Journal of Information Systems Engineering and Management
2025, 10(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Managing and Assessing the Quality of E-Learning Teaching by Faculty at Indian Universities

Prof. Chungyun Kim
Department of Education, Kangnam University, 40, Gangnam-ro, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea

ARTICLE INFO

Received: 02 Oct 2024
Revised: 06 Dec 2024
Accepted: 22 Dec 2024

ABSTRACT

The expansion of the usage of mobile, cloud computing and internet `in the current environment affected all the facets and existence of humans. As a result, electronic learning is spreading its wings in every industry and opening up a lot of options. The scope of education developed and grown dramatically in the past years thus emergence of key factors in development of education in universities. The main objective of the study is to assess Indian universities faculty quality teaching of e-learning in the universities. The validity of different criteria was investigated. The main purpose of the study is creating a valid as well as reliable quality measurement scale of electronic learning in viewpoints of both learners and instructors in an Indian environment. The results of exploratory and confirmatory factor analyses are shown in the covariance model and the structural model, respectively. The covariance model demonstrates that from a faculty's perspective, collaboration, industry acceptance, and value addition are key elements, whereas from a faculty member's perspective, transparency in assessment, technical, and student participation are important aspects. The scope of study is for assessment of quality of E-learning teaching of faculty at Indian universities through various parameters.

Keywords: E-Learning, Indian Universities, Learners, Indian Environment

INTRODUCTION

E-Learning is the formal system of teaching-based learning which uses the electronic sources. Electronic Learning can be taken place outside or inside the formal kind of classroom setting but teaching uses the Internet and the computer. The education is delivered to many numbers of students at one time and number od of times is referred to as E-Learning. It can be also known as network-enabled transferring of knowledge and skills. Initially this type of learning is not encouraged as it lacks human resources for teaching and learning. Even though now it is accepted by most of the people due to the reason of rapid advancement in system of learning and advancement in technologies. The revolution of e-learning began to shine after the invention of computer and later the invention of tablets, smartphones and other electronic gadgets plays the important role in the teaching-learning process through internet. Instructions through electronic resources like flash drives or optical discs started to replace conventional books in the classroom environment. For dissemination of knowledge internet is used as it can be accessed anytime around the clock and anywhere in the world (Said et al., 2023; Moses et al., 2022). Electronic learning is completely different from the traditional type of learning in different variables. The environment of virtual learning teachers are able to convey the information, share the knowledge, engage the students and can evaluate the learning process in the different way. Students can acquire knowledge even without the assistance of teachers since the online education gives more freedom in learning anytime anywhere. Professors of the universities can learn to engage with more student population as degree programs through online draws high percentage of atypical students and out of region that include the working students, parents, and military personnel. Many of these discrepancies are addressed by increasingly complex online courseware, but only when teachers employ the appropriate resources under the proper conditions. The most popular techniques for delivering instruction and content in online degree programs.

E-learning is being used in educational institutions all over the world and has become essential in institutions of higher learning. Globalization is to blame the growth of e-learning in the educational institution. This refers to political and economic developments, as well as the globalization of ideas, cultures, and goods. Without a doubt, the expansion of

e-learning contributes to globalization as educational institutions make every effort to offer distance learning education beyond social and geographic borders, resulting in the fusion of academic standards and viewpoints. the most important ways for teachers and students to share and access resources for learning and research is through the internet. The integration of e-learning and information and communication technology into the established educational systems India has remained far behind several industrialized countries (Babu & Sridevi, 2018).

However, most nations recently implemented e-learning, and as a result, the number of students studying online is growing at a comparatively rapid rate. Due to the old model's failure to adequately prepare pupils for the challenges they are expected to face in the country's quickly evolving society, the adoption of this new approach in India has become all but necessary. In higher education information and communication technology would help the current higher education system, the Government of India and the University Grants Commission (UGC) have realized. E-learning is currently the most popular trend in India, but implementing E-learning systems has both benefits and drawbacks that must be considered before making any significant investments in the E-learning system of education. In order to determine the advantages, restrictions, and challenges in the expansion of E-learning at the universities in India is expected to encounter, we conducted a study. This information should make it easier, quicker, and less expensive for many students in India and other countries across the world to share knowledge. This will help the effective implementation of a new educational system. The prospects of reaching the much-needed benefits of e-learning in Indian Universities will be improved by identifying the hurdles and other limiting factors and addressing them in advance (Dhawan., 2020; Kumar et al., 2023).

Therefore, it is clear that the perspective of the instructor and the students is crucial in adopting as well as application of modern virtual teaching pedagogy (Cho, 2024; Min et al., 2024). It is important to examine people's views in order to comprehend the factors that contribute to the widespread use of virtual platforms for distribution of contents and knowledge. The questionnaire, which includes both closed- and open-ended questions, was distributed to the faculty and students whom are using the online portals. During the recent months, there are massive increase of online platforms in universities and high school education. Consequently, a hybrid type of exploratory study was carried out to ascertain how well-informed students and faculty were about the achievement of popular material delivery techniques. For the purpose of choosing students and faculty from various Indian universities and colleges who participated in Web-based learning, a snowball sampling technique is used. With the aid of a t-test, the responses were analysed, and the results showed a statistically significant difference between faculty and students' perceptions of teaching and learning with regard to three factors: the absence of a human interface, the fictitious presence of students, and the resource consumption of online instruction (Dadhich et al., 2021).

1.1 OBJECTIVE OF THE STUDY

The objective of the study is to evaluate and assess the quality of e-learning teaching by the faculty of Indian Universities.

LITERATURE REVIEW

Mathivanan et al., (2021) In India, educational institutions including schools, colleges, and universities still use traditional teaching methods and adhere to the traditional classroom environment of lectures and interaction face to face. The majority of the academic community began unified learning, although the majority of them still use outdated procedures. The unexpected COVID-19 Plague, which was brought on by SARS-Cov-2, shook the entire world. It was described as a disease outbreak by the WHO. This situation put the entire global education system under pressure and prompted faculty to switch to an online method right away. Many educational institutions were forced to switch entirely to online teaching-learning since they had previously been unwilling to alter their old didactic practices. The impact of the education system during an epidemic in India is thoroughly discussed in this article. It provides a thorough explanation of India uses of e-learning in present situation. It also explains how to deal with the difficulties of online learning.

Agarwal et al., (2021) The world's most promising business is e-learning. E-learning is the successful platform for faculty and students access to potential material during the COVID-19 lockout. Online platform and technologies for e-learning offers the possibility for making the education available which are affordable for middle-class and low-class households in developing countries like India with limited resources. Three online platforms used by three different types of e-learning providing educational institutions like Microsoft, Zoom and Google Classroom are discussed in the essay. During the COVID-19 shutdown, we want to examine the effectiveness and acceptance of

technologies for e-learning among the students of Indian universities (Adewuyi et al., 2023). The report also seeks to assess the effect of e-learning in pandemic public health and environment during lockdown due to Covid-19 pandemic. It has been discovered that the e-learning has the power to decrease the emission of carbon that would be good for the environment. However, electronic learning may result in decline and self-isolation in academic performance, which may cause mental sadness and anxiety disorders. The neck and eye muscles may be overworked as the result of studying through electronic gadgets, which could be harmful to physical health.

Khan et al., (2020) The pandemic Covid-19 had the remarkable impact on the education system globally and by forcing the Closure of all type of educational institutions and students' fraternities had negative impact everywhere. Because of its contagiousness, COVID-19 required containment and imposed isolation, which significantly hampered student-teacher relationship. Learning based on computers had become the better replacement for traditional classroom and offline instructions which has one to one interaction. In use of the e-learning system has the significant potential for the students to perceive and prepare for the system of online learning that are used in the universities during the pandemic lockdown. In the study quantitative technique is used which include students of 184 university which include the Guru Gobind Singh Indraprastha university, Central university, Delhi university have provided their comments via an online survey.

Gherhes et al., (2021) the epidemic Coronavirus has forced the schools and other educational institutions to be closed and educational life of the students are totally disrupted in the entire world. The effects are seen on the students and the teachers has changed to meet demands of the new educational model of online learning. The current study only focuses on those who have benefited from the educational process, and it wants to learn how they feel about traditional classroom instruction as well as online learning, as well as whether they would like to go back to it or not. 604 students were invited to respond anonymously to an 8-question survey between December 2020 and February 2021, and their responses indicate their perceptions. The findings reveal the respondents' levels of interest in going back to school (particularly for those who have only benefited from online courses) and their level of participation in such courses. The research findings shows that drawbacks and benefits of the educational models in the perspective of first year students whom are benefited through e-learning and senior classes students whom are benefited with e-learning as well as face to face learning. The highlights of the study are collection of important data from the perspective of students that can comprehend the changes that are ongoing in the process of education and for solving the unique kind of challenges for assuring the sustainability and quality.

The development of e-learning has made it easier for everyone to access, afford, and obtain education. To successfully deploy e-learning in higher education institutions, it is necessary to examine the concerns relating to the readiness of the various stakeholders (Navani & Ansari, 2020) . The goal of the study is to evaluate how well-prepared teachers at a top State Agriculture University are for online learning (SAU). Faculty members chosen through stratified random sampling were given a standardized, pre-tested questionnaire. According to the study's findings, the faculty at the chosen SAU was "e-learning ready" but needed changes in a few key areas to be more successful. However, just approximately 40% of faculty members showed support for e-learning, despite the fact that more over 50% of respondents thought that the new technology was simple to use and useful. The study will be helpful for creating relevant and acceptable methods for the effective deployment of e-learning in the agricultural universities.

1.1 RESEARCH GAP

The literature review reveal that studies are carried out in the perspective of students towards e-learning and e-learning teaching during the pandemic.

METHODOLOGY

3.1 E-learning resources

3.1.1 LEARNING MANAGEMENT SYSTEM

An application called learning management system is used to organize documentation, follow courses, announce them, and deliver them, as well as to prepare projects or programs for learning and improvement. The concept of the learning framework logically emerged from e-Learning. Despite the fact, main LMS appeared in the section on advanced level of education, the corporate market and the education sectors continue to be the focus of the majority of LMSs today.

Using expository announcements and information, the frameworks designed by the boards are teaches to distinguish between learning and preparing gaps. LMSs provide as a coursed for synchronous oriented and content-based learning includes platform for online materials, while being focused on the delivery of web-based learning. Although used in advanced education, a flipped homeroom or study hall may be offered by an LMS but not in the business environment.

Videos, courses, documents, and other types of content are all delivered and managed by an LMS. In the markets for education and improved education, an associate LMS may include a variety of business-like functionality, but may also include features that include educator, faculty and teacher accelerated learning, a discussion board, and infrequently the use of the curriculum. The corporate LMS doesn't have a curriculum function, however the courses are started with index of heading level for giving the students for the overview of the materials covered.

3.1.2 Gamification

E-learning is made enjoyable with gamification, and beginners and learners can study through games and movies that are very interactive.

3.1.3 Virtual Classrooms

Higher education programs are delivered online, often through the Internet, through a virtual university. Others only offer online courses, while some brick-and-mortar universities also provide online learning as a component of their extended university courses. They are thought of as a type of distant learning. Academic research has a lot to gain from the paradigm of shifting tradition one to one education to virtual learning and e-learning based on technologies. The relevance of the system of virtual teaching and e-learning in India due to development of technology and learner convenience makes it vital to understand the students experience are more notable and the difficulties they encountered while taking virtual classes. In order to understand the difficulties and opportunities of a virtual type of learning system with viewpoint of undergraduate students (Karim & Hasan, 2020).

3.2 STUDY DESIGN AND DATA COLLECTION

The study includes 100 students as study participants categorized into two groups taken from different universities in India with 50 students in each group for easy assessment. Through questionnaires the empirical study is carried out for the assessment of quality of e-learning teaching by faculty of the Indian Universities.

RESULTS AND DISCUSSION

In a recent survey on crunch's impact on education administration, 90% of universities reported adopting pedagogical software tools. For social virtual meetings and e-learning platforms, 72% used live streaming videos, 40% provided connections to further online resources, and 68% contributed to little-frequent and small-scale working groups. Email, educational software, Skype, Facebook, Telegram, and other electronic platforms are heavily used worldwide for theoretical content and they are adjusted to the present situation. E-learning environment has been promoted through the educational institutions for replacement of Inside-class activities even during pandemic or any disasters. Universities make the use of Moodle and other web resources like Zoom, WebEx substantially for providing activities for e-learning. Zoom, Moodle, Webex are the online communities that provides virtual type of learning and offers mixed kind of learning for increasing the outcomes of learning, training the students and to improve the performance for meeting the international standards. Moodle are able to deliver the materials for instructions, tests and assignments for the students with direct engagement. The most important factors are service quality, information quality, teacher perspective, learner perspective, system quality and supportive factors. Most of the universities provides remote areas for e-learning teaching through Moodle to give formal e-assessments which has number of question styles and the ability level of the instructors. Students are expected to perform better and the responses are taken into consideration with issues and challenges in the technologies for giving quality education (Singh et al., 2020). Even though most of the outlets are useful and they are need to be improved for maintain it constantly and should be connected with the internet service with reliability. The process of e-learning teaching by the faculty are structured and standardized. Different types of variables are compared for traditional learning and E-Learning is displayed in figure 4.1 and the information is given in table 4.1.

Table 4.1 Traditional classes Vs E-Learning

	Traditional Learning	E-Learning
Attention	76%	91%
Interaction	80%	90%
Response	75%	85%
Achievement	78%	89%

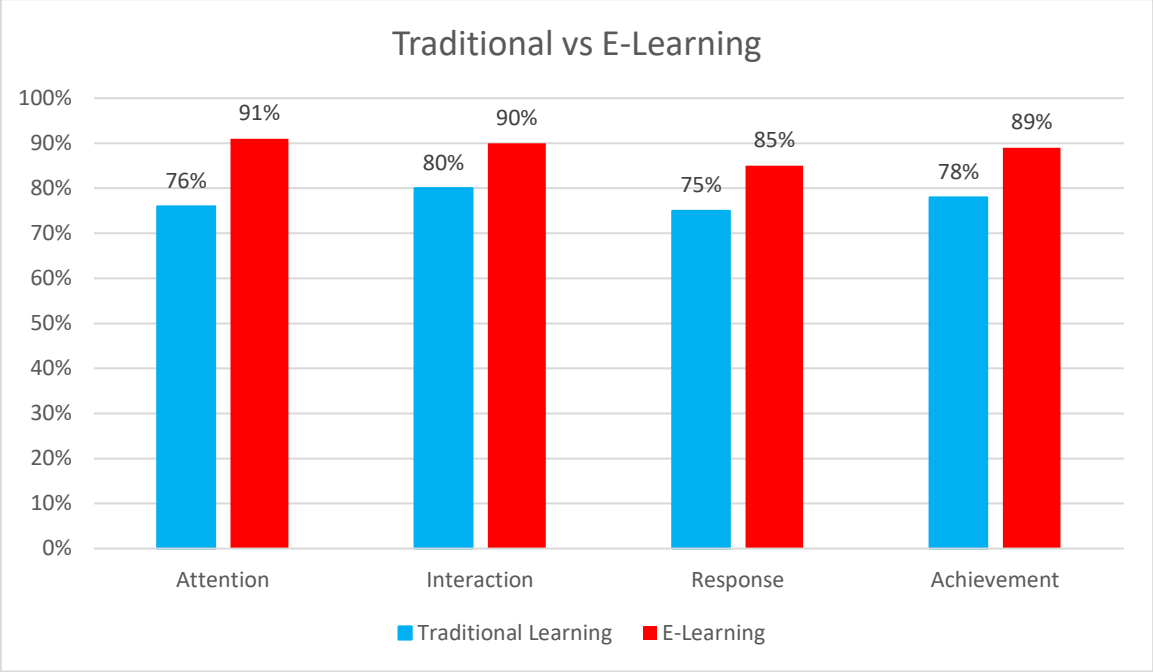

Figure 4.1 Traditional Learning Vs E-Learning

The quality of E-learning teaching by faculty in Indian universities are assessed through various parameters and it is shown in table 4.2 and graph is shown in figure 4.2.

Table 4.2 Assessment of E-Learning Teaching by Faculty

	Group A	Group B
Connectivity	78%	92%
Content	80%	95%
Student Behaviour	88%	88%
Environment	99%	67%
Skills	72%	78%
Motivation	100%	85%
Attitude	91%	96%

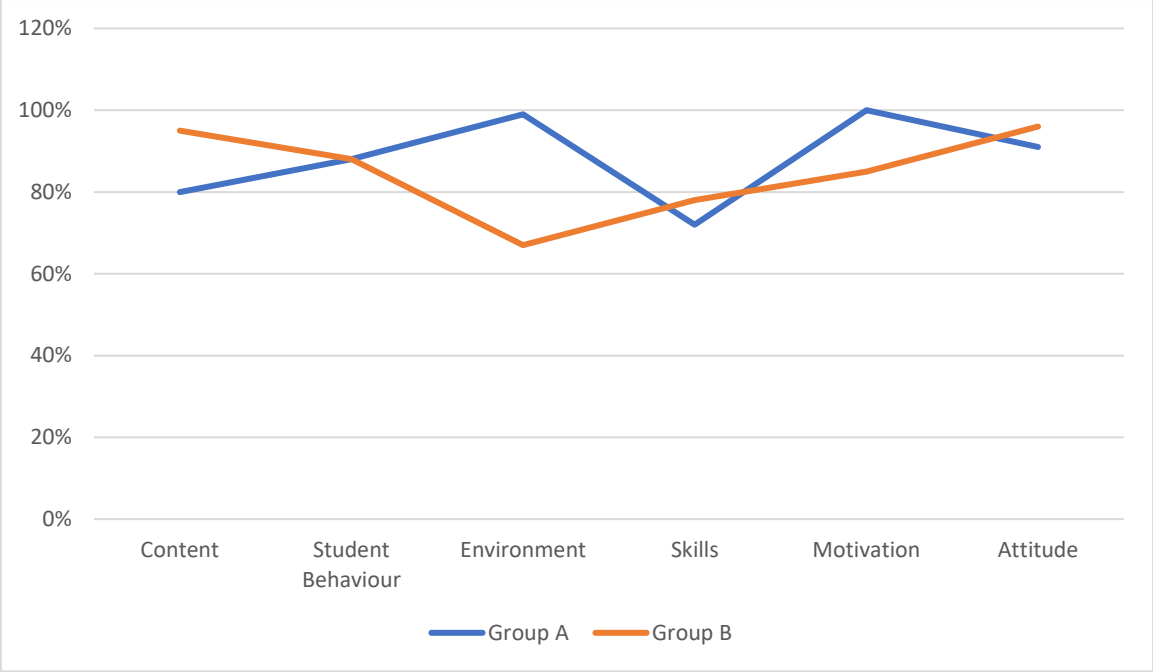

Figure 4.2 Assessment of E-Learning Teaching by Faculty

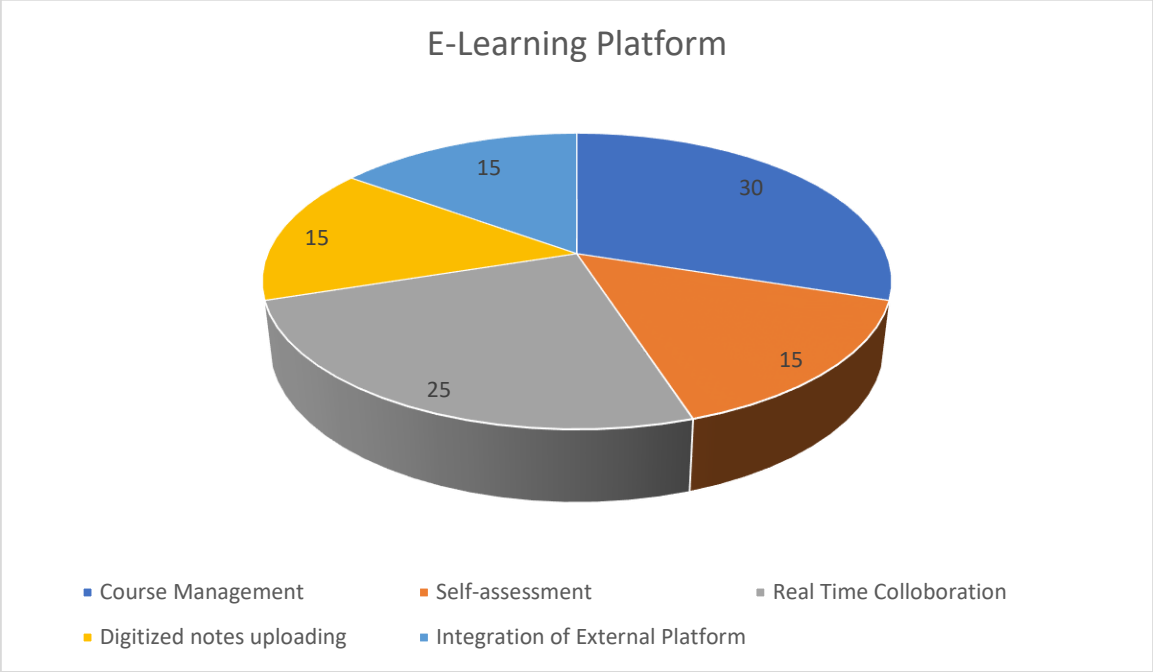

Figure 4.3 E-Learning Platform

The above figure 4.3 shows the components in the E-learning platform for enhancement of learning and to provide quality teaching. To improve communication between students and teachers, the schools transmitted educational content using private platforms like Moodle. The focus is on education because of special modern growth; there doesn't seem to be any proof that substantial impact on development of expertise teaching and training of students. Other platforms used include Pinterest and LinkedIn. At a number of institutions, new standards for classroom conferences and lectures were used. These systems included Zoom, Jitsi, Microsoft Teams, and WebEx. Although they primarily rely on the strength of the internet connection, paid platforms like WebEx and Zoom which offer fascinating alternative setting to the traditional classroom. Student distraction is the most fascinating research for combining Zoom and WebEx with web and mobile browsing version. Facilitators must be brave when engaging in virtual facilitation and intervention (Mathivanan et al., 2021; Jati et al., 2023).

The main causes for students to choose e-learning is the accessibility of study materials. According to the study, e-learning technology makes it simple for students to obtain knowledge, which helps them develop a favourable attitude toward it. The study was carried out depending on the student behaviour, usability, self-efficacy and usefulness with reference to e-learning. The research study supports the quality teaching of e-learning that include simplified form of education in various locations that cannot be achieved in the face-to-face traditional learning which further indicates the identical experience of learning as done through traditional classroom instruction.

CONCLUSION

E-learning has expanded the field of education. E-learning techniques are being employed more frequently in higher education to speed up the teaching and learning process. However, before any complex organization-wide e-learning system is adopted, it is crucial to evaluate quality of e-learning teaching preparedness of various study participants, including academics, administrators and students. The adoption of system of e-learning in the provision of education to the students of the universities can be facilitated by the attitude, motivation, skills, student behaviour towards recent innovative technologies. The success of e-learning depends on its key elements, including connectivity, content, policy, environment, and work culture and it provides the quality e-learning teaching by the faculty of Indian Universities.

ACKNOWLEDGEMENT

This Research was Supported by Kangnam University Research Grants (2023)

Funding Details

This research received no external funding.

Authors' contributions

The author contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

Declaration of Conflicts of Interests

The author declares that they have no conflict of interest.

Availability of data and materials

Not Applicable

Use of Artificial Intelligence

Not applicable

Declarations

The author declares that all works are original and this manuscript has not been published in any other journal.

REFERENCES

[1] Adewuyi, R., Aweda, J., Ogunwoye, F., Omoniyi, P., & Jen, T.-C. (2023). Prediction of Impact Strength of TIG Welded Cr-Mo Steel Using Artificial Neural Networks. Metallurgical and Materials Engineering, 30(1), 61–69. https://doi.org/10.56801/MME1031

[2] Agarwal, A., Sharma, S., Kumar, V., & Kaur, M. (2021). Effect of E-learning on public health and environment during COVID-19 lockdown. Big Data Mining and Analytics, 4(2), 104-115.

[3] Babu, G. S., & Sridevi, K. (2018). Importance of E-learning in Higher Education: A study. International Journal of Research Culture Society, 2(5), 84-88.

[4] Cho, O.H. (2024). An Evaluation of Various Machine Learning Approaches for Detecting Leaf Diseases in Agriculture. Legume Research. https://doi.org/10.18805/LRF-787.

[5] Dadhich, M., Hiran, K. K., & Rao, S. S. (2021). Teaching–Learning Perception Toward Blended E-learning Portals During Pandemic Lockdown. In Soft Computing: Theories and Applications (pp. 119-129). Springer, Singapore.

[6] Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. Journal of educational technology systems, 49(1), 5-22.

[7] Gherheş, V., Stoian, C. E., Fărcaşiu, M. A., & Stanici, M. (2021). E-learning vs. face-to-face learning: Analyzing students' preferences and behaviors. Sustainability, 13(8), 4381.
[8] Jati R.K., Kar S., and Sahu N.C. (2023). Evolutionary Effect of Fuzzy Logic in the Healthcare Domain. Bio-Science Research Bulletin, 39(1), 22-27.
[9] Karim, M. R., & Hasan, M. (2020). Virtual classes during Covid 19 pandemic in tertiary level in Saudi Arabia: Challenges and prospects from the students' perspective. Asian EFL journal, 27(5), 205-219.
[10] Khan, M. A., Nabi, M. K., Khojah, M., & Tahir, M. (2020). Students' perception towards e-learning during COVID-19 pandemic in India: An empirical study. Sustainability, 13(1), 57.
[11] Kumar, V., Chaturvedi, V., Lal, B., & Alam, S. (2023). Application of Machine Learning in Analyzing the Psychological Well Being amongst the Employees in the Private Sector. An Analysis of Work-Life Balance in the Healthcare Industry. Pacific Business Review (International), 16(1), 124-131.
[12] Mathivanan, S. K., Jayagopal, P., Ahmed, S., Manivannan, S. S., Kumar, P. J., Raja, K. T., ... & Prasad, R. G. (2021). Adoption of e-learning during lockdown in India. International Journal of System Assurance Engineering and Management, 1-10.
[13] Min, P.K., Mito, K. and Kim, T.H. (2024). The Evolving Landscape of Artificial Intelligence Applications in Animal Health. Indian Journal of Animal Research. https://doi.org/10.18805/IJAR.BF-1742
[14] Moses, M. B., Nithya, S. E. & Parameswari, M. (2022). Internet of Things and Geographical Information System based Monitoring and Mapping of Real Time Water Quality System. International Journal of Environmental Sciences, 8(1), 27-36. https://www.theaspd.com/resources/3.%20Water%20Quality%20Monitoring%20Paper.pdf
[15] Navani, Y., & Ansari, M. A. (2020). Study of e-learning readiness of teachers of state agriculture university. International Journal of Agriculture Sciences, ISSN, 0975-3710.
[16] Said, D., Youssef, D., El-Bayaa, N., Alzoubi, Y. I. & Zaim, H. (2023). The impact of diversity on job performance: evidence from private universities in Egypt. *Acta Innovations*, 49, 17–30. https://doi.org/10.32933/ActaInnovations.49.2
[17] Singh, G., Bhatnagar, V., Gupta, R., & Kumar, G. (2020). Exploration of e-learning vs traditional learning in india. Humanities & Social Sciences Reviews, 8(2), 69-76.