Perceived Role of Artificial Intelligence in Academic Activities of College Students in Erode City

K.Poorna Devi[1], Dr.C.Brundha[2]

[1]Ph.D. Research Scholar, Department of Commerce, Vellalar College for Women (Autonomous), Erode – 638 012

[2]Assistant Professor, Department of Commerce, Vellalar College for Women (Autonomous), Erode – 638 012

Abstract- Higher education is the study to post-secondary education offered by universities and colleges to develop advanced knowledge, skills and competencies which performs a main role in human capital formation, research, innovation and national development. Artificial intelligence (AI) influences college students by enhancing personalized learning, academic support, research efficiency and skill development, thereby improving learning outcomes and preparing students for a technology-driven future. The growing use of artificial intelligence in higher education has reshaped learning practices among college students. The study in Erode city, there is limited empirical evidence on students' awareness, usage and role of artificial intelligence. In this junction, this study examined the role of artificial intelligence on college students' academic development in Erode City. The target population comprised college students from Arts and Science colleges in Erode city who have experience in using artificial intelligence. A simple random sampling technique was employed to select a sample of 142 college students. The primary data were collected using a structured questionnaire developed to test the formulated hypotheses. By using a five-point Likert scale, college students' opinions on the role of artificial intelligence were measured. The statistical tools such as percentage analysis, mean score, standard deviation and Chi-square test were applied for data analysis and interpretation. This study depicted from the analysis that that higher role of artificial intelligence in academic activities is perceived by the college students who belong to male, upto 20 years, science group, undergraduate students and self-financing colleges in the study area.

Keywords: Artificial Intelligence, Higher Education, College Students, Academic Development, Learning Experience, Educational Innovation.

I. INTRODUCTION

Higher education refers to advanced learning pursued after the completion of secondary schooling and performs a vital role in the intellectual, social, and economic development of individuals and nations. It encompasses universities, colleges, and professional institutions offering undergraduate, postgraduate, and doctoral programs across diverse disciplines. Higher education equips learners with specialized knowledge, critical thinking abilities, and practical skills required to meet the demands of a dynamic global economy. It also promotes research, innovation, and ethical values, contributing to societal progress. In the contemporary knowledge-driven world, higher education is considered a key instrument for sustainable development and lifelong learning. Artificial Intelligence refers to the development of computer systems capable of performing tasks that normally require human intelligence, such as learning, reasoning, problem-solving, and decision-making. It integrates disciplines like computer science, data analytics, and cognitive science to simulate intelligent behavior. AI technologies include machine learning, natural language processing, robotics, and computer vision, which are widely applied across sectors such as education, healthcare, finance, and industry. By automating complex processes and enhancing efficiency, AI has transformed traditional systems and practices. In the modern digital era, artificial intelligence plays a crucial role in driving innovation and supporting informed decision-making. Artificial Intelligence acting a significant role in enhancing the academic and personal development of college students. AI-powered tools support personalized learning by adapting content to individual learning

styles and pace, thereby improving academic performance. Intelligent tutoring systems, chatbots and virtual assistants provide instant academic support and guidance. AI also aids students in research through data analysis, content generation, and access to digital resources. Moreover, AI enhances skill development by exposing students to emerging technologies and practical applications. By improving learning efficiency, creativity, and problem-solving abilities, artificial intelligence prepares college students to meet the demands of a technology-driven and competitive global workforce.

II.   REVIEW OF LITERATURE

In view of Mudenda (2025) depicted that artificial intelligence is significantly transforming the learning experiences of college and university students by enabling personalized learning, academic support, and improved research efficiency. Additionally, AI tools enhance students' digital skills, critical thinking, and time management when used within structured and guided frameworks. Furthermore, challenges such as academic integrity issues, misinformation, privacy concerns, and overreliance on AI pose notable risks to originality and mental well-being. The researchers Baladevaguru and Gandhi (2025) indicated that a substantial proportion of higher education students in Erode city possess moderate familiarity with artificial intelligence, with AI usage largely driven by academic necessity rather than regular practice. Alos, students predominantly utilize AI-enabled tools for research assistance, academic writing, examination preparation, and assessment support. Further, improved academic performance emerges as the most valued benefit of AI integration in higher education. Moreover, enhanced research and academic writing is the primary motivation for AI usage, followed by exam preparation. The study of Sakthivel and Meena Devi (2024) observed that high level of experience with AI's role in enhancing educational outcomes is perceived by the students belong to male, Science stream, studying second year, using Virtual Labs (AI tool) and using AI tools frequently. Further, there is a significant difference in mean role of artificial intelligence in enhancing educational outcomes with respect to the year of study and type of AI tools used by the students.

According to Ramya and Prasath (2024) mentioned that students possess a moderate to high level of awareness regarding the use of artificial intelligence technologies for academic purposes such as searching study materials, completing assignments, summarizing content, and preparing for competitive examinations. Additionally, students generally hold positive perceptions toward AI, strongly agreeing that it will play a significant role in future learning practices and career development. Also, respondents also acknowledge AI's ability to offer unique insights and support skill development, including critical thinking and problem-solving. The study of Sangeetha and Devaraj (2024) asserted that artificial intelligence tools significantly enhance the knowledge acquisition of MBA students by offering personalized, adaptive, and efficient learning experiences. Also, AI-driven platforms support better understanding of complex subjects through interactive content, case-based simulations, and real-time feedback. Students perceive AI as a valuable supplement that improves learning flexibility, engagement, and academic productivity. However, concerns remain regarding the accuracy, reliability, and overdependence on AI-generated content. The researchers Velastegui-Hernandez et al. (2023) highlights that artificial intelligence has a dual impact on university students' learning behaviors and psychological well-being. Further, AI-driven systems support personalized learning, timely feedback, and academic assistance, which can enhance motivation and reduce learning-related stress. Moreover, excessive reliance on AI tools may contribute to anxiety, cognitive overload, and reduced human interaction, negatively affecting mental health.

III.   STATEMENT OF THE PROBLEM

The rapid advancement of artificial intelligence has significantly transformed the higher education landscape by influencing teaching–learning processes, academic support systems, and skill development among college students. In districts like Erode city, where higher education institutions cater to students from diverse socio-economic and academic backgrounds, the integration of AI-based tools such as smart learning platforms, virtual assistants, adaptive learning systems, and automated assessment methods is steadily increasing. However, the extent to which college students are aware of, access, and effectively

utilize artificial intelligence in their academic activities remains unclear. There is limited empirical evidence on how AI impacts students' learning efficiency, academic performance, creativity and problem-solving abilities in the local context of Erode city. Moreover, disparities in institutional infrastructure, digital literacy, and field of study may influence students' perceptions and outcomes related to AI usage. Hence, this study aimed to examine the role of artificial intelligence on college students in Erode city.

IV.   OBJECTIVES OF THE STUDY

- To describe the demographic profile of the selected arts and science college students in Erode city.
- To examine the role of artificial intelligence among arts and science college students.

V.   HYPOTHESIS OF THE STUDY

- There is no significant relationship between stream of study of the students and role of artificial intelligence.
- There is no significant relationship between degree of study of the students and role of artificial intelligence.
- There is no significant relationship between nature of institution of the students and role of artificial intelligence.

VI.   RESEARCH METHODS

This study examines the role of artificial intelligence among arts and science college students in Erode city. A descriptive research design employing the survey method was adopted for the investigation. The primary data were collected through a structured questionnaire designed to capture respondents' demographic characteristics, educational information and regarding the role of artificial intelligence. A sample size of 142 students was selected using the random sampling technique. The collected data were coded and tabulated using MS Excel and subsequently analyzed with SPSS version 26.0 by applying statistical tools such as percentage analysis, mean score, standard deviation and the Chi-square test.

VII.   RESULTS AND DISCUSSION

The data concerning to the demographic profile and educational details of the selected arts and science college students in Erode city are presented in this section. Information related to the role of artificial intelligence was collected using a five-point Likert scale to measure college students' responses.

7.1   Demographic Profile of the Students
The details relating to the demographic profile and educational details of the selected arts and science college students are presented in the table below.

Table 1 : Demographic Profile of the College Students and Role of Artificial Intelligence

No.	Variables Name	Number of Respondents	Percentage	Mean	SD
1	Gender				
	• Male	78	54.9	3.74	0.44
	• Female	64	45.1	3.71	0.43
	Total	142	100.0		
2	Age				
	• Upto 20 Years	41	28.9	3.76	0.41
	• 21-22 Years	53	37.3	3.75	0.43
	• 23-25 Years	29	20.4	3.75	0.34
	• Above 25 Years	19	13.4	3.55	0.59
	Total	142	100.0		
3	Stream of Study				
	• Arts Group	93	65.5	3.55	0.51
	• Science Group	49	34.5	3.82	0.36

No.	Variables Name	Number of Respondents	Percentage	Mean	SD
	Total	142	100.0		
4	Degree of Study				
	• Under Graduate	75	52.8	3.84	0.30
	• Post Graduate	44	31.0	3.64	0.51
	• M.Phil. & Ph.D.	23	16.2	3.74	0.42
	Total	142	100.0		
5	Nature of Institution				
	• Government College	35	24.6	3.67	0.45
	• Government Aided	60	42.3	3.75	0.49
	• Self-Financing College	47	33.1	3.76	0.30
	Total	142	100.0		

The table reveals that male students constitute the highest proportion of respondents, accounting for 54.9 percent. Students aged 21–22 years form the largest age group with 37.3 percent. Within the stream of study, the Arts group dominates with 65.5 percent of the respondents. Considering the level of study, undergraduates make up the majority at 52.8 percent. Regarding institutional type, government-aided colleges enroll the highest share of students at 42.3 percent.

7.2 Role of Artificial Intelligence

The role of artificial intelligence among selected students of Arts and Science College in Erode city has been discussed in this section. To know the role of artificial intelligence among the selected students, eight statements have been developed which related to this study. The Cronbach Alpha value for the statements of role of artificial intelligence is 0.914. This specifies that the reliability of the role of artificial intelligence is good and fit for analysis of this study. From the table, it is observed that most of the college students opined towards role of artificial intelligence like 'AI identifies preferred learning styles (visual, auditory, kinesthetic) and adapts resources' with the mean score and standard deviation of 3.97 and 0.85 respectively followed by 'AI-powered help desks assist students during assignment and project work.' with the mean score and standard deviation of 3.95 and 0.99 respectively.

7.3 Testing of Hypothesis (Chi-Square Analysis)

Relationship between Demographic Profile of the college students and Role of Artificial Intelligence

A two-way table has been developed with a view to find the degree of association between demographic profile of the college students and role of artificial intelligence. In order to find the relationship between selected independent variables and role of artificial intelligence among students, hypotheses are developed and analyzed by Chi-square test.

Stream of Study and Role of Artificial Intelligence

H_0: There is no significant relationship between stream of study of the students and role of artificial intelligence.

Table 2: Stream of Study and Role of Artificial Intelligence

S. No	Stream of Study	Role of Artificial Intelligence			Total	Chi-Square Value
		Low	Medium	High		
1	Arts	16 (17.2%)	26 (28.0%)	51 (54.8%)	93 (100.0%)	13.704 (0.001*)
2	Science	15 (30.6%)	23 (46.9%)	11 (22.4%)	49 (100.0%)	
	Total	31	49	62	142	

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

The above table inferred that the null hypothesis is rejected according to the 'p' value is lesser than 0.05. Hence, there is a significant relationship between stream of study of the students and role of artificial intelligence.

Degree of Study and Role of Artificial Intelligence
H_0: There is no significant relationship between degree of study of the students and role of artificial intelligence.

Table 3: Degree of Study and Role of Artificial Intelligence

S. No	Degree of Study	Role of Artificial Intelligence			Total	Chi-Square Value
		Low	Medium	High		
1	Under Graduate	17 (22.7%)	26 (34.7%)	32 (42.7%)	75 (100.0%)	3.231 (0.520^{NS})
2	Post Graduate	7 (15.9%)	18 (40.9%)	19 (43.2%)	44 (100.0%)	
3	M.Phil. & Ph.D.	7 (30.4%)	5 (21.7%)	11 (47.8%)	23 (100.0%)	
	Total	31	49	62	142	

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

The above table obtained that the null hypothesis is accepted because the 'p' value is greater than 0.05. Therefore, there is no significant relationship between degree of study of the students and role of artificial intelligence.

Nature of Institution and Role of Artificial Intelligence
H_0: There is no significant relationship between nature of institution of the students and role of artificial intelligence.

Table 4: Nature of Institution and Role of Artificial Intelligence

S. No	Nature of Institution	Role of Artificial Intelligence			Total	Chi-Square Value
		Low	Medium	High		
1	Government College	3 (8.6%)	6 (17.1%)	26 (74.3%)	35 (100.0%)	23.584 (0.000*)
2	Government Aided	12 (20.0%)	22 (36.7%)	26 (43.3%)	60 (100.0%)	
3	Self-Financing College	16 (34.0%)	21 (44.7%)	10 (21.3%)	47 (100.0%)	
	Total	31	49	62	142	

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

The above table illuminated that the null hypothesis is rejected since the 'p' value is lesser than 0.05. Thus, there is a significant relationship between nature of institution of the students and role of artificial intelligence.

VIII.   SUGGESTIONS

• It is noticed from the findings that male students perceive higher role of artificial intelligence in their academic activities. Hence, focused initiatives such as orientation programs, workshops and awareness campaigns should be organized to enhance AI adoption and effective utilization among female students, ensuring balanced and inclusive access to AI-driven learning resources.

• From the study, it is pointed out that students aged upto 20 years perceive higher role of artificial intelligence in learning. Therefore, institutions should design structured training programs and mentoring sessions for all students to familiarize them with AI tools and demonstrate their

relevance in advanced learning, research, and career preparation.

- It is justified from the study that science group students perceive higher role of artificial intelligence in education. In this regard, tailored AI literacy programs should be introduced for arts students to highlight practical AI applications in their respective disciplines, thereby promoting interdisciplinary and equitable use of AI technologies.

- The findings mentioned that undergraduate students perceive higher role of artificial intelligence in their studies. Hence, postgraduate students should be encouraged to integrate AI tools into research, data analysis, and academic writing through specialized workshops and curriculum-based AI modules.

- The study confirmed that students from self-financing colleges perceive higher role of artificial intelligence in education. Consequently, government and aided colleges should be supported with adequate digital infrastructure, AI-enabled learning platforms, and faculty training to reduce institutional disparities and promote higher role of AI adoption across all colleges in Erode city.

IX. CONCLUSION

This study aimed to examine the role of artificial intelligence on college students in Erode city. Artificial intelligence performs a significant role in enhancing the learning experiences of college students in Erode city whereas its effective integration promotes improved academic performance, digital skills and innovative learning practices among students. This study proved that there is a significant relationship between role of artificial intelligence and selected independent variables namely stream of study and nature of institution of the students in Erode city. Therefore, higher education institutions should implement comprehensive AI literacy and training programs tailored to diverse student groups, ensuring inclusive awareness, ethical usage, and effective integration of AI tools across all disciplines and academic levels.

REFERENCES

[1] Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). Trends in global higher education: Tracking an academic revolution. *UNESCO World Conference on Higher Education,* 1–22.

[2] Baladevaguru, & Gandhi, R. (2025). Harnessing AI for student success: A new era in higher education in Erode. *International Journal of Business and Economics Research (IJBER), 11*(1), 32–40.

[3] Gupta, S.L. (2007). *Marketing Research.* 1st Edition, New Delhi: Excel Books.

[4] https://urbeuniversity.edu/blog/the-future-benefits -of-artificial-intelligence-for-students

[5] https://varthana.com/student/articficial-intelligence-in-classroom

[6] Kothari, C.R., (2004). *Research Methodology – Methods and Technique.* Second Edition, New Age International Publishers, New Delhi.

[7] Mudenda, S. (2025). Impact of artificial intelligence on college and university students: A global transformation of the education system. *Creative Education, 16*(11), 1801–1828.

[8] Rajendra Nargundkar, (2019). *Marketing Research - Text and Cases.* 4th Edition, McGraw hill Education (India) Private Limited, Chennai.

[9] Ramya, N., & Prasath, S. (2024). Analyzing students' awareness and perceptions towards artificial intelligence technologies in higher education. International Journal of Creative Research Thoughts (IJCRT), 12(9), b872–b886.

[10] Sakthivel, G., & Meena Devi, P.G. (2024). Exploring The Role of Artificial Intelligence in Enhancing Educational Outcomes of College Students in Erode, *Educational Administration: Theory and Practice*, 30(11) 2401-2406.

[11] Sangeetha, T., & Devaraj, B. (2024). Assessing the impact of artificial intelligence on MBA pursuing students' knowledge with reference to Erode District. Journal of Emerging Technologies and Innovative Research (JETIR), 11(6), g487–g492.

[12] Velastegui-Hernandez, D. C., Rodriguez-Pérez, M. L., & Salazar-Garcés, L. F. (2023). Impact of artificial intelligence on learning behaviors and psychological well-being of college students. Salud, Ciencia y Tecnología – Serie de Conferencias, 2, 582, 1-15.