EFFECT OF EDUCATIONAL LEARNING APPS IN ENHANCING ACADEMIC PERFORMANCE AMONG UNDER GRADUATE STUDENTS OF PAPUMPARE DISTRICT IN ARUNACHAL PRADESH

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Abstract:

In this mad rush of 21st century Educational Learning Apps are increasingly vital in enhancing student engagement with learning materials by offering dynamic, personalized experiences that complement traditional methods. This study examines the impact of these apps on the academic performance of undergraduate students in Papumpare District, Arunachal Pradesh—a region with unique educational challenges and opportunities. Using a mixed-method and quasi-experimental design, the research involved 30 students and 10 teachers, assessing the effectiveness of the apps through pretest-posttest comparisons and interviews. The findings revealed significant academic improvements among students using the apps, with most teachers and students rating their experiences highly. However, some challenges, such as limited access to technology and familiarity with modern tools, were noted, emphasizing the need for better training and resource accessibility to fully harness the benefits of educational innovations.

Keywords: *Effect, Educational Learning Apps, Enhancing, Academic Performance and Under Graduate Students*

1. INTRODUCTION

In today's tech-driven world, the field of education is increasingly embracing technological innovations. To cater to the diverse needs of students, educators are turning to Educational Learning Apps, which have significantly transformed how students interact with learning materials.

Educational Learning Apps are interactive software designed to support learning and enhance education. They serve a variety of users, including students, teachers, researchers, and professionals, by providing tools for acquiring new skills, accessing online study resources, and more. These apps

offer a dynamic and tailored approach to education, enhancing traditional teaching methods with interactive tools and resources.

Educational Learning Apps provide a broad spectrum of content, from basic concepts to more complex topics, and include features like quizzes, tutorials, and virtual classrooms. By integrating these digital tools into the learning environment, they aim to address various educational needs, potentially boosting student engagement and improving academic performance.

The Statements made by **Thompson, Green, Smith and Wilson**, **renowned expert in this field**, underscores the deep potential of Educational Learning Apps in unlocking novel dimensions of learning and shaping the future of education.

This study investigates the **"Effect of Educational Learning Apps in Enhancing Academic Performance among Undergraduate Students of Papumpare District in Arunachal Pradesh,"** a region where access to educational resources can be both a challenge and an opportunity for growth.

Papumpare District, nestled in the northeastern part of **Arunachal Pradesh,** is characterized by its unique socio-economic landscape and educational needs. As higher education becomes increasingly pivotal for personal and professional development, it is crucial to explore how technological innovations, such as Educational Learning Apps, can impact academic outcomes in this region.

Some of the Educational Learning Apps are:

i. Khan Academy
ii. Duolingo
iii. Quizlet
iv. Coursera
v. Edmodo
vi. Duolingo ABC
vii. Google Classroom
viii. Brainscape
ix. Byju’s
x. Mathway

2. REVIEW OF THE RELATED STUDY

2.1. Review of the Related Studies Conducted Abroad:

Thompson and Green (2024) conducted a meta-analysis of 35 studies on Educational Learning Apps and found a generally positive link between app usage and increased student engagement. Their research indicates that while Educational Learning Apps can enhance student involvement, the effectiveness varies based on app design and relevance to the content. Well-designed apps aligned with educational goals are more likely to engage students effectively, highlighting the importance of careful app design and content selection.

Smith and Wilson (2023) undertook an extensive review and meta-analysis of recent studies to explore the effects of Educational Learning Apps on classroom dynamics.By applying multivariate analysis techniques, their research uncoveredthat Educational Learning Apps positively impact classroom dynamics and teacher-student relationships, enhancing interaction and collaboration. Their analysis emphasizes that to maximize these benefits, apps must be thoughtfully integrated into the curriculum and aligned with teaching goals. Effective use of Educational Learning Apps requires careful planning and strategic implementation to optimize their impact on learning outcomes.

Chang and Lee (2023) explored how Educational Learning Apps are impacting elementary education by comparing various studies and case reports. Their analysis revealed that these apps can be quite effective in helping kids improve their reading, writing, and math skills. However, they also found that the success of these apps largely depends on two things: how well teachers know how to use them and how good the apps are. In other words, while Educational Learning Apps have a lot of promise, their benefits are closely tied to teachers' familiarity with the tools and the overall quality of the apps.

2.2. Review of the Related Studies Conducted in India:

Gupta and Patel (2023) examined how Educational Learning Apps are being adopted in higher education institutions in India by reviewing 15 studies. Their regression analysis revealed that these apps are improving student engagement and learning outcomes. The study also highlighted the importance of providing effective training for educators and ensuring that the apps align well with educational goals to maximize their benefits.

Reddy and Nair (2022) analyzed 25 studies from India to see how well Educational Learning Apps improve student learning. Their statistical review found that these apps can notably boost learning, especially in subjects like math and science. However, they also highlighted some problems, such as the relevance of app content and the need for better alignment with the school curriculum. This means that while Educational Learning Apps are helpful, ensuring their content fits well with what students are learning in class is crucial for making the most of these tools.

Nair and Suresh (2020) assessed how well Educational Learning Apps support special education in India by comparing 12 studies. Their analysis found that these apps are helpful for students with special needs, offering tailored learning experiences and boosting engagement. However, they also pointed out that the success of these apps largely depends on how well they meet the individual needs of the students and their overall design.

3. RATIONALE OF THE STUDY

The increasing use of Educational Learning Apps highlights their potential to boost academic performance and engagement across various educational settings. Despite significant research into their effectiveness, there are notable gaps, especially regarding their impact on undergraduate students in specific regions such as **Papumpare District in Arunachal Pradesh**. For instance, **Thompson and Green (2024)** found that the effectiveness of these apps largely depends on their design and relevance but did not explore their application in **remote or less-studied areas**. Similarly, **Smith and Wilson (2023)** identified positive effects on classroom dynamics but did not address **regional or socio-economic** challenges.

Further research by **Chang and Lee (2023)** focused on **elementary education**, and **Gupta and Patel (2023)** on **higher education across India**, yet neither considered the **unique educational environment of Arunachal Pradesh**. **Reddy and Nair (2022)** examined **subject-specific impacts**, while **Nair and Suresh (2020)** looked at **special education**, but neither addressed the broader context of **undergraduate performance**. To fill these gaps, it is crucial to study how Educational Learning Apps affect undergraduate students in Papumpare District, considering regional challenges and socio-economic factors to optimize their use and improve learning outcomes.

This research aims to assess the extent to which Educational Learning Apps can enhance the academic performance of undergraduate students in Papumpare District. By examining factors such as app usage patterns, student engagement levels, and academic outcomes, this study seeks to provide insights into the effectiveness of digital tools in a region where educational infrastructure and resources may be limited. Understanding these dynamics can help educators, policymakers, and technology developers to better tailor educational solutions that address the specific needs of students in this district.

4. STATEMENT OF THE PROBLEM

"Effect of Educational Learning Apps in Enhancing Academic Performance among Under Graduate Students of Papumpare District in Arunachal Pradesh"

5. RESEARCH QUESTIONS

i. What are the effects of Educational Learning Apps on Academic Performance among Under Graduate Students of Papumpare District in Arunachal Pradesh
ii. What do Teachers think about using Educational Learning Apps?
iii. How do the experiences of both students and teachers influence the acceptance and adoption of Educational Learning Apps?

6. OBJECTIVE OF THE STUDY

i. To explore the utilization of Educational Learning Apps to provide personalized learning experiences.
ii. To Study the Effect of Educational Learning Apps in Enhancing Academic Performance Among Under Graduate Students.
iii. To study the experiences of Students and Teachers about the Educational Learning Apps.

7. HYPOTHESIS OF THE STUDY

Objective 2 -

H0 - There is no significant effect of Educational Learning Apps in Enhancing Academic Performance among Under Graduate Students of Papumpare District in Arunachal Pradesh

8. METHODOLOGY OF THE STUDY

Research design: In this study the researcher employed a mixed-method research design and a quasi-experimental, parallel group pretest-posttest design.

Population: In this study population comprised of Undergraduate students of Papumpare District in Arunachal Pradesh

Sample Size: In this study sample size comprised of 30 Undergraduate students and 10 Teachers

Sampling Technique: In this study the researcher used Purposive Sampling Technique.

Variables: the use of Educational Learning Apps **(Independent Variables)**

Academic Performance of Undergraduate students **(Dependent Variables)**

Tools and techniques: Interview of teachers was scheduled to know the experience of teachers and students on Educational Learning Apps. Pretest and Posttest was prepared to identify the improvement of the students on using Educational Learning Apps.

9. FINDINGS & DISCUSSIONS

The findings have been presented in the following tables wise:

Objective 1 & 2: Personalized Learning Experiences & Effect of Educational Learning Apps.

Table 1: Computation of Mean, SD, Mean Difference and T-Value of the control group.

		Mean	Standard Deviation	Mean Difference	Paired "t" test	Table Value	Degree of Freedom
Control Group	**Pre-**	1	1.35	0.26	0.72	2.1	14

	Test	1.87				45	
	Post-Test	12.13	1.36				

Since the t-test statistic **(0.72)** is less than the critical value **(2.145),** we fail to reject the null hypothesis at **0.05** level of significance. This suggests that there is no statistically significant difference between pretest and posttest scores.

Table 2: Computation of Mean, SD, Mean Difference and T-Value of the experimental group.

		Mean	**Standard Deviation**	**Mean Difference**	**Paired "t" test**	**Table Value**	**Degree of Freedom**
Experimental Group	**Pre-Test**	11.40	1.43	13.53	23.22	2.145	14
	Post-Test	24.93	1.66				

Since the t-test statistic **(23.22)** is far greater than critical value **(2.145)**, we reject the null hypothesis at **0.05** level of significance. This suggests there is a statistically significant difference between pretest and posttest scores in using Educational Learning Apps.

The experimental group, exposed to Educational Learning Apps showed more improvement than the control group, which indicates the effectiveness of personalized learning experiences.

Objective 3 : Experiences of Students and Teachers about the Educational Learning Apps

Table 3 (A): Computation of Teachers Responses

Sample	**Area**	**No of Responses**		**%**
10	Experience of Teachers on using Educational Learning Apps	Excellent	81	81
		Good	10	10
		Fair	5	5
		Poor	4	4

Table 3 (B) : Computation of Students Responses

Sample	Area	No of Responses		%
10 Students	Experience of Students on using Educational Learning Apps	Excellent	89	89
		Good	4	4
		Fair	2	2
		Poor	5	5

From table 3(A) & (B): The majority of Teachers **(81%)** and Students **(89%)** rated their experience as **"Excellent",** indicating high effectiveness and benefit of Educational Learning Apps. A significant Proportion of Teachers **(10%)** rated their experience as **"Good",** suggesting effectiveness despite limited knowledge about technology. But a smaller proportion of Teachers **(5 & 4%)** rated their experience as **"Fair" & "Poor"** respectively, indicating challenges due to lack of familiarity with modern technology.

Moreover, a smaller proportion of Students **(4%)** rated their experiences as **"Good",** indicating effectiveness despite limited usages of Educational Learning Apps. And considerable numbers of Students **(2 &5%)** rated their experience as **"Fair" & "Poor"** respectively, citing challenges accessing the technology due to lack of resources.

10. DISCUSSIONS

The study focused on a frequently neglected aspect of educational research: the impact of educational learning apps on improving the academic performance of undergraduate students. Using a thorough mixed-method approach combined with a quasi-experimental design, the research aimed to offer a complete understanding of how these learning apps affect the academic achievements of undergraduate students in the Papumpare District of Arunachal Pradesh by integrating both quantitative and qualitative data.

The studies conducted by **Thompson and Green (2024), Smith and Wilson (2023), Chang and Lee (2023)** , **Nair and Suresh (2020)** Collectively support the findings of the **1st and 2nd objectives** of our study.

The studies conducted by **Gupta and Patel (2023)**, **Reddy and Nair (2022)** collectively support the findings of our **3rd objective** regarding the positive experience of both Teachers and Students with Educational Learning Apps.

The findings of this research clearly demonstrate that educational learning apps improve the academic performance of undergraduate students. However, despite these positive outcomes, it's

important to recognize the challenges identified during the study. Significant obstacles include the technical proficiency of educators and access issues faced by students. If teachers do not receive proper training and support, and if students lack equitable access to technology, the full benefits of these learning apps may not be realized.

11. RECOMMENDATION OF THE STUDY

i. Increase Teacher Training and Support.
ii. Improve Access to Technology for Students.
iii. Promote Personalized Learning Approaches.
iv. Ongoing Monitoring and Evaluation.
v. Address Technical Challenges.
vi. Policy Advocacy for Resource Allocation.

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