shami & Chakkambath, 2022). Another published research results shows that the difficulties of E-learning such as technical, services, and interactivity of using the E-learning systems (Shakah et al, 2019; Ja'ashan, 2020).

Shakah, G., Al-Oqaily, A., & Alqudah, F. (2019). Motivation Path between the Difficulties and Attitudes of Using the E-Learning Systems in the Jordanian Universities: Ajloun University as a Case Study. *Int. J. Emerg. Technol. Learn.*
Ja'ashan, M. (2020). The Challenges and Prospects of Using E-learning among EFL Students in Bisha University. *Arab World English Journal.*

	Component	
	1	2
Lack of quality	0.791	
Requires strong self-motivation	0.791	
Security risks	0.691	
Lacks face to face communication	0.683	
Prone to technical issues	0.658	0.471
Cheating prevention	0.576	0.554
Causes social isolation	0.523	0.522

Student feedback is limited		0.758
Lack of communication skill development	0.422	0.659
Requires more screen time .	0.419.	0.651
Eigenvalues	4.854	1.108
Percentage of total variance	48.54	11.082

6.3 Chi Square Test: Hypothesis: There is a significant relationship between gender and college major.

Null Hypothesis: There is no significant relationship between gender and college major.

Alternative Hypothesis: Gender is a significant predictor of college major.

Table 2: Chi Square Test Results

A chi-square test of independence was conducted to examine the relationship between gender and college major. The results of the test showed that there was a significant relationship between the two variables, $\chi^2(16, N = 103) = 119.024$, $p < .001$. This means that gender is a significant predictor of college major. Specifically, women were more likely than men to major in education and social sciences, while men were more likely than women to major in business and engineering. Previous literature has supported similar outcome where gender differences were prominent in selection of major (Morgan et al, 2013; Quadlin, N;2020; Sloane et al, 2021)

7. CONCLUSION

E-learning has transformed education and training, giving several advantages over classroom learning. It allows students to study anywhere with an internet connection at their own speed. E-learning is affordable, scalable, and customizable. Exploratory factor analysis identified "Technical Factors" and "Feedback Factors". A chi-square test of independence examined gender and college major. The test revealed a significant association between the two variables. Previous literature also support findings suggest that important e-learning accessibility problems remain (Asuncion, et al, 2010; Mukuna & Aloka, 2020). E-learning has drawbacks such technical challenges, minimal social connection, and no instructor feedback. Some courses are too practical for online study. Despite these obstacles, e-learning is a successful form of education and training, especially in the digital age where technology is so important. As technology advances, we may expect more creative methods to use e-learning to improve global education and training.

8. REFERENCES

- [1] Punjani, K.K.; Mahadevan, K. Transitioning to online learning in higher education: Influence of Awareness of COVID-19 and Self-Efficacy on Perceived Net Benefits and Intention. *Educ. Inf. Technol.* 2021, 27, 291–320. [Cross Ref]
- [2] Dhawan, S. Online Learning: A Panacea in the Time of COVID-19 Crisis. *J. Educ. Technol. Syst.* 2020, 49, 5–22. [Cross Ref]
- [3] Baber, H. Social interaction and effectiveness of the online learning—A moderating role of maintaining social distance during the pandemic COVID-19. *Asian Educ. Dev. Stud.* 2021, 11, 159–171. [Cross Ref]
- [4] Neumann, P.G. Risks of e-education. *Commun ACM* 1998, 41, 136–137. [Cross Ref]
- [5] Mheidly, N.; Fares, M.Y.; Fares, J. Coping with Stress and Burnout Associated with Telecommunication and Online Learning. *Front. Public Health* 2020, 8, 672. [Cross Ref]
- [6] Ministry of Education. Pembelajaran Jarak Jauh (PJJ) Bisa Jadi Model Pendidikan Masa Depan. 2021. Available online: <http://ditpsd.kemdikbud.go.id/artikel/detail/pembelajaran-jarak-jauh-pjj-bisa-jadi-model-pendidikan-masa-depan> (accessed on 11 November 2021).
- [7] Maharani, T. Mendikbud: Setelah Pandemi COVID-19, Pembelajaran Jarak Jauh Akan Permanen. 2 July 2020. Available online: <https://nasional.kompas.com/read/2020/07/02/14445511/mendikbud-setelah-pandemi-covid-19-pembelajaran-jarak-jauh-akan-permanen> (accessed on 11 November 2021).
- [8] Clark, A.E.; Nong, H.; Zhu, H.; Zhu, R. Compensating for academic loss: Online learning and student performance during the COVID-19 pandemic. *China Econ. Rev.* 2021, 68, 101629. [Cross Ref]
- [9] Versteijlen, M.; van Wee, B.; Wals, A. Exploring sustainable student travel behaviour in The Netherlands: Balancing online and on-campus learning. *Int. J. Sustain. High. Educ.* 2021, 22, 146–166. [Cross Ref]
- [10] Ningsih, K.C. Jumlah Penduduk Indonesia 2020 Berdasarkan Komposisi Usia. 19 May 2021. Available online: <https://www.kompas.com/stori/read/2021/05/19/123946879/jumlah-penduduk-indonesia-2020-berdasarkan-komposisi-usia> (accessed on 11 November 2021).

-
- [11] Li, Z.; Chen, Z.; Yang, N.; Wei, K.; Ling, Z.; Liu, Q.; Chen, G.; Ye, B.H. Trends in research on the carbon footprint of higher education: A bibliometric analysis (2010–2019). *J. Clean. Prod.* 2021, 289, 125642. [Cross Ref]
- [12] Circella, G.; Tiedeman, K.; Handy, S.; Alemi, F.; Mokhtarian, P. What Affects Millennials' Mobility? Part I: Investigating the Environmental Concerns, Lifestyles, Mobility-Related Attitudes and Adoption of Technology of Young Adults in California. May 2016. Available online: <https://escholarship.org/uc/item/6wm51523> (accessed on 4 December 2020).
- [13] Irawan, M.Z.; Bastianto, F.F.; Rizki, M.; Belgiawan, P.F.; Joewono, T.B. Exploring the frequency of public transport use among adolescents: A study in Yogyakarta, Indonesia. *Int. J. Sustain. Transp.* 2021, 1– [Cross Ref]
- [14] Hair, J.F.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*; Pearson: Harlow, UK, 2010; Available online: <https://www.pearson.com/uk/educators/higher-education-educators/program/Hair-Multivariate-Data-Analysis-GlobalEdition-7th-Edition/PGM916641.html> (accessed on 21 July 2020).
- [15] Hosmer, D.W.; Lemeshow, S.; Sturdivant, R.X. *Applied Logistic Regression*, 3rd ed.; Wiley: Hoboken, NJ, USA, 2013. Available online: <https://www.wiley.com/en-id/Applied+Logistic+Regression%2C+3rd+Edition-p-9780470582473> (accessed on 13 July 2020). Benson, A.D. Using Online Learning To Meet Workforce Demand: A Case Study of Stakeholder Influence. *Q. Rev. Distance Educ.* 2002, 3, 443–452.
- [16] Conrad, D. Deep in the Hearts of Learners: Insights into the Nature of Online Community. *J. Distance Educ.* 2002, 17, 1–19.
- [17] Appana, S. A Review of Benefits and Limitations of Online Learning in the Context of the Student, the Instructor and the Tenured Faculty. *Int. J. E-Learn.* 2008, 7, 5–22.
- [18] Shamsi Sukumaran, D., & Chakkambath, R. S. (2022). WHAT INFLUENCES CHOICE OF E-LEARNING PLATFORM?