

An Assessment of the Effectiveness of Digital Learning Platforms on Student Academic Performance with Reference to the Kundapura Region

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Abstract: *This study assesses the digital learning platforms and their impact on student academic performance. As the online education system is trending in the present scenario, understanding how these digital platforms influence learning outcomes is the need of the hour. The research examines the effect of digital learning platforms on students' academic performance. Through the online survey method, the data were collected. Findings indicates that while digital platforms offer flexibility and access to diverse resources, their effectiveness largely depends on factors such as platform usability, instructional design, and student motivation etc. The study concludes that digital learning can positively affect academic performance when it is used wisely.*

Keywords: Digital Learning, Student Performance, Digital platforms, Academic Performance

I. INTRODUCTION

Digital learning platforms (DLPs) are online systems or tools designed to support the delivery, management, and evaluation of educational content. These platforms have transformed from basic online storage spaces for course materials into comprehensive, interactive environments that enhance various perspectives of teaching and learning. The rapid evolution of information and communication technologies (ICT) over the past decades has led to the widespread integration of digital learning tools in educational settings worldwide. Digital learning platforms (DLPs) have become a fundamental component of higher education, facilitating a range of learning experiences, including online courses, blended learning, flipped classrooms, and self-paced study.

Several years ago, education primarily relied on traditional teaching methods, with no advanced technologies in place. However, over the past decade, particularly during the COVID-19 pandemic, there has been a significant shift towards the integrating technology into the educational system. The improvement of digital technologies has led to a transition from classroom settings to technology-enhanced learning environments. Learning Management Systems (LMS) like Moodle, Blackboard, and Canvas, along with the recent introduction of AI tools, are broadening their reach. This study analyzing the effect of digital learning on students' studies and their engagement with these technologies.

In the Kundapura region, where institutions are increasingly adopting technology in teaching, it is crucial to assess the effectiveness of digital learning platforms. This study examines how it effects on students' academic performance, compares outcomes across different platforms, and identifies the challenges faced by both learners and institutions.

Objectives

1. To examine the effect of digital learning platforms on students' academic performance.
2. To compare the learning outcomes of students using a specific digital learning platform.
3. To identify the challenges that limit the successful adoption of digital learning platforms.



II. REVIEW OF LITERATURE

Baso Intang Sappaile, EkaDonna Fauziah Lasinggaru, and Sabil Mokodenseho (February 2023) conducted a Research study that found digital learning platforms significantly increase student engagement, leading to improvising academic achievement. The combined effect of these platforms and heightened student engagement contributes to better educational outcomes.

Ritika Anand and Naveen Gupta (July 2023) found that online learning brings both benefits and challenges for students. On the positive side, it helps learners become more independent, encourages them to participate actively in class, and better equips them for higher studies and future jobs. Many students now depend less on teachers for information and instead turn to online resources. This shift assigned them to take every responsibility for their own learning, customize their study experiences, and share useful feedback about courses. Overall, e-learning shows strong potential to improve academic performance.

Shalvi Kumari (February 2025) highlighted that technology in education can greatly improve student learning. Digital tools, online platforms, and artificial intelligence (AI) make learning more engaging, personalized, and effective. However, for technology to be successful in educational settings, schools must plan effectively, support their teachers, and address ethical considerations. When implemented correctly, technology creates modern learning techniques that prepare students for a digital future.

Saurabh Kumar Sharma, Shivam Sharma, and Professor Arvind Panwar (April 2025) emphasized that e-learning platforms should incorporate mixed modes, adaptive learning, and low-bandwidth options to ensure equity and enhance performance. These digital learning platforms increase student engagement, motivation, and performance through personalized learning, interaction, feedback, and gamification. However, their effectiveness relies on technology, instructor support, and students' digital skills, necessitating adequate resources and training in higher education.

M. Akhila Reddy and V. Nicklesh Chary (July–September 2025) highlighted that digital learning is now essential in higher education, especially for young students. Blended and online formats are preferred for their accessibility and effectiveness, with private institutions leading adoption. Platforms like Coursera and YouTube improve engagement, though challenges such as technical issues and delayed feedback remain. Overall, digital platforms are widely accepted and play a crucial role in modern Indian education.

Hypothesis

H01: Digital learning platforms do not affect students' academic performance.

H11: Digital learning platforms have a significant effect on students' academic performance.

H02: There is no significant difference in learning outcomes among students using different digital learning platforms.

H12: There is a significant difference in learning outcomes among students using different digital learning platforms.

Conceptual Framework

The conceptual framework of this study highlights digital learning platforms as the independent variable that directly influences students' academic performance, the dependent variable. Digital platforms provide students with access to interactive resources, flexible learning modes, and personalized study opportunities that can enhance understanding, retention, and overall achievement. By enabling self-paced learning, fostering active participation, and offering diverse multimedia tools, these platforms are expected to positively impact academic performance when effectively utilized.

Theoretical Background

The advantage of digital learning platforms on student academic performance is a multifaceted issue supported by various educational and psychological theories. The theoretical framework for a study on this topic, with a specific concentrate on the Kundapura region, should integrate established concepts with local context. In addition, the **Technology Acceptance Model (TAM)** highlights that students' perceptions of ease of use and usefulness of digital platforms strongly influence their willingness to adopt them, which in turn impacts academic outcomes. **Connectivism**



Theory also plays a role, emphasizing that learning in the digital age relies on building networks of information across platforms and communities. Together, these theories provide a foundation to analyse how digital learning platforms compare with traditional methods and how challenges such as access, motivation, and distractions shape their effectiveness on student academic performance.

III. RESEARCH METHODOLOGY

In the current study, the researchers used an online survey method to measure participants' attitudes, perceptions, and levels of agreement on specific topics. The Google link questionnaire was created and distributed to 400 people in the age group between 18-40. The 120 responses were received and taken for further study. Out of 120, 57 are male and 63 are female. 109 postgraduates, 5 graduates, 1 undergraduate, and 5 others.

Scope of the Study

This study focused on analysing the impact on digital learning platforms improving on students' academic performance. It focuses on analysing how these platforms giving contribution to learning outcomes, with special attention to one specific digital learning platform to frame meaningful comparisons. The current study is specific to analyzing and comparing the learning outcomes of students who use a specific digital learning platform.

Further, the scope extends to understanding the challenges and barriers that difficult to adopt the digital learning platforms, including technological, infrastructural, and psychological factors faced by students.

Limitations

The study is restricted to the Kundapura region, which may limit a particular geographical area, and it is limited to Undergraduate, Graduate, and postgraduate students within the selected region. The sample size was limited to 120 students, and it may not reflect the entire student population.

IV. DATA ANALYSIS AND INTERPRETATION

Descriptive Statistics

Statistic / Variable	Age	Gender	Qualification	Duration of using digital learning platforms
N	120	120	120	120
Range	3	1	2	3
Minimum	1	1	1	1
Maximum	4	2	3	4
Mean	1.08	1.53	2.95	1.71
Std. Deviation	0.370	0.501	0.254	0.974
Variance	0.137	0.251	0.065	0.948
Skewness	5.933	-0.135	-5.623	1.340
Std. Error (Skewness)	0.221	0.221	0.221	0.221
Kurtosis	39.123	-2.016	34.323	0.753
Std. Error (Kurtosis)	0.438	0.438	0.438	0.438

Source: Primary Data

The demographic details of respondents reveals that the sample is largely homogeneous in terms of age, with the majority concentrated in the youngest category. The very low mean age value ($M = 1.08$, $SD = 0.37$), along with high



positive skewness (5.93) and extreme kurtosis (39.12), indicating that most participants were clustered within the lower age group with minimal variation. Gender distribution in this analysis was relatively balanced ($M = 1.53$, $SD = 0.50$), suggesting a near-equal representation of males and females. The skewness (-0.13) and kurtosis (-2.02) values confirm a symmetric and flat distribution, which is typical of binary variables.

In terms of qualification, the findings notifies that respondents were predominantly from the highest educational category ($M = 2.95$, $SD = 0.25$). The strong negative skewness (-5.62) and high kurtosis (34.32) reinforce that the sample is heavily concentrated among highly qualified individuals, with very fewer representation from lower educational levels. Regarding the duration of digital learning platform usage, the mean score ($M = 1.71$, $SD = 0.97$) suggests that most of the respondents have been relatively recent users. The positive skewness (1.34) which indicates that the majority reported shorter durations of use, while only a few respondents had longer experience.

Overall, the descriptive statistics highlight that the study of the sample consists predominantly of younger, highly qualified individuals, with balanced gender representation and a tendency toward shorter durations of digital platform learning usage.

Hypotheses Testing

H11: Digital learning platforms have a significant effect on students' academic performance

Chi-Square Test:

	Chi-Square	df	Asymp. Sig.	Minimum expected cell frequency
Learning through digital platforms helps to remember content more effectively.	57.200 ^a	3	.001	30.0
Digital learning resources help to prepare more effectively for assessments.	56.333 ^a	3	.001	30.0

Source: Primary Data

The Chi-Square test revealed significant differences in student responses regarding the effectiveness of digital learning. For the statement “*Learning through digital platforms helps me remember content more effectively,*” $\chi^2 (3, N = 120) = 57.200$, $p < .001$, most students selected **Agree (57)** or **Neutral (43)**. Similarly, for “*Digital learning resources help me prepare more effectively for assessments,*” $\chi^2 (3, N = 120) = 56.333$, $p < .001$, the majority chose **Agree (55)** or **Neutral (42)**. These results indicate that students commonly view digital platforms as effective tools for memory retention and assessment preparation, with responses showing significant variation across categories. It means the null hypothesis is H01 rejected and the alternative H11 is accepted.

ANOVA Test

One-Way ANOVA Results on the Effectiveness of Digital Learning Platforms

ANOVA

Learning through digital platforms helps me remember content more effectively.					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.576	2	.788	1.037	.358
Within Groups	88.924	117	.760		
Total	90.500	119			

A one-way ANOVA was conducted to analyze whether there is any differences among groups in their views regarding the statement “*Learning through digital platforms helps me remember content more effectively.*” The results notified



that it was not statistically significant, $F(2,117) = 1.037$, $p = 0.358$, indicating that there is no meaningful difference between the groups. This means students across all groups had similar views on the Effectiveness of digital platforms in helping them remember content.

H12: There is a significant difference in learning outcomes among students using different digital learning platforms
Chi-square test:

	Chi-Square	df	Asymp. Sig.	Minimum expected cell frequency
Learning through a digital platform feels more engaging and interactive compared to other approaches.	137.000 ^a	4	.001	24.0
The content provided in the digital platform is clearer than what I received through traditional learning.	63.333 ^a	4	.001	24.0

The Chi-Square test showed significant differences in student responses regarding engagement and clarity in digital learning. For the statement “*Learning through a digital platform feels more engaging and interactive compared to other approaches,*” $\chi^2(4, N = 120) = 137.000$, $p < .001$, indicating a strong preference for digital platforms. For “*The content provided in the digital platform is clearer than what I received through traditional learning,*” $\chi^2(4, N = 120) = 63.333$, $p < .001$, most students selected “**Maybe/Not sure (51)**” or “**Probably yes (37)**”, showing that while many find digital content clearer, a substantial portion remain uncertain. Thus, the results suggest that students generally realize digital platforms as more engaging and somewhat clearer than traditional methods, with significant variation in responses. It implies that the null hypothesis H02 is rejected and the alternative H12 is accepted.

One-Way ANOVA Results on the Clarity of Digital Platform Content

The content provided in the digital platform is clearer than what I received through traditional learning.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.703	3	.568	.608	.611
Within Groups	108.289	116	.934		
Total	109.992	119			

This study was conducted to analyze differences among groups in their way of responses to the statement “*The content provided in the digital platform is clearer than what I received through traditional learning.*” The results was not statistically significant, $F(3,116) = 0.608$, $p = 0.611$. This denoted that there is no meaningful difference between the groups, and students across all groups expressed similar views on the clarity of content provided through digital platforms compared to traditional learning.

V. FINDINGS

The respondents were predominantly younger ($M = 1.08$, $SD = 0.37$), with high skewness (5.93) and kurtosis (39.12), indicating a strong concentration in the lowest age group.

Gender distribution was nearly balanced ($M = 1.53$, $SD = 0.50$) with a symmetric and flat distribution.

Most of the respondents were highly qualified ($M = 2.95$, $SD = 0.25$), confirmed by strong negative skewness (-5.62).

Digital learning platform usage was relatively recent ($M = 1.71$, $SD = 0.97$), with positive skewness (1.34), showing most had short-term usage experience.

Considerable differences were found in responses for **memory retention** ($\chi^2 = 57.200$, $p < .001$) and **assessment preparation** ($\chi^2 = 56.333$, $p < .001$). Students generally agreed that digital platforms improve both.

For **engagement and interactivity**, results were strongly significant ($\chi^2 = 137.000$, $p < .001$), with students perceiving digital platforms as more engaging.

For **clarity of content**, responses also showed significant variation ($\chi^2 = 63.333$, $p < .001$), but many students expressed uncertainty, showing mixed perceptions.

No significant differences in the groups were found for **memory retention** ($F = 1.037$, $p = 0.358$).



Similarly, no major group differences emerged for **clarity of content** ($F = 0.608$, $p = 0.611$).

This representing that perceptions regarding effectiveness and clarity of digital platforms were **consistent across different groups**.

The study shows that students widely perceive digital learning platforms as effective for memory and assessment preparation, engaging, and somewhat clearer than traditional learning, though some uncertainties regarding content clarity. Importantly, these good perceptions are consistent across demographic groups, indicating a broad acceptance of digital learning.

Suggestion

Since the students, strongly agree that digital platforms are engaging, institutions can enhance this further by incorporating gamification, quizzes, and interactive simulations to sustain student interest.

Although many students found digital content clearer, a large proportion were unsure. Institutions should focus on simplifying explanations, adding visuals, and providing real-world examples to make digital learning materials more understandable.

To overcome uncertainty, platforms should integrate AI-driven personalized feedback and regular assessments to track student progress and improve clarity.

Since ANOVA results show no significant difference across groups, combining digital with traditional approaches (blended learning) could maximize benefits without alienating students who are unsure about full digital adoption.

Offering workshops or short training sessions can help students become more comfortable with digital platforms, reducing hesitation and ensuring more effective use of available resources.

While digital learning is seen as engaging and useful for assessments, institutions should focus on enhancing clarity, offering personalized support, and blending traditional methods to ensure inclusivity and effectiveness.

VI. CONCLUSION

Based on the analysis, the study interprets that digital learning platforms are generally perceived positively by students in terms of memory retention, assessment preparation, engagement, and clarity of content. The Chi-Square tests revealed statistically significant differences in responses across categories, suggesting that while many students agree with the effectiveness of digital learning, there is noticeable variation in opinions, particularly regarding clarity, where some remain uncertain. However, the ANOVA results showed no statistically significant differences between groups, meaning that perceptions about digital learning effectiveness and clarity are consistent across different respondent groups. Overall, students view digital platforms as beneficial, especially for engagement and preparation, but the effectiveness is not uniform, and further efforts may be required to address clarity and enhance learning outcomes.

REFERENCES

- [1]. Baso Intang Sappaile, Lasinggaru, E. F., & Mokodenseho, S. (2023, February). *The impact of digital learning platforms on student engagement and academic achievement*.
- [2]. Anand, R., & Gupta, N. (2023, July). *Positive and negative impacts of online learning on academic performance*.
- [3]. Kumari, S. (2025, February). *Enhancing education through technology: The role of digital tools and AI in modern classrooms*.
- [4]. Sharma, S. K., Sharma, S., & Panwar, A. (2025, April). *E-learning platforms in higher education: Mixed modes, equity, and performance enhancement*. Reddy, M. A., & Chary, V. N. (2025, July–September). *Digital learning in Indian higher education: Trends, platforms, and challenges*

