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Online Learning and Its Influence on Student Engagement and Academic Performance

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Abstract. Advancement in technology and internet has revolutionized education. The sophisticated learning management systems and various learning platforms makes online learning more flexible, accessible, offers self-paced study opportunities for learners. In recent years online learning has transformed the landscape of education, offering unprecedented opportunities to learn anytime and anywhere. It connects students and educators across the globe. Online platforms offer a diverse range of educational resources, including interactive multimedia content, virtual classrooms, discussion forms and assessment tools accessible to learners anywhere with an internet connection. The study explores students' attitudes towards online learning, impact on students' participation, motivation and overall academic performance. This research investigates the multifaceted perspectives of students enrolled in online courses across different age groups. The study examines factors influencing students' perception, including technological proficiency, learning preferences and the quality of instruction design and facilitation. It is important to address the challenges in adopting online learning and develop effective strategies to improve the quality of online learning experience for students.

Index Terms- Online learning, internet connectivity, educational resources, technological skills

I Introduction

The main aim of education across the world is to create effective learners who are able to collaborate and communicate across culture and geographies. The education system all over the world is going through a massive change in this age of digitalization, and international collaboration. Online learning, also known as e-learning, has become an increasingly popular method of education in the digital age. With the rapid advancement of technology and the widespread availability of internet, online learning has transformed the way people access knowledge and learn new skills. Moreover, the shift towards the adoption of online learning was apparent during the Covid - 19 pandemic as the traditional in person mode of teaching was replaced by online learning.

Online learning is a system where the teacher and students don't need to be present at the same place and same time and is flexible with regards to delivery. Online learning is becoming more prominent in the continuing education sector and is being

increasingly used by working professionals looking to upgrade their skillset, it is also used by students interested in learning concepts beyond the scope of their syllabus as well as by students with disabilities who cannot attend schools and by students who reside in remote areas. Technology facilitates learning around the clock, throughout the week, aiding in the acquisition of essential skills required in the contemporary era. Moreover, it enhances student involvement and drive, thereby expediting the learning process. Furthermore, technology possesses the capability to revolutionize education by introducing a fresh paradigm of interconnected teaching. This framework establishes connections between educators and their students, as well as with professional materials, tools, test preparation models and platforms, to enhance their teaching methods and customize the learning experience. Startups with innovative solutions are gradually gaining visibility.

There is rising demand for training programs relevant to diverse sectors with individuals increasingly considering online learning as a more economical substitute for traditional educational methods. Nearly 90% of Indian youngsters have access to a smartphone within their households and possess the necessary skills to operate it, indicating prevalent digital connectivity. In the last decade, technological advancements have notably enhanced online education, incorporating the integration of information and communications technology (ICT) in classrooms and the utilization of cloud-based platforms, virtual reality (VR), and augmented reality (AR). According to Online Education market report in India 2023-2028, as of 2022, the online education industry was valued at INR 361.68 Bn with projection indicating a surge to INR 837.11 Bn by 2028, showcasing a compound annual growth rate (CAGR) of around 13.68% from 2023 to 2028.

II Literature Review

Education is progressing rapidly due to advancements in technology. When new changes arise, educators must seek ways to adjust and integrate them into their teaching practices. In the realm of e-learning, it is crucial for learners to cultivate and sustain their motivation independently, being prepared to navigate challenges without the immediate presence of an instructor or teacher (Al Jardani, 2014). The widespread utilization of websites has created avenues for the advancement of virtual communities and collectives. Corresponding via email, engaging in conferences, participating in online chats, collaborating through platforms such as Google Drive, Google Docs, Google Hangouts, Facebook, Twitter, among others, have become prevalent in digital educational settings (Sun & Chen,2016). Factors such as user-friendliness, alignment with occupational needs, transferability of skills and knowledge, as well as adaptability in the learning process play a significant role in shaping students' decision to embrace e-learning. These factors play a crucial role in cultivating skills that are directly relevant to the job market among the learners. Educators are advised to take into account the aforementioned factors when strategizing and crafting their instructional materials and activities for e-learning purposes (Singh & Singh, 2017). Student's perspectives offer crucial, firsthand observation into their experiences and explanations (Dawson et al.2019).

In order to assess the academic achievement and learning outcomes of students, the primary influential factor is the utilization of E-Learning platforms. This is subsequently followed by perceived utility, system efficiency, institutional standards, and instructor effectiveness (Alam et al., 2021).

Objective of the Study

This study aims to analyze the use of online learning by students of different age groups and to find its effectiveness in their academic performance.

III Methodology

This paper draws evidence from a sample of students studying in Mumbai. Data was collected solely from primary sources through an online google form. The objective of the survey was to determine the student's perceptions regarding their learning educational face within the online learning environment. Using the questionnaire proved to be the most suitable approach for data collection. Descriptive analysis was done on the data collected through this study to find out the most influencing factors and t-test and one-way Anova was used to test the hypothesis.

Hypothesis1

- **H_0:** There is no significant difference among age groups with respect to online learning.
- **H_1:** There is significant difference among age groups with respect to online learning.

IV Descriptive Analysis

A total of 185 students were participated in the survey. In descriptive analysis factors like their gender, age, the device they are using for online learning, opinion regarding online learning and its impact on academic performance is studied and analysis obtained is described below.

Table-1: Summary Analysis of the Demographic Features using Frequency, Percentage

Particulars	Frequency	Percentage
Gender		
Male	119	64.3
Female	66	35.7
Total	185	100.0
AGE		
16-18	77	41.6
18-20	42	22.7
Above 20	66	35.7
Total	185	100.0

For online learning one must have a device such as laptop, desktop, smartphone, tablet or a phone and an internet connection. Study revealed that students are using more than one device.

Table-2: Device used for Study

Device used for online study	Responses		Percent of cases
	Frequency	Percentage	
Laptop	92	32.6%	50.0%
Desktop	10	3.5%	5.4%
Tablet	8	2.8%	4.3%
Smartphone	138	48.9%	75.0%
Phone	34	12.1%	18.5%
Total	282	100.0%	153.3%

Dichotomy group tabulated at value 1.

Among all devices smartphones is the most popular device used by many as it is easy to carry and use. 95% student stated that they have stable internet connection.

Table -3: Opinion Regarding Online learning

Question	Mean	SD
Instructors' effectiveness	3.57	0.948
Ability to review material & learn at own pace	3.24	1.084
Quality of Instruction design and facilitation	3.79	1.216
Learning can be done any time & any where	3.94	0.998
Visualization makes it easier to understand	3.92	1.021
Comfortable with using technology	3.88	0.897
Access to wide range of resources like recorded lectures, You Tube videos makes it easier to understand the topic.	4.06	1.064
Proficiency in language	3.78	0.814
Improvement Technological Skills	3.93	0.879
Save money and time	4.02	0.869
Comfortable with online learning platforms	3.76	1.048
Can enroll in multiple courses	4.09	0.823

Highest weighted mean of 4.09 indicates that students can enroll in multiple courses to improve their academic grade or to improve their skill sets so that they are job ready when they complete their studies. Followed by 4.06 says that respondent prefer online classes as they get access to wide range of resources like recorded lecture through which they can clear their doubts, next highest mean of 4.02 indicates students prefer online learning since it is cost effective as they do not need to travel which saves their time.

Table-4: Academic Performance

Question	Mean	SD
You are able to submit assignment/ homework before it is due	3.97	0.881
You are able to complete online exam on time	3.79	1.060
Online exam pattern helps to score more as compared to off-line examination	3.73	1.171
Easier to prepare as exams mostly follow the MCQ pattern	4.09	0.976

Highest weighted average of 4.09 indicates that it is easier to prepare in online examination as online exams are majorly based on objective type question.

Hypothesis 1

- Null Hypothesis: Opinion regarding the factors of online learning is equal to average level.
- Alternate Hypothesis: Opinion regarding the factors of online learning is above average level.

Table-5: t test for specified value (Average=3) of statements on online learning

Question	Mean	SD	t value	p value
Instructors effectiveness	3.57	0.948	8.223	<0.001**
Ability to review material & learn at own pace	3.24	1.084	3.053	0.003
Quality of Instruction design and facilitation	3.79	1.216	8.886	<0.001**
Learning can be done any time & any where	3.94	0.998	12.746	<0.001**
Visualization makes it easier to understand	3.92	1.021	12.242	<0.001**
Comfortable with using technology	3.88	0.897	13.274	<0.001**
Access to wide range of resources like recorded lectures, You Tube videos makes it easier to understand the topic.	4.06	1.064	13.542	<0.001**
Proficiency in language	3.78	0.814	13.006	<0.001**
Improvement Technological Skills	3.93	0.879	14.390	<0.001**
Save money and time	4.02	0.869	15.096	<0.001**
Comfortable with online learning platforms	3.76	1.048	9.882	<0.001**
Can enroll in multiple courses	4.09	0.823	17.957	<0.001**

Since p value is less than 0.01, null hypothesis is rejected at 1% level with regards to all the statements of opinion regarding online learning. Based on mean scores, opinion regard to all the statements on online classes is above average level.

Hypothesis 2

- **H_0:** There is no significant difference among age groups with respect to online courses
- **H_1:** There is significant difference among age groups with respect to online courses.

Table-6: ANOVA test for significant differences among Age group with respect to factors of online learning

Factors	Age Group in Years			F value	P value
	16-18	18-20	20 & above		
Opinion regarding online classes	45.65 (6.75)	44.64 (5.94)	47.18 (6.46)	2.133	0.121
Academic performance	16.039 (2.43)	15.38 (2.78)	15.18 (2.94)	1.939	0.147
Overall perceptions	61.69 (8.09)	60.02 (7.81)	62.36 (8.46)	1.073	0.344

Note: The value within bracket refers to SD

Since p value is greater than 0.05, there is no significant difference among age group of online learners with regard to learning, academic performance and overall perceptions. Hence the null hypothesis is accepted at 5% level of significance.

Benefits of online learning

Online learning facilitates personalized learning experiences according to individual preferences and learning styles. Learners can learn any time and at their own pace, they can review the course contents multiple times explore additional resources to deepen their knowledge and broaden their skills, they can participate in quizzes to tests themselves and gauge their understanding of the course content. They can also learn from simulations and multimedia presentations to understand the concepts better. With the availability of high-speed internet, online learning has become accessible to a diverse range of learners including those in remote areas. Thus, it bridges the educational gap between rural and urban students.

Challenges

The main challenges faced by students who use online learning platform is technical issues such as internet connectivity and software compatibility. The lack of face-to-face interaction can also result in disengagement in study. Some research has indicated that students perceive online evaluation as lacking effectiveness when devoid of valuable feedback.

IV Conclusions

Online learning is a powerful and transformative approach to education as it offers flexibility, accessibility and personalized learning experiences to learners all over the world. As technological innovation continues, people across all age groups are becoming tech savvy. As there is a constant need to upgrade one's skill set to fit into this competitive world, online learning is poised to play a greater role in shaping the future of education. Research also highlights that almost all students are using resources found online to expand opportunities for lifelong learning and skill development. Students feel that online learning enhances their capability to search for additional learning resource on the internet which helps them learn independently and also reduces the time required to prepare for examinations, in addition it also saves time spent on traveling to their educational institution for classes. Consequently, it is imperative for the educational system to transition towards online instructional methods in order to uphold teaching standards and enhance student contentment.

References

1. Alam, M. M., Ahmad, N., Naveed, Q. N., Patel, A., Abohashrh, M., & Khaleel, M. A. (2021). E-learning services to achieve sustaAlam, M. M., Ahmad, N., Naveed, Q. N., Patel, A., Abohashrh, M., & Khaleel, M. A. (2021). E-learning services to achieve sustainable learning and academic performance: An empirical study. Sustainability (Switzerland), 1. Sustainability (Switzerland), 13(5), 1–20.
2. Dawson, P., Henderson, M., Mahoney, P., Phillips, M., Ryan, T., Boud, D., & Molloy, E. (2019). What makes for effective feedback: Staff and student perspectives. Assessment & Evaluation in Higher Education, 44(1), 25–36.
3. Eom, S. B., Wen, H. J., & Ashill, N. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. Decision Sciences Journal of Innovative Education, 4(2), 215–235.
4. https://www.marketresearch.com/

5. Jardani, K. S. Al. (2014). E-Learning in Higher Education; Challenges and Opportunities. International Journal of Innovation, Creativity and Change, 14(11).
6. Singh, A., & Singh, L. B. (2017). E-Learning for Employability Skills: Students Perspective. Procedia Computer Science, 122, 400–406. https://doi.org/10.1016/j.procs.2017.11.386.
7. Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. Journal of Information Technology Education: Research, 15(2016), 157–190. https://doi.org/10.28945/3502.