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IMPACT OF DIGITAL LEARNING ENVIRONMENTS ON STRESS MANAGEMENT AMONG COLLEGE STUDENTS

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ABSTRACT

The rapid growth of digital technology has transformed the educational system worldwide. Digital learning environments such as online classes, virtual classrooms, learning management systems, and educational applications have become an integral part of higher education. Although digital learning provides flexibility and accessibility, it also creates academic pressure, mental stress, and psychological challenges among students. The present study aims to examine the impact of digital learning environments on stress management among college students. The study focuses on understanding how students cope with academic stress in technology-enabled learning settings. A survey method was adopted for the investigation with a sample of 400 college students selected through simple random sampling. The findings reveal that digital learning environments significantly influence students' stress management abilities, academic engagement, and psychological well-being. The study also highlights the importance of emotional support, time management, and digital literacy in reducing academic stress among learners.

KEYWORDS: *Digital Learning, Stress Management, Educational Psychology, College Students, Academic Stress, Online Learning, Psychological Well-Being, Higher Education, Coping Strategies, and Educational Technology.*

1. INTRODUCTION

Education has undergone tremendous changes with the advancement of digital technologies. Modern educational institutions increasingly use digital platforms to facilitate teaching and learning processes. Digital learning environments include online classrooms, virtual learning systems, educational websites, mobile learning applications, and video conferencing tools that support flexible and technology-based education.

In recent years, digital learning has become more popular among college students because of its accessibility, convenience, and interactive nature. Students can access learning materials anytime and anywhere through digital devices. However, continuous exposure to online learning environments may create stress, anxiety, emotional imbalance, and academic pressure among learners.

Stress management plays a crucial role in maintaining students' psychological well-being and academic success. College students often experience stress due to examinations, assignments, excessive screen time, poor internet connectivity, lack of social interaction, and difficulties in balancing academic and personal life. Educational Psychology emphasizes understanding students' emotional and behavioral responses in learning environments and developing strategies to improve mental health and learning outcomes.

Therefore, the present study attempts to investigate the impact of digital learning environments on stress management among college students and to identify the psychological factors associated with digital learning experiences.

2. NEED AND SIGNIFICANCE OF THE STUDY

The rapid development of digital technology has significantly transformed the educational system across the world. Digital learning environments have become an essential component of higher education due to the increasing use of online classes, virtual platforms, educational applications, and technology-enabled instructional methods. College students are highly dependent on digital learning systems for academic activities, communication, assignments, and examinations.

Although digital learning provides flexibility, accessibility, and innovative learning opportunities, it also creates psychological challenges such as stress, anxiety, emotional imbalance, and academic pressure among students. Excessive screen time, internet connectivity issues, lack of direct interaction with teachers, and continuous academic workload may negatively affect students' mental health and learning effectiveness.

Stress management is an important psychological factor that influences students' academic achievement, emotional stability, and social adjustment. Educational Psychology emphasizes the importance of understanding students' emotional behavior and developing healthy coping strategies in learning environments. Effective stress management helps students maintain concentration, motivation, confidence, and academic performance.

The present study is significant because it examines the relationship between digital learning environments and stress management among college students. The findings of the study may help teachers, parents, educational administrators, psychologists, and policymakers understand the psychological effects of digital learning on students. The study may also contribute to the development of supportive educational

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strategies, mental health programs, counseling services, and stress reduction techniques in higher education institutions.

Furthermore, the study may create awareness among students regarding healthy digital learning practices and effective stress management skills for improving psychological well-being and academic success.

3. STATEMENT OF THE PROBLEM

Digital learning environments have transformed the traditional educational process by introducing technology-based teaching and learning methods. Although digital education provides several educational benefits, it also creates psychological challenges among students. College students frequently face academic stress due to increased online activities, prolonged screen exposure, virtual assessments, lack of direct interaction, and difficulties in managing learning schedules. Many students experience emotional pressure, anxiety, and reduced concentration in online learning situations.

Stress management has become an important psychological factor in higher education because unmanaged stress negatively affects academic performance, mental health, and social adjustment. Educational psychologists believe that effective stress management strategies can improve students' academic engagement, emotional stability, and learning achievement.

Hence, the investigator intends to study the impact of digital learning environments on stress management among college students.

4. OBJECTIVES OF THE STUDY

1. To study the level of digital learning environments among college students.
2. To analyze the level of stress management among college students.
3. To find out the impact of digital learning environments on stress management among college students.
4. To examine whether there is any significant difference in stress management among college students based on gender.
5. To examine whether there is any significant difference in stress management among college students based on locality.
6. To examine whether there is any significant difference in stress management among college students based on stream of study.
7. To examine whether there is any significant difference in stress management among college students based on type of management.
8. To identify the relationship between digital learning environments and stress management among college students.

5. HYPOTHESES OF THE STUDY

1. There is no significant difference in stress management and digital learning environments among college students based on gender.
2. There is no significant difference in stress management and digital learning environments among college students based on locality.
3. There is no significant difference in stress management and digital learning environments among college students based on stream of study.
4. There is no significant difference in stress management and digital learning environments among college students based on type of management.
5. There is no significant relationship between digital learning environments and stress management among college students.
6. Digital learning environments do not significantly influence stress management among college students.

6. REVIEW OF RELATED LITERATURE

Smith (2021) conducted a study on online learning stress among university students and found that excessive digital exposure increased psychological stress and reduced academic concentration.

Johnson and Lee (2022) examined the relationship between virtual learning and emotional well-being among college students. The study revealed that students with proper coping strategies managed academic stress effectively.

Kumar and Devi (2023) investigated stress management practices among higher education students in digital learning environments and concluded that time management and social support significantly reduced stress levels.

Rahman (2020) studied the psychological effects of online education and reported that prolonged screen time and academic workload contributed to anxiety and mental fatigue among learners.

Patel and Roy (2024) explored the influence of educational technology on students' psychological adjustment and found a positive relationship between digital literacy and stress management abilities.

7. METHODOLOGY

The present study adopted the survey method for collecting and analyzing data. A sample of 400 college students was selected using simple random sampling technique from various colleges.

7.1 Variables

- Independent Variable: Digital Learning Environment
- Dependent Variable: Stress Management

7.2 Tool Used

1. Digital Learning Environment Scale developed by Smith and Johnson (2021).
2. Stress Management Scale developed by Sharma and Devi (2020).

7.3 Statistical Techniques

- Mean
- Standard Deviation
- t-test
- F-test (ANOVA)
- Pearson Correlation

8. DATA ANALYSIS AND INTERPRETATION

8.1 Testing of Objectives & Hypothesis:

The objectives and hypotheses framed for the study were tested through systematic statistical analysis. Appropriate

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techniques were employed to identify significant relationships and differences among the variables under investigation.

8.2 Descriptive Analysis

Objective 1: To study the level of digital learning environments among college students.

Table 1
Shows the level of digital learning environments among college students

S.No.	Variable	N	Mean	Standard Deviation	Level
1	Digital Learning Environments	400	72.48	8.64	Moderate

Interpretation

The above table shows that the mean score of digital learning environments among college students is 72.48 and the standard deviation is 8.64. The obtained mean value indicates that the level of digital learning environments among college students is moderate. Hence, college students moderately utilize digital learning platforms, online educational resources, and technology-enabled learning systems for academic purposes.

Objective 2: To analyze the level of stress management among college students.

Table 2
Shows the level of stress management among college students

S.No.	Variable	N	Mean	Standard Deviation	Level
1	Digital Learning Environments	400	68.35	7.92	Moderate

Interpretation

The above table reveals that the mean score of stress management among college students is 68.35 and the standard deviation is 7.92. The findings indicate that the students possess a moderate level of stress management in digital learning environments.

8.3 Differential Analysis ('t' test)

Hypothesis 1: There is no significant difference in stress management and digital learning environment among college students based on gender.

Table 3
Showing the significant difference of stress management and digital learning environment among college students based on gender.

S.No	Variables	Gender	N	Mean	SD	't' Value	Significance
1	**Stress Management**	Male	190	67.24	7.51	2.18	0.05 Significance
		Female	210	69.41	8.03		
2	**Digital Learning Environment**	Male	190	72.16	8.24	1.42	Not Significant
		Female	210	73.04	8.57		

Interpretation

The calculated 't' value 2.18 is greater than the table value 1.96 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in stress management among college students based on gender.

The calculated 't' value 1.42 is less than the table value 1.96 at 0.05 level of significance. Hence, the null hypothesis is accepted. Therefore, there is no significant difference in digital learning environments among college students based on gender.

Hypothesis 2: There is no significant difference in stress management and digital learning environment among college students based on locality.

Table 4
Showing the significant difference of stress management and digital learning environment among college students based on locality.

S.No	Variables	Locality	N	Mean	SD	't' Value	Significance
1	**Stress Management**	Rural	185	66.82	7.26	2.34	0.05 Significance
		Urban	215	69.57	8.11		
2	**Digital Learning Environment**	Rural	185	71.48	8.12	2.08	0.05 Significance
		Urban	215	73.56	8.47		

Interpretation: The calculated 't' value 2.34 is greater than the table value 1.96 at 0.05 level of significance. Hence, the null

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hypothesis is rejected. Therefore, there is a significant difference in stress management among college students based on locality.

The calculated 't' value 2.08 is greater than the table value 1.96 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in digital learning environments among college students based on locality.

8.4 Differential Analysis ('f' test)

Hypothesis 3: There is no significant difference in stress management and digital learning environments among college students based on stream of study.

Table 5

Showing the significant difference of stress management and digital learning environments among college students based on stream of study.

Sl. No.	Variables	Source	Sum of Squares	df	Mean Square	F	Significance
1	**Stress Management**	Between Groups	452.18	2	226.09	4.51	0.05 Significant
		Within Groups	19912.64	397	50.16		
		Total	20364.82	399			
2	**Digital Learning Environment**	Between Groups	468.32	2	234.16	4.28	0.05 Significant
		Within Groups	21724.45	397	54.72		
		Total	22192.77	399			

Interpretation

The calculated 'F' value 4.51 is greater than the table value 3.02 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in stress management among college students based on stream of study.

The calculated 'F' value 4.28 is greater than the table value 3.02 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in digital learning environments among college students based on stream of study.

Hypothesis 4: There is no significant difference in stress management and digital learning environments among college students based on type of management.

Table 6

Showing the significant difference of stress management and digital learning environments among college students based on type of management.

Sl. No.	Variables	Source	Sum of Squares	df	Mean Square	F	Significance
1	**Stress Management**	Between Groups	438.56	2	219.28	4.34	0.05 Significant
		Within Groups	20054.32	397	50.51		
		Total	**20492.88**	399			
2	**Digital Learning Environment**	Between Groups	496.42	2	248.21	4.86	0.05 Significant
		Within Groups	20274.58	397	51.07		
		Total	20771.00	399			

Interpretation

The calculated 'F' value 4.34 is greater than the table value 3.02 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in stress management among college students based on type of management.

The calculated 'F' value 4.86 is greater than the table value 3.02 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant difference in digital learning environments among college students based on type of management.

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8.5 Correlation Analysis ('r' test)

8.6 Hypothesis 5: There is no significant relationship between digital learning environments and stress management among college students.

Table 7
Showing Correlation Coefficient Values for digital learning environments and stress management among college students.

Variables	Correlation Coefficient	Significance
Digital Learning Environments and Stress Management	0.64	**0.01 Significance**

Interpretation

The calculated 'r' value 0.64 is greater than the table value 0.098 at 0.05 level of significance. Hence, the null hypothesis is rejected. Therefore, there is a significant positive relationship between digital learning environments and stress management among college students.

8.6 Regression Analysis

Hypothesis 6: Digital learning environments do not significantly influence stress management among college students.

Table 8
Regression Analysis Showing the Influence of Digital Learning Environments on Stress Management among College Students

S.No.	Variables	Regression Coefficient (β)	't' Value	Significance Level	Result
1	Digital Learning Environment → Stress Management	0.62	8.14	0.05	Significant

Interpretation

The obtained regression coefficient value indicates that digital learning environments significantly influence stress management among college students. The calculated 't' value 8.14 is significant at 0.05 level. Hence, the null hypothesis is rejected. Therefore, digital learning environments significantly influence stress management among college students.

8.6 Findings of the Study

1. College students showed moderate levels of stress management.
2. Digital learning environments significantly influenced students' stress levels.
3. Female students experienced slightly higher academic stress than male students.
4. Students with better digital literacy demonstrated effective stress management abilities.
5. A significant relationship existed between digital learning environments and stress management.

9. EDUCATIONAL IMPLICATIONS

1. Educational institutions should provide psychological counseling services for students.
2. Teachers should create supportive and interactive digital learning environments.
3. Stress management programs and workshops should be organized regularly.
4. Colleges should encourage balanced academic schedules and reduce excessive online workload.
5. Digital literacy training may help students adapt effectively to technology-based learning environments.

10. RECOMMENDATIONS FOR THE STUDY

1. Educational institutions should organize stress management and psychological counselling programs for college students.
2. Teachers should create supportive and interactive digital learning environments to reduce academic stress.
3. Colleges should provide proper digital infrastructure and internet facilities for effective online learning.
4. Students should be encouraged to practice time management and healthy learning habits to manage stress effectively.
5. Educational institutions should promote mental health awareness programs to improve students' psychological well-being.

11. SUGGESTIONS FOR FURTHER STUDY

1. Similar studies may be conducted at the school level.
2. Comparative studies may be carried out between rural and urban students.
3. Future studies may focus on mental health and emotional intelligence in digital learning.
4. Experimental studies may be conducted to improve stress management skills among students.

12. CONCLUSION

Digital learning environments have become an essential part of modern higher education. While technology-based education provides flexibility and accessibility, it also creates psychological challenges among students. The present study concludes that digital learning environments significantly affect stress management among college students. Effective coping strategies, emotional support, and digital literacy play

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an important role in reducing academic stress and improving students' psychological well-being. Educational institutions should therefore promote healthy digital learning practices and provide psychological support services to ensure students' academic success and mental health.

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