

Leveraging AI to Boost Learning Outcomes for College Students with Respect to Gen Z

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ABSTRACT:

Arts and Science colleges contribute an energetic role in higher education by offering a balanced combination of humanities, social sciences, natural sciences, and analytical disciplines. Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. Enhancing AI to education offers several advantages for college students which improve student engagement, promote independent learning, save time and provide easy access to learning resources anytime, thereby increasing overall learning efficiency. Although the growing adoption of AI in higher education, its impact on learning outcomes among college students mainly Gen Z remains unclear. In addition, Gen Z students in Bangalore often face challenges with AI technology due to limited digital skills, lack of awareness and inadequate access to AI-enabled learning tools. Hence, this study aimed to examine the leveraging AI to boost learning outcomes among Gen Z college students in Bangalore. This study followed research method was a descriptive research design. The required data were collected from both primary and secondary sources. The study focused on Gen Z students enrolled in Arts and Science colleges in Bangalore, with a sample of 194 participants selected through random sampling. The primary data were obtained using a structured questionnaire that captured respondents' demographic characteristics, usage of AI tools and responses regarding AI's effectiveness in enhancing learning outcomes, measured on a five-point Likert scale. The collected data were systematically organized in MS Excel and analyzed using statistical techniques, including percentage analysis, mean score, standard deviation, Chi-square test, correlation analysis and linear regression analysis, conducted via SPSS version 26.0. Furthermore, null hypotheses were formulated to investigate the relationships between leveraging AI to boost learning outcomes and selected independent variables. It could be observed from the study that high level of leveraging AI to boost learning outcomes is obtained by the Gen Z students belong to female, studying Science, III Year, using chatbots mainly, high level awareness of AI tools and use AI tools daily.

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1. INTRODUCTION

Higher education serves as a foundation for advanced knowledge, skill development, and intellectual growth, preparing individuals for professional careers and lifelong learning. Arts and Science colleges perform main role in higher education by offering diverse programs in humanities, social sciences, natural sciences, and commerce. These institutions focus on developing students' intellectual abilities, critical thinking, creativity, and ethical values. By combining theoretical knowledge with practical applications, Arts and Science colleges prepare students for higher studies, research, and a wide range of career opportunities. They also encourage holistic development through co-curricular and extracurricular activities, fostering communication skills, social responsibility, and lifelong learning. Artificial intelligence is the theory and development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns. AI is an umbrella term that encompasses a wide variety of technologies, including machine learning, deep learning and natural language processing (NLP). Leveraging Artificial Intelligence to boost learning outcomes has become increasingly significant in higher education. AI-based tools such as intelligent tutoring systems, chatbots, adaptive learning platforms, and automated assessment tools support personalized learning by addressing individual students' learning pace, preferences, and academic needs. These tools provide instant feedback, helping students identify their strengths and weaknesses, thereby improving academic performance. AI also enhances student engagement by offering interactive and flexible learning experiences, which encourage active participation and self-directed learning. Moreover, AI tools save time by simplifying access to study materials and enabling efficient

learning processes. For college students, AI facilitates continuous learning beyond classroom boundaries and supports independent problem-solving skills. In addition, AI-driven analytics assist educators in understanding student learning patterns and designing effective instructional strategies. Thus, leveraging AI in college education contributes to improved learning efficiency, higher academic achievement, and better preparedness of students to meet the demands of a technology-driven academic and professional environment.

2. REVIEW OF LITERATURE

According to Rajesha and Nirmala (2025) revealed that the significant positive relationship between regular use of AI tools and improved academic performance among higher education students. Further, AI technologies were found to enhance learning progress by improving engagement, time management and deadline adherence. Also, personalized learning supported by AI increased students' motivation and understanding of complex subjects whereas the impact of AI usage varied across demographic factors such as age, gender, and academic program. In case of Roy and Al Subhi (2025) found that AI tools significantly enhance educational outcomes in professional academia by improving student engagement and interactive teaching methods. The respondents agreed that AI supports personalized learning, critical thinking, and problem-solving through effective curriculum design while AI tools were also perceived to promote inclusivity and collaboration by integrating diverse learning resources. Despite positive outcomes, limitations such as small sample size and restricted scope reduced the generalizability of the findings. The researchers Yıldızhan Bora and Sahin Kölemen (2025) found that integrating AI into instructional design enhanced individualized learning, instructional effectiveness, and student engagement in higher education. AI-supported tools improved students' technical skills, critical

evaluation abilities, and technological adaptability through immediate feedback and personalized support. However, concerns were raised regarding reduced engagement, learner passivity, and the reliability of AI-generated information. In view of Adetunji (2024) pointed out that AI-powered adaptive learning platforms significantly improve student outcomes by personalizing instruction and addressing individual learning needs in diverse classrooms. Additionally, real-time analytics and continuous feedback enhance student engagement, motivation and retention. Moreover, AI-driven personalization supports inclusivity by catering to varied cultural, linguistic, and learning backgrounds. However, challenges related to data privacy, algorithmic bias, and the need to preserve the educator's role remain critical considerations. The author Cheng (2024) found that a majority of landscape architecture students actively use AI tools, with most reporting positive learning experiences and satisfaction. In addition, frequent use of AI tools showed a moderate positive relationship with improved learning outcomes, particularly design efficiency and creative thinking. However, the technical complexity of certain AI tools, especially automated design tools, limited their effectiveness for some students. Also, significant differences were observed in learning outcomes based on the type of AI tool used, while gender and grade level showed no significant variation. Regarding the study of Wiredu et al. (2024) mentioned that the use of generative AI tools significantly improved students' understanding of course content, with a majority reporting enhanced comprehension and academic efficiency. Further, a weak to moderate positive correlation was observed between AI usage and improved academic performance, depending on the nature of AI-supported tasks. However, serious concerns regarding academic integrity and overreliance on AI were highlighted by most participants.

3. STATEMENT OF THE PROBLEM

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the education

sector by introducing innovative tools that support personalized learning, academic engagement, and skill development. Leveraging AI enhances learning outcomes by enabling personalized instruction, improving academic performance through instant feedback, increasing engagement, promoting independent learning, saving time, and ensuring easy access to resources. Despite the growing adoption of AI-driven tools in colleges, there remains limited empirical evidence on how effectively these technologies improve learning outcomes among Gen Z college students in Bangalore. Many institutions have introduced AI-based platforms without a clear understanding of Gen Z students' awareness, accessibility, usage patterns, and the actual academic benefits derived from such tools. Also, concerns related to overdependence on AI, unequal access to technology, and lack of structured guidance raise questions about its optimal utilization in higher education. Moreover, disparities in digital infrastructure, faculty readiness, and Gen Z students' technological competencies may influence the effectiveness of AI-enabled learning.

4. OBJECTIVES OF THE STUDY

- To present the demographic profile of the selected Gen Z students from Arts and Science colleges in Bangalore.
- To examine the leveraging AI to boost learning outcomes for Gen Z college students in the study area.

5. HYPOTHESIS OF THE STUDY

- There is no significant relationship between gender and leveraging AI to boost learning outcomes.
- There is no significant relationship between stream of study and leveraging AI to boost learning outcomes.
- There is no significant relationship between type of AI tools using and leveraging AI to boost learning outcomes.

- There is significant relationship between year of studying and leveraging AI to boost learning outcomes.
- Year of studying does not significantly explain leveraging AI to boost learning outcomes.
- There is significant relationship between awareness of AI tools and leveraging AI to boost learning outcomes.
- Awareness of AI tools does not significantly explain leveraging AI to boost learning outcomes.
- There is significant relationship between frequency of AI tools using and leveraging AI to boost learning outcomes.
- Frequency of AI tools using does not significantly explain leveraging AI to boost learning outcomes.

6. RESEARCH METHODS

The research was carried out using a descriptive research design grounded in a quantitative framework. Data for the study were sourced

from both primary and secondary means. The primary data were obtained through a well-structured questionnaire aimed at eliciting information on Gen Z students' demographic characteristics and their use of AI in enhancing learning outcomes among Arts and Science colleges in Bangalore. A five-point Likert scale was employed to assess students' enhancement of AI on learning outcomes. Using a random sampling technique, 194 Gen Z students were selected as sample respondents. The data collected were coded, classified and tabulated using MS Excel and subsequently analyzed with the support of SPSS version 26.0, applying statistical techniques such as percentage analysis, mean and standard deviation, Chi-square test, correlation analysis and multiple regression analysis.

7. RESULT AND DISCUSSION

7.1 Demographic Profile and Leveraging AI to Boost Learning Outcomes

The demographic profile of the Gen Z college students and leveraging AI to enhance learning outcomes are presented in the table below.

Table 1: Demographic Profile and Leveraging AI to Boost Learning Outcomes

No.	Variables Name	Number of Respondents	%	Mean	SD
1	Gender				
	• Male	109	56.2	3.87	0.38
	• Female	85	43.8	3.89	0.53
	Total	194	100.0		
2	Stream of Study				
	• Arts	118	60.8	3.83	0.53
	• Science	76	39.2	3.91	0.42
	Total	194	100.0		
3	Year of Studying				
	• I Year	49	25.3	3.82	0.51
	• II Year	60	30.9	3.87	0.40

No.	Variables Name	Number of Respondents	%	Mean	SD
	• III Year	85	43.8	3.92	0.49
	Total	194	100.0		
4	Type of AI Tools Using mainly				
	• Chatbots	57	29.4	3.99	0.52
	• Tutoring Apps	69	35.6	3.84	0.40
	• Practice & Test Tools	40	20.6	3.88	0.40
	• Others	28	14.4	3.72	0.53
	Total	194	100.0		
5	Awareness of AI Tools				
	• Low level	60	30.9	3.72	0.53
	• Medium level	83	42.8	3.84	0.39
	• High level	51	26.3	4.08	0.45
	Total	194	100.0		
6	Frequency of AI Tools Using				
	• Daily	46	23.7	4.03	0.45
	• Frequently	73	37.6	3.95	0.39
	• Occasionally	23	11.9	3.71	0.54
	• Whenever need	52	26.8	3.80	0.40
	Total	194	100.0		

- From the above analysis, it is observed that 56.2% of the respondents are male and 43.8% of the respondents are female.
- From the analysis, it is revealed that 60.8% of the respondents belong to the Arts stream, while 39.2% are from the Science stream.
- The analysis shows that 25.3% of the respondents are studying in I Year, 30.9% of the respondents are studying in II Year and 43.8% of the respondents are studying in III Year.
- From the analysis, it is mentioned that 29.4% of the respondents use chatbots mainly,

35.6% of the respondents use tutoring apps, 20.6% of the respondents use practice & test tools and 14.4% of the respondents use other AI tools mainly for study purpose.

- It is illustrated from the analysis that 30.9% of the respondents have low level awareness of AI tools, 42.8% of the respondents have medium level awareness and 26.3% of the respondents have high level awareness of AI tools.
- The analysis noticed that 23.7% of the respondents use AI tools daily, 37.6% of the respondents utilize them frequently, 11.9% of the respondents use them occasionally and

26.8% of the respondents utilize AI tools whenever needed.

7.2 Leveraging AI to Boost Learning Outcomes of Gen Z Students

Artificial Intelligence (AI) has emerged as a transformative force in education, enhancing learning outcomes by offering personalized

learning experiences, improving access to academic resources, and enabling students to grasp complex concepts more effectively. To explore these benefits, this study framed eight statements to assess how leveraging AI impacts Gen Z students' academic performance and learning experiences.

Table 2: Leveraging AI to Boost Learning Outcomes

S. No	Factors	Mean Score	SD
1	AI-based learning tools help me understand complex subjects more easily	3.60	1.15
2	Using AI tools has improved my overall academic performance	4.15	1.11
3	AI provides personalized learning support that suits my learning pace and style	3.89	1.23
4	AI-based assessments and feedback help me identify my strengths and weaknesses	3.82	1.17
5	AI tools increase my engagement and interest in learning activities	3.91	1.16
6	I am able to learn independently and confidently with the support of AI tools	3.84	1.18
7	AI tools save time and make my learning process more efficient	3.87	1.35
8	I believe integrating AI into college education enhances learning outcomes	3.96	1.14

It is displayed from the analysis that the highest mean score is recorded for the statement 'Using AI tools has improved my overall academic performance' (Mean = 4.15), followed by 'I believe integrating AI into college education enhances learning outcomes' (Mean = 3.96) and 'AI tools increase my engagement and interest in learning activities' (Mean = 3.91). This indicates that Gen Z students strongly perceive AI as effective in improving academic performance, enhancing engagement, and strengthening overall learning outcomes. On the other hand, the lowest mean score is observed for 'AI-based assessments and feedback help me identify my strengths and weaknesses' (Mean = 3.82) and 'AI-based learning tools help me understand complex subjects more easily' (Mean = 3.60), suggesting comparatively lower agreement on this aspect.

7.3 Leveraging AI to Boost Learning Outcomes – Testing of Hypothesis

Relationship between Demographic Profile and Leveraging AI to Boost Learning Outcomes (Chi-Square Test)

With a view to find the degree of association between demographic profile of the selected college Gen Z students and leveraging AI to boost learning outcomes, a cross-tabulation has been framed. In order to find the relationship between selected independent variables and leveraging AI to boost learning outcomes, hypotheses are developed and analyzed by applying Chi-square test.

Gender and Leveraging AI to Boost Learning Outcomes

H_0 : There is no significant relationship between gender and leveraging AI to boost learning outcomes.

Table 3: Gender and Leveraging AI to Boost Learning Outcomes

S. No	Gender	Leveraging AI to Boost Learning Outcomes			Total	Chi-Square Value
		Low	Medium	High		
1	Male	17 (15.6%)	42 (38.5%)	50 (45.9%)	109 (100.0%)	5.450 (0.066^{NS})
2	Female	25 (29.4%)	26 (30.6%)	34 (40.0%)	85 (100.0%)	
	Total	42	68	84	194	

Note: Parenthesis indicates 'p' value; NS – Not Significant

It is inferred from the above table that the 'p' value is greater than 0.05 and the null hypothesis is accepted. Hence, there is no significant relationship between gender and leveraging AI to boost learning outcomes.

Stream of Study and Leveraging AI to Boost Learning Outcomes

H₀: There is no significant relationship between stream of study and leveraging AI to boost learning outcomes.

Table 4: Stream of Study and Leveraging AI to Boost Learning Outcomes

S. No	Stream of Study	Leveraging AI to Boost Learning Outcomes			Total	Chi-Square Value
		Low	Medium	High		
1	Arts	36 (30.5%)	33 (28.0%)	49 (41.5%)	118 (100.0%)	15.452 (0.000*)
2	Science	6 (7.9%)	35 (46.1%)	35 (46.1%)	76 (100.0%)	
	Total	42	68	84	194	

Note: Parenthesis indicates 'p' value; * – Significant at 1% level

From the above table, it is revealed that the 'p' value is lesser than 0.05 accordingly the null hypothesis is rejected. Therefore, there is a close significant relationship between stream of study and leveraging AI to boost learning outcomes.

Type of AI Tools Using and Leveraging AI to Boost Learning Outcomes

H₀: There is no significant relationship between type of AI tools using and leveraging AI to boost learning outcomes.

Table 5: Type of AI Tools Using and Leveraging AI to Boost Learning Outcomes

S. No	Type of AI Tools Using	Leveraging AI to Boost Learning Outcomes			Total	Chi-Square Value
		Low	Medium	High		
1	Chatbots	25 (43.9%)	23 (40.4%)	9 (15.8%)	57 (100.0%)	70.451 (0.000*)
2	Tutoring Apps	14 (20.3%)	22 (31.9%)	33 (47.8%)	69 (100.0%)	
3	Practice & Test Tools	3 (7.5%)	3 (7.5%)	34 (85.0%)	40 (100.0%)	

4	Others	0 (0.0%)	20 (71.4%)	8 (28.6%)	28 (100.0%)	
	Total	42	68	84	194	

Note: Parenthesis indicates 'p' value; * – Significant at 1% level

It is depicted from the above table that the 'p' value is lesser than 0.05 then the null hypothesis is rejected. So, there is a close significant relationship between type of AI tools using and leveraging AI to boost learning outcomes.

Degree of Relationship between Year of Studying and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

Table 6: Degree of Relationship between Year of Studying and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

Variables	Year of Studying	Leveraging AI to Boost Learning Outcomes
Year of Studying	1.000	
Leveraging AI to Boost Learning Outcomes	0.490 (0.000*)	1.000

Note: * – Significant at 1% level

It is measured from the analysis that there exists a positive relationship between year of studying and leveraging AI to boost learning outcomes ($r = 0.490$). The relationship is statistically significant at the 1% level, indicating that the association is not due to chance. This shows that as the year of studying increases, students tend to leverage AI tools more effectively for improving learning outcomes. Hence, senior students demonstrate a higher inclination towards using AI for academic enhancement.

The following analysis has examined that the relationship between year of studying and the dependent variable leveraging AI to boost learning outcomes by using correlation analysis.

H_0 : There is significant relationship between year of studying and leveraging AI to boost learning outcomes.

Relationship between Year of Studying and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

The relationship between year of studying of the Gen Z students and leveraging AI to boost learning outcomes is discussed in the following table.

H_0 : Year of studying does not significantly explain leveraging AI to boost learning outcomes.

Table 7: Relationship between Year of Studying and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

No.	Variables	Coefficient	SE	't' value	'p' value
	(Constant)	3.768			
1	Year of Studying	0.062	0.012	5.167	0.000*
	R Value	0.790			
	R² Value	0.624			
	F Value	71.576			

Note: * - Significant at 1% level

It is confirmed from the linear regression analysis that year of studying has a positive and significant influence on leveraging AI to boost learning outcomes. Further, the analysis emphasizes that the leveraging AI to boost learning outcomes is predicted to increase by 6.2% for year of studying. The relationship is statistically significant at the 1% level ($p = 0.000$), confirming the robustness of the model. Further, the high R^2 value (0.624) shows that 62.4% of the variation in learning outcomes is explained by the year of studying, indicating a good model fit.

Table 8: Degree of Relationship between Awareness of AI Tools and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

Variables	Awareness of AI Tools	Leveraging AI to Boost Learning Outcomes
Awareness of AI Tools	1.000	
Leveraging AI to Boost Learning Outcomes	0.300 (0.000*)	1.000

Note: * – Significant at 1% level

It is justified from the correlation analysis that there exists a positive relationship between awareness of AI tools and leveraging AI to boost learning outcomes ($r = 0.300$). The relationship is statistically significant at the 1% level, indicating that higher awareness of AI tools is associated with better learning outcomes. This suggests that students who are more aware of AI tools tend to utilize them more effectively for academic purposes. Hence, improving awareness levels can enhance the effective use of AI in learning.

Degree of Relationship between Awareness of AI Tools and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

The following analysis has examined that the relationship between awareness of AI tools and the dependent variable leveraging AI to boost learning outcomes by using correlation analysis.

H_0 : There is significant relationship between awareness of AI tools and leveraging AI to boost learning outcomes.

Relationship between Awareness of AI Tools and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

The relationship between awareness of AI tools of the college Gen Z students and leveraging AI to boost learning outcomes is discussed in the following table.

H_0 : Awareness of AI tools does not significantly explain leveraging AI to boost learning outcomes.

Table 9: Relationship between Awareness of AI Tools and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

No.	Variables	Coefficient	SE	't' value	'p' value
	(Constant)	4.245			
1	Awareness of AI Tools	0.186	0.043	4.358	0.000*
	R Value	0.840			
	R² Value	0.706			
	F Value	78.990*			

Note: * - Significant at 1% level

It is identified from the linear regression analysis that awareness of AI tools has a positive and significant impact on leveraging AI to boost learning outcomes. From the analysis, the result emphasizes that the leveraging AI to boost learning outcomes is predicted to increase by 18.6% for awareness of AI tools. The relationship is statistically significant at the 1% level ($p = 0.000$), confirming the validity of the model. Further, the high R^2 value (0.706) reveals that 70.6% of the variation in learning outcomes is explained by awareness of AI tools, indicating a strong model fit.

Degree of Relationship between Frequency of AI Tools Using and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

The following analysis has examined that the relationship between frequency of AI tools using and the dependent variable leveraging AI to boost learning outcomes by using correlation analysis.

H_0 : There is significant relationship between frequency of AI tools using and leveraging AI to boost learning outcomes.

Table 10: Degree of Relationship between Frequency of AI Tools Using and Leveraging AI to Boost Learning Outcomes (Correlation Analysis)

Variables	Frequency of AI Tools Using	Leveraging AI to Boost Learning Outcomes
Frequency of AI Tools Using	1.000	
Leveraging AI to Boost Learning Outcomes	0.411*	1.000

Note: * – Significant at 1% level

It is noticed from the correlation analysis that there exists a positive relationship between frequency of AI tools using and leveraging AI to boost learning outcomes ($r = 0.411$). The relationship is statistically significant at the 1% level, indicating that increased frequency of AI tool usage is associated with better learning outcomes. This indicates that students who use AI tools more frequently tend to gain greater academic benefits. Hence, regular use of AI tools enhances learning effectiveness.

Relationship between Frequency of AI Tools Using and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

The relationship between frequency of AI tools using of the Gen Z college students and leveraging AI to boost learning outcomes is discussed in the following table.

H_0 : Frequency of AI tools using does not significantly explain leveraging AI to boost learning outcomes.

Table 11: Relationship between Frequency of AI Tools Using and Leveraging AI to Boost Learning Outcomes (Linear Regression Analysis)

No.	Variables	Coefficient	SE	't' value	'p' value
	(Constant)	3.871			
1	Frequency of AI Tools Using	0.145	0.030	4.833	0.000*
	R Value	0.891			
	R² Value	0.794			
	F Value	87.024*			

Note: * - Significant at 1% level

It is inferred from the linear regression analysis that frequency of AI tools using has a positive and significant influence on leveraging AI to boost learning outcomes. In addition, the result highlights that the leveraging AI to boost learning outcomes is predicted to increase by 14.5% for frequency of AI tools using. The relationship is statistically significant at the 1% level ($p = 0.000$), confirming the reliability of the model. Further, the high R^2 value (0.794) shows that 79.4% of the variation in learning outcomes is explained by frequency of AI tool usage, indicating a strong model fit.

8. FINDINGS

- It is indicated that majority (56.2%) of the respondents are male students. Further, female students show high level of leveraging AI to boost learning outcomes.
- It is clear that majority (60.8%) of the respondents are Arts students. Further, Science students indicate high level of leveraging AI to boost learning outcome.
- It is inferred that majority (43.8%) of the respondents are studying in III Year. Further, III Year students report high level of leveraging AI to boost learning outcome as more beneficial.
- It is identified that majority (35.6%) of the respondents use tutoring apps mainly for study purpose. Further, respondents using chatbots mainly show highest level of leveraging AI to boost learning outcome.
- It is inferred that majority (42.8%) of the respondents have medium level awareness of AI tools. Further, respondents with high level awareness of AI tools indicate maximum level of leveraging AI to boost learning outcome.
- It is depicted that majority (37.6%) of the respondents frequently use AI tools. Additionally, respondents who use AI tools daily report high level of leveraging AI to boost learning outcome.
- It is mentioned from the mean score test that the highest mean score is recorded for the statement 'Using AI tools has improved my

overall academic performance' followed by 'I believe integrating AI into college education enhances learning outcomes' among developed statements on leveraging ai to boost learning outcomes.

- The Chi-square test displayed that there is no significant relationship between gender and leveraging AI to boost learning outcomes.
- From the Chi-square test, it is justified that there is a close significant relationship between stream of study and leveraging AI to boost learning outcomes.
- It is observed from the Chi-square test that there is a close significant relationship between type of AI tools using and leveraging AI to boost learning outcomes.
- From the correlation analysis, it is illuminated that there is a positive relationship between year of studying and leveraging AI to boost learning outcomes. Also, whenever the year of studying increases, students tend to leverage AI tools more effectively for improving learning outcomes.
- It is proved from the linear regression analysis that year of studying has a positive and significant influence on leveraging AI to boost learning outcomes. The regression results further emphasize that the leveraging AI to boost learning outcomes is predicted to increase by 6.2% for year of studying.
- The correlation analysis assessed that there is a positive relationship between awareness of AI tools and leveraging AI to boost learning outcomes. Further, the students who are more aware of AI tools tend to utilize them more effectively for academic purposes.
- From the linear regression analysis, it is determined that awareness of AI tools has a positive and significant impact on leveraging AI to boost learning outcomes. Also, the result emphasizes that the leveraging AI to boost learning outcomes is predicted to increase by 18.6% for awareness of AI tools.

- It is explored from the correlation analysis that there is a positive relationship between frequency of AI tools using and leveraging AI to boost learning outcomes. This shows that students who use AI tools more frequently tend to gain greater academic benefits.

- It could be observed from the linear regression analysis that frequency of AI tools using has a positive and significant influence on leveraging AI to boost learning outcomes. Moreover, the result highlights that the leveraging AI to boost learning outcomes is predicted to increase by 14.5% for frequency of AI tools using.

9. SUGGESTIONS

- The findings mentioned that female students show a high level of leveraging AI to boost learning outcomes. Hence, it is suggested that educational institutions may design targeted AI-based learning initiatives and support systems to further encourage and strengthen effective AI usage for all the students.

- From the study, it is justified that Science students show high level of leveraging AI to enhance learning outcomes. Therefore, it is suggested that similar AI-integrated teaching practices may be extended to Arts students to improve their learning effectiveness and academic performance.

- It is confirmed that III year students perceive AI tools as more beneficial for boosting learning outcomes. Accordingly, the researcher stated that educational institutions introduce AI-oriented learning support from the initial years of study to help I year and II year students gain early exposure and confidence in using AI tools.

- The study identified that respondents using chatbots exhibit the highest level of leveraging AI for learning outcomes. Thus, it is suggested that colleges may promote the use of educational chatbots as learning assistants to

enhance student engagement and academic understanding.

- It is inferred that respondents with a high level of awareness of AI tools show the maximum level of leveraging AI to improve learning outcomes. Therefore, awareness programmes, workshops, and training sessions on AI tools may be conducted regularly to increase students' familiarity and effective utilization of AI in learning.

- The findings depicts that students who use AI tools daily report a high level of learning enhancement. Hence, it is suggested that educators may integrate AI tools into routine academic activities and assignments to encourage consistent and productive usage among students.

10. CONCLUSION

This study aimed to examine the leveraging AI to boost learning outcomes for Gen Z students of art and science colleges in Bangalore. It is revealed from the study that there is a close significant relationship between leveraging AI to boost learning outcomes and selected variables namely stream of study and type of AI tools using. Also, there is a positive relationship between leveraging AI to boost learning outcomes and selected variables such as year of studying, awareness of AI tools and frequency of AI tools using of the college Gen Z students. Also, the leveraging AI to boost learning outcomes is predicted to increase by 6.2% for year of studying, 18.6% for awareness of AI tools and 14.5% for frequency of AI tools using of the college Gen Z students. Hence, this study suggested that educational institutions should conduct continuous awareness and training programmes on AI tools for Gen Z students and faculty members in Bangalore. Such initiatives will improve awareness, confidence, and effective utilization of AI technologies, leading to improved academic performance and student engagement.

11. REFERENCES

- Adetunji, O. (2024). Leveraging artificial intelligence and adaptive learning platforms to personalize education and improve student outcomes in diverse classrooms. *International Journal of Computer Applications Technology and Research*, 13(10), 134–148.
- Al-Madhagy, G., Hail, T., Mohd Yusof, S. A., Rashid, A., El-Shekeil, I., & Lutfi, A. (2024). Exploring factors influencing Gen Z's acceptance and adoption of AI and cloud-based applications and tools in academic attainment. *Emerging Science Journal*, 8(3), 815–836.
- Cheng, Y. (2024). Analysis of the current situation of college students using AI tools for learning: A case study of the landscape architecture major. *Proceedings of ICILLP 2024 Workshop: Today's College Students and Faculty: How AI is Transforming Their Behaviors, Legally*, 188-199.
- Gupta, S.L. (2007). *Marketing Research*. 1st Edition, New Delhi: Excel Books.
- <https://edrevel.com/Blog/Leveraging-ai-for-Outcome-Based-Education-Implementation/>
- <https://learningsciences.smu.edu/blog/artificial-intelligence-in-education>
- Kothari, C.R. (2016). *Research Methodology: Methods & Techniques*. 3rd Edition, New Age International (P) Limited, Publishers, New Delhi.
- Rajendra Nargundkar, (2019). *Marketing Research - Text and Cases*. 4th Edition, McGraw hill Education (India) Private Limited, Chennai.
- Rajasha, S., & Nirmala, M. (2025). Leveraging artificial intelligence to enhance learning progress and its impact on higher education students. *ICTACT Journal on Management Studies*, 11(1), 2049-2053.
- Roy, N., & Al Subhi, N. N. (2025). Leveraging AI tools to enhance educational outcomes in professional academia. *American Journal of Multidisciplinary Research & Development (AJMRD)*, 07(05), 01–08.
- Tejashwini, K. C., & Basavaraja, C. A. (2025). A study on the awareness and utilization of AI tools in financial education among Generation Z. *Journal of Emerging Technologies and Innovative Research (JETIR)*, 12(7), 106–111.
- Wiredu, J. K., Abuba, N. S., & Zakaria, H. (2024). Impact of generative AI in academic integrity and learning outcomes: A case study in the Upper East Region. *Asian Journal of Research in Computer Science*, 17(8), 70–88.
- www.bcg.com/publications/2024/gen-z-and-ai-in-higher-ed
- www.coursera.org/articles/what-is-artificial-intelligence
- www.ibm.com/think/topics/artificial-intelligence
- www.ucanwest.ca/blog/education-careers-tips/advantages-and-disadvantages-of-ai-in-education
- Yıldızhan Bora, B., & Şahin Kölemen, C. (2025). Integrating AI into instructional design: A case study on digital photography education in higher education. *Contemporary Educational Technology*, 17(3), ep583.
- Zábojník, Rastislav & Hromada, Viktor. (2024). The Role of Generative AI in Empowering Generation Z in Higher Education. *Media & Marketing Identity*, 758-776. 10.34135/mmidentity-2024-75.