IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

IMPACT OF E-LEARNING IN TECHNICAL EDUCATION IN UNIVERSITIES

Comparative Study of two universities

B. Sunil Kumar

[1]Research Scholar, Department of Communication and Journalism, Osmania University, Hyderabad, Telangana, India

Abstract:

This study has been undertaken to compare the e-learning ecosystems universities. The paper explores the impact of e-learning among the students and faculty and examine the association between the use of e-learning and outcomes for learners and explore the policy of implications of the use of e-learning in technical universities.

Keywords: e-learning, Comparative Study, e-learning eco systems

1 INTRODUCTION

The study is motivated with an attention in comparing e-learning practices in select universities one from Telangana and the other from Andhra Pradesh. To reach the aim the study was conducted in two technical universities that provide e-learning courses for various streams. The cultural dimensions of their educational paradigms, their e-learning approach and other issues common to both universities have been compared. A brief background of each component of studies is described, and also aims, significance and questions are presented. e-learning systems can assist learning providers to manage, plan, deliver and track the learning and teaching process. Furthermore, it aims to help instructors, universities facilitate student learning during periods of universities closure.

AIM OF THE STUDY:

The aim of the research is a comparative study of e-learning eco systems, cultural dimensions, teaching and learning practices and challenges faced among the universities while deploying and delivering content. To reach this aim the researcher asked three questions mainly,

- What is the current status of e-learning practices in both the universities

II. THEORITICAL MODEL AND HYPOTHESIS

2.1 The task-technology fit (TTF) concept contends that performance and acceptance are influenced by how well a task and the technology being used to complete it “fit” together. Learning management systems (LMS) and digital video tools are two examples of the technology in the education field to which this approach has been applied. These studies indicate that performance improves when technology is ideally adapted to the users' abilities and tasks. The task-technology fit (TTF) model is a popular theoretical framework for analyzing the effects of information technology on performance, gauging usage effects, and determining the compatibility of task and technology features. The task-technology fit, which in turn affects users' performance and utilization, can be influenced by both task features and technological qualities. TTF has been extensively investigated and used in a variety of information systems since it was first proposed. TTF has been the subject of research in a number of contexts, but e-learning has received relatively less attention. Up to this point, it hasn’t been determined if or how well a solid task-technology fit will affect a user’s adoption of e-

learning. The TTF model does not take into account social dynamics in the context of e-learning, which would limit its potential to forecast the use of social networking technology. By increasing the constraint with social motivation and gaining knowledge from social influence and acknowledgment, the problem can be solved.

Hypothesis 1

H1: Information quality is positively and strongly related to perceived ease of use.

Hypothesis 2

H2: Information quality is positively and strongly related to perceived usefulness.

III. RESEARCH METHODOLOGY

Qualitative research is appropriate for research on e-learning as it provides a deeper understanding of experiences, perspectives, beliefs and attitudes of the participants, which are important aspects to consider when studying e-learning. Qualitative methods, such as in-depth interviews, focus groups and ethnographic observation, allow for the exploration of complex phenomena, such as the motivations, challenges and benefits of e-learning, in a more comprehensive manner. Moreover, qualitative research can provide rich and detailed data, which can lead to a deeper understanding of the social and cultural context in which e-learning is experienced. Additionally, qualitative research can allow for the investigation of the subjective experiences and perspectives of e-learners, which may be difficult to measure quantitatively.

Qualitative research approach is often used in the field of e-learning due to its strengths in exploring subjective experiences, understanding complex processes and discovering the meaning behind people's experiences. In addition, qualitative research can provide valuable insights into the complexities and restraints of e-learning, such as the motivations and challenges that students face when using online learning platforms. This type of research can also help identify patterns, themes, and trends in attitudes and experiences, which can inform the design and development of more effective e-learning systems and practices.

The qualitative approach is considered the best way to reach aim of the study. The findings are attained from the interviews which helped researcher to present and reveal the complexity of the eco systems which are adhered by the universities.

"Qualitative Data provides open-ended information (Creswell and Plano Clark 2007) from which inductive logic can be used to reveal an emerging pattern (Creswell 2013) in contrast to statistical or quantitative approaches which only provide shallow understanding of the research".

3.1 Population and Sample

There were about 275 questions given, and the respondents replied to 260 of them, representing a 94.5% response rate. An in-person examination of these exam papers revealed 15 unanswered questions. They had to be excluded as a result. 260 additional surveys were sent to SPSS.

A questionnaire was employed as a data collection method in this study using a quantitative approach. 260 students from two universities from different streams took part in the survey, and data was collected from 260 students, both online and manually. The participants were given an introduction to the research before completing the questionnaire, and their participation was completely optional. The survey took about 10–15 min to complete. The participants were chosen from different departments and faculties using a convenience sampling technique. After taking into consideration the missing data and questionnaires that were incomplete, 15 questionnaires were omitted. 260 randomly chosen students from both universities, were the source of the data.

3.2 Data and Sources of Data

According to Krejcie and Morgan (1970) and Hair et al. (2010), who claimed the minimal sample size for quantitative research is (N = 200), the sample size of this study (N = 260) is adequate in light of this. In order to test the fictitiously developed model, information was gathered from currently enrolled students in both universities via a structured physical survey. The sample size was calculated using the formula $SS = \frac{x^2\,(p)(q)}{e^2}$

where SS = Sample Size; Z = 1.55 (95% CI); P = Prevalence Level (0.5 used for sample size required); Q = (1 p); E = Error Term (0.05). By inserting values into the formula, the sample size would be

$$SS = \frac{1.55^2\,(0.50)\,(0.50)}{0.05^2} = \frac{2.4025\,(0.25)}{0.025} = \frac{0.60025}{0.0255} = 240.25$$

3.3 Theoretical framework

The author created a questionnaire survey for this study. The first part includes questions intended to collect respondents' demographic information, such as age, gender, specialization, and year of study. Whereas the second section includes measurement items to assess the variables. For variables, see "Information Quality" and "System Quality." Five items for each variable were retrieved from the studies of Five items to measure perceived enjoyment are adopted from Refs.Items for "Technology characteristics": five items were taken from Refs.

For the remaining variables, each variable consists of five items: task characteristics, perceived ease of use form, perceived usefulness form, system use, and E-learning benefit. A Likert scale of five points was used to assess these factors, with 1 signifying "strongly disagree" and 5 indicating "strongly agree.

IV. FINDINGS

4.1 Data analysis and results

The data collected was evaluated through SmartPLS for evaluating measurement and structural models. The data was processed in two stages, each evaluating the measurement and structural model of the arrangement. In addition, the authors decided to use PLS-SEM for multiple reasons. First, PLS-SEM is generally used when a study's goal is to improve on an existing theory. Secondly, it allows for simultaneous analysis of both the measurement and the structural model, resulting in more reliable estimations. Hence, PLS-SEM was the appropriate tool for this study.

4.2 Descriptive analysis

There were 187 (71.9%) males and 73 (28.1%) females among the 260 participants. The participants' ages range from 18 to 24 years old. Based on stream and demographic variables of specialization, 72 respondents (27.7%) were from computer science, 93 (35.8%) from Electronics, 47 (18.1%) from Mechanical, 37 (14.2%) from Electrical, and 11 (4.2%) from Civil Stream.

Table 4.2: Descriptive Statics

Demographic	Description	N	%
Gender	Male	187	71.9
	Female	73	28.1
Specialization	Computer Science	72	27.7
	Electronics	93	35.8
	Mechanical	47	18.1
	Electrical	37	14.2
	Civil	11	4.2

A 5-point Likert scale with Strongly Agree (5), Agree (4), Undecided (3), Disagree (2), and Strongly Disagree (1) was applied for data assessment, including task-technology fit (TTF) and evaluation. H0: The data is normally distributed.

H_1: The data is not normally distributed.

The H1 and H2 hypotheses were accepted, supporting the idea that information quality affects perceived ease of use and perceived usefulness. Since it was discovered that information quality plays a significant role in determining perceived utility and ease of use, e-learning systems should offer more pertinent information to help users achieve their objectives. Our research reveals that e-learners were more engaged in utilizing the e-learning system, which thus raised ease of use of the e-learning system could deliver important knowledge for their employment. In order to predict perceived ease of use and perceived usefulness, perceived usability and perceived quality constructs are crucial.

When an e-learning system is impacted by information quality and is appropriate, more usage of the system leads to increased use of the information quality and perceived usefulness for adoption of e-learning systems in technical education. In order to ensure that students have a positive e-learning experience and contribute to their overall satisfaction, it can be said that characteristics of information quality such as providing people with adequate and necessary information, precise and excusable assistance, efficient and up-to-date content, and preferable quality content are important.

V. CONCLUSIONS

In conclusion, e-learning was widely used as a teaching medium during the pandemic, particularly among students in higher education. The task-technology fit with information systems success model was developed in this study to evaluate the determinants influencing e-learning acceptance at universities during pandemic. A total of 260 students volunteered to take part in the study and answered a 50-question physical questionnaire. Using partial least squares (PLS), it was found that TTF had the greatest impact on e-learning benefits, all students in higher education should improve their e-learning experience, particularly in terms of educational quality and system quality, while using the eLearning benefit. This is the first study to look into the acceptance of eLearning benefits among undergraduate students during the pandemic. These findings could be used to develop theoretical guidelines for improving the eLearning system. Although only the task-technology fit with the information systems success model method and one other variable were used in this study. The findings suggest an extended TSK-technology fit and ISSM model for the use of e-learning systems

to enhance student teaching and learning performance. This model can aid decision-makers in higher education, universities, in organizing, assessing, and putting into practice the use of e-learning systems. In order to further understand students' views toward the sustainable consumption of e-learning systems.

Task-technology-fit in connection to system use, as determined by pandemic, strongly predicts the advantages of e-learning; participants' evaluations of the usefulness of e-learning increase when e-learning is rated as user-friendly. Future scholars who wish to conduct similar studies will require assistance in comprehending the analyses' findings. This study shows that statistical data is available, but it also has significant limitations. Due to the fact that the study's respondents came from only two universities, future research will need to include additional participants with a variety of majors. Finally, it is important to recognize and prepare for the study's limitations. To begin with, there was just two universities from which volunteers for this study came. It might affect how broadly applicable the results are. Second, the scope of the analysis was restricted to two possibilities regarding prior expertise in e-learning. On the other hand, there might be extrinsic variables related to system usage and task-technology fit. As a consequence, any future research on the adoption of e-learning should consider other external influences.

VI ACKNOWLEDGMENT

Collected, analyzed and interpreted the data performed the analysis and wrote the paper.

REFERENCES

[1] Bowsher, J. E. (1998). Revolutionizing Workforce Performance: A Systems Approach to Mastery. Training Magazine, 1998.

[2] Examining pre-service teachers' regulation in distance and traditional preschool design and technology education
Journal of ScienceDirect, (24).

[3] Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model: Journal of ScienceDirect (19).