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Challenges Faced in Utilizing of Virtual Platforms for E-Learning with Special Reference to Coimbatore City

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ABSTRACT

This study investigates the challenges faced by students, educators, and institutions in using virtual learning platforms in Coimbatore. Although e-learning offers flexibility and accessibility, it also presents issues such as poor internet connectivity, lack of digital skills, limited student engagement, and technical difficulties. As an educational hub, Coimbatore reflects both the potential and the struggles of online education. The study emphasizes the need for improved infrastructure, digital literacy, and hybrid learning models to enhance the overall effectiveness and inclusivity of virtual education in the region.

Keywords: E-learning, Virtual platforms, Digital literacy, Online education challenges, Coimbatore education system.

INTRODUCTION

This study aims to investigate the challenges faced by students, educators, and institutions in utilizing virtual platforms for e-learning in Coimbatore city. The rapid growth of digital technology has significantly transformed the education sector, making virtual learning platforms an essential part of modern education. Online education has gained immense popularity, especially after the COVID-19 pandemic, as institutions were forced to shift from traditional classroom teaching to virtual platforms. Students, teachers, and institutions often encounter technical, psychological, and infrastructural barriers that hinder the smooth adoption of virtual learning. Virtual learning has become an essential part of education, but many students and educators still struggle with various challenges that make online learning less effective.

Coimbatore, known as an educational hub in Tamil Nadu, is home to several reputed schools, colleges, and universities. With the increasing reliance on online education, it is crucial to understand the unique challenges faced by students and educators in this region. Factors such as internet connectivity, affordability of digital devices, digital literacy, and the effectiveness of virtual teaching methods play a vital role in shaping the e-learning experience. Moreover, issues like lack of student engagement, difficulty in conducting assessments, and the absence of a classroom-like environment further add to the complexity of online education.

Despite various initiatives to enhance digital learning, many students and teachers in Coimbatore struggle to adapt to virtual platforms due to inadequate training, resistance to change, and the digital divide between urban and rural areas. Addressing these challenges is essential for ensuring an inclusive and effective e-learning system. This study aims to explore the obstacles faced in utilizing virtual platforms for education in Coimbatore. By analysing the real-time difficulties encountered by users, this research will contribute to developing strategies that enhance the overall efficiency of online learning in the region.

REVIEW OF LITERATURE

- Asif Kareem Ansari, et.al (2023) Education has been transformed by virtual reality (VR) and augmented reality (AR) with immersive and interactive experiences in learning. VR allows students to walk through realistic 3D environments, facilitating their understanding of complex concepts through virtual field trips and hands-on exercises. While virtual training-enhanced augmented reality adds a digital perspective to a lesson, the real world remains untouched. Evidence indicates that these technologies pique interest, enhance retention, and give students handson experience primarily in the fields of engineering and medicine.
- 2) Krishna Sharma (2023) VR tools provide an alternative way of teaching. This study shows how VR technology improves student interest and achievement levels by using fully immersive virtual learning. This research has demonstrated some positive influences of VR through simulation examples, including science-related courses, medical practice, and even language courses. Researchers mention that using VR in

a class is needed because it offers uneven-paced learning toward students to each of them. Researchers talked about numerous technical issues and privacy aspects as well as costs off exorbitant amounts on virtual reality systems.

- 3) Karen Ann Walstra, et.al (2024) In education, there has been a growing effort toward the implementation of Virtual Reality (VR) to immerse students in interactive environments for learning purposes. VR helps in an enriched information processing atmosphere, ensuring improved student involvement, emotions, and behaviour in college education. Studies revealed that VR supports huge learning outcomes with the research indicating its high effectiveness (g = 0.85). In effective studies, students learning with VR headsets performed significantly superior than those with non-immersive tools.
- 4) DR. Salma Begum, et.al (2024) Interactive VR technology can make lessons seem more real and thus most efficient and unforgettable learning experiences for students. Research supports the personalization of learning environments through the customized learning environment brought about by VR and collaborative learning. These technologies create real-life situations for students, assisting them in comprehending several complicated issues and motivating them. However, some challenges include high costs of implementation, technical limitations, and lack of accessibility. These areas are the ones that VR will transform while providing creative novel ways of learning in every educational setting.
- 5) Enitan Shukurat Animashaun, et.al (2024) In immersive learning experiences, Virtual Reality (VR) and Augmented Reality (AR) have significantly changed the face of education. Research indicates that VR allows students to build skills and develop practical training in STEM, healthcare, and humanities. Virtual labs allow students to practice safely before entering a real-world environment, and AR enhances science and engineering lessons by providing interactive visualizations. Contrarily, challenges such as high cost, limited availability, and teacher training are some of the considerations to be accounted for before successful implementation.

STATEMENT OF THE PROBLEM

The rise of virtual learning has transformed education, offering flexibility to learners. However, in Coimbatore, challenges such as the digital divide, lack of devices, poor internet access, and limited technical skills among educators hinder effective online learning. Teachers struggle with reduced student engagement, lack of face-to-face interaction, and difficulty in monitoring progress. Network issues, limited hands-on experience, and challenges in assessments further affect the quality of e-learning. This study seeks to identify major obstacles in virtual education and suggest practical solutions to enhance the efficiency and impact of digital learning platforms in Coimbatore.

OBJECTIVES OF THE STUDY

- 1. To identify the technical challenges faced by learners in utilizing virtual platforms for e-learning in Coimbatore city.
- 2. To investigate the attitudes and perceptions of learners towards virtual platforms for e-learning.
- 3. To provide recommendations for overcoming the challenges and improving the utilization of virtual platforms for e-learning in Coimbatore city.

LIMITATIONS OF THE STUDY

- The study is conducted on the basis of responses collected from the respondents.
- The reliability of the results of the study depends on the data which were given by the respondents.
- The study is confined to Coimbatore city.

RESEARCH METHODOLOGY:

SAMPLING DESIGN:

The sample was collected among the people on a convenient sampling method.

SAMPLING SIZE:

The sample size is 130.

DATA COLLECTION

PRIMARY DATA

The data collected for this study was based on primary data which was collected by

SECONDARY DATA

The secondary data was collected from various journals, books, website.

TOOLS FOR THE STUDY

- **O** Likert scale Analysis
- **O** Ranking analysis

LIKERT SCALE ANALYSIS

TABLE SHOWING ENHANCEMENT OF LEARNING EXPERIENCE THROUGH FLEXIBLE ACCESS TO CONTENT ON VIRTUAL PLATFORMS

S.NO	LEVEL OF SATISFACTION	NO. OF RESPONDENT	LIKERT SCALE (X)	TOTAL(FX)
1	Strongly agree	10	5	50
2	Agree	17	4	68
3	Neutral	48	3	144
4	Disagree	26	2	52
5	Strongly disagree	29	1	29
	TOTAL	130		343

(Source: Primary Data)

INFERENCE:

Likert Scale value 2.64 equal to middle value (3), so the respondents are neutral to the enhancement of learning experience through flexible access to content on virtual platforms.

RANKING ANALYSIS

TABLE SHOWING THE RANKING ANALYSIS CHALLENGES IN VIRTUAL PLATFORM IN E-LEARNING

CHALLENGE	RANK 1	RANK 2	RANK 3	RANK 4	RANK 5	TOTAL	HIGHEST RANK
Internet Connectivity Issues	80(5) 400	12(4) 48	15(3) 45	8(2) 16	15(1) 15	524	1 st
Lack of Interaction with Teachers & Peers	17(5) 85	66(4) 264	17(3) 51	25(2) 50	5(1) 5	455	2 nd
Technical Issues with Platforms	13(5) 65	34(4) 136	64(3) 192	14(2) 28	5(1) 5	426	3 rd
Difficulty in Understanding Concepts Online	24(5) 120	33(4) 132	32(3) 96	24(2) 48	17(1) 17	413	4 th
Distractions at Home	36(5) 180	23(4) 92	31(3) 93	7(2) 14	33(1) 33	412	5 th

(SOURCE: PRIMARY DATA)

.INFERENCE:

The majority of respondents find Internet connectivity is the biggest challenge in virtual learning, followed by limited interaction with teachers and technical issues. Difficulty in understanding concepts online highlights the need for better teaching methods. Home distractions also affect focus. Enhancing platform reliability, engagement features, and structured study environments can improve virtual learning experiences.

FINDINGS:

- Majority [61.1% (80)] of the respondents are male.
- Majority [46.2% (60)] of the respondents belong to the category of 18-25 years.
- Majority [44.6% (58)] of the respondents are undergraduate.
- Majority [42.3% (55)] of the respondents are students.
- Majority [40% (52)] of the respondents uses virtual platforms on a weekly basis.
- Majority [20% (26)] of the respondents uses the Coursera website.
- Majority [37.7% (49)] of the respondents are engaged in online lectures.
- Majority [24.6% (38)] of the respondents are remains neutral in effectiveness of virtual platforms.
- Majority [71.5% (93)] of the respondents are believing that the virtual learning can replace the traditional classroom learning
- The respondents are Neutral to the enhancement of learning experience through flexible access to content on virtual platforms.
- The respondents are Neutral to the internet connectivity issues hinder effective learning on virtual platforms.
- The respondents are Neutral to the virtual learning lacks face-to-face interaction, making engagement difficult.
- The respondents are Neutral to the technical issues like audio, video problem, login errors. Etc. which creates barrier to learning.
- The respondents are Neutral to the virtual platforms provides opportunities for self-paced learning.
- The majority of the respondents ranked Internet Connectivity issues as first factor that challenges in virtual platform in E-learning for the education.

SUGGESTION:

Based on the findings, here are some recommendations for improving virtual platform in E-learning for learners:

- INCREASE AWARENESS & TRAINING Hold workshops for students and educators to explain to them how to use virtual platforms much better for learning events.
- ENHANCE ENGAGEMENT FEATURES As an encouragement to virtual learning platforms, interactive tools should include live Q&A, breakout rooms, and gamification.
- PROMOTE HYBRID LEARNING MODELS Encourage the combo of virtual and physical education to retain the advantages of both traditional and digital methods.
- TECHNICAL CHALLENGES The platform should make it optimizable for the platform in such a way so as to not have login problems and glitches in audio, video, or compatibility features.
- ENHANCE SELF-PACED LEARNING SUPPORT Better guiding self-paced students with improved virtual-self-learning modules be made available.
- IMPROVE COURSE VARIETY & ACCESSIBILITY The institution could consider encouraging more courses through many virtual platforms other than Coursera.

CONCLUSION:

E-learning has changed the education sector in Coimbatore by providing flexibility and ease of access. However, this study shows that the learners still find themselves in a deep pile of challenges like just poor internet connectivity, technical glitches, and non-interactive atmosphere. Digital platforms do present a challenge for many students, and the lack of physical interaction makes it even harder to motivate and understand concepts. Most of them agree that virtual learning can replace traditional classrooms; however, some improvements still remain.

These challenges call for improved infrastructure, ICT training, and reinforcement of a participatory methodology in teaching to allow for effective teaching and learning. A hybrid model that merges online and offline learning could serve as a good compromise that will allow students to gain from both approaches. The addressing of these challenges would create an inclusive and effective online education system in Coimbatore. Given these adjustments, E-learning may be a smooth, engrossing, and empowering experience for the learner in the future.