



Relationship Between Artificial Intelligence Usage and Emotional Maturity Among College Students

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Abstract

Artificial Intelligence (AI) has become an increasingly important part of the everyday lives of college students. Students use AI-based applications for academic learning, information searching, writing, problem-solving, communication, entertainment, and decision-making. While AI offers several educational advantages, its increasing use may also influence students' personal, social, and emotional development. Emotional maturity is an important characteristic that enables individuals to understand and manage their emotions, respond appropriately to situations, maintain healthy interpersonal relationships, and make responsible decisions. The present study aims to examine the relationship between Artificial Intelligence usage and emotional maturity among college students. A sample of 304 college students was selected for the study using an appropriate sampling technique. The study adopted the survey method. Data were collected using a tool designed to measure the level and pattern of Artificial Intelligence usage and Emotional Maturity Scale among college students and used for a standardized tool. The formulated hypotheses and objectives were tested using appropriate statistical technique t-test and F-Test Analysis of Variance (ANOVA) and Correlation Coefficient analysis. The findings may help teachers, parents, educational institutions, and policymakers promote the responsible and balanced use of AI while supporting students' emotional growth and well-being.

Keywords: Artificial Intelligence Usage, Emotional Maturity, College Students, Higher Education, Technology Use, Emotional Development.

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1. Introduction

The twenty-first century has witnessed rapid technological development, and Artificial Intelligence has emerged as one of the most influential technologies of the present era. Artificial Intelligence,

commonly referred to as AI, has gradually become a part of daily life. From search engines and recommendation systems to virtual assistants, intelligent learning platforms, and generative AI applications, individuals interact with AI in many different ways. In recent years, the expansion of AI-based tools has significantly influenced the field of education. College students are among the major users of emerging technologies. They use AI-based applications to search for information, prepare assignments, summarize academic materials, improve writing, translate languages, solve problems, generate ideas, and support learning. AI tools can provide immediate feedback and personalized learning opportunities. They can also assist students in completing academic tasks more efficiently.

The growing availability of generative AI has further increased students' interaction with intelligent technologies. AI-based systems are capable of producing text, images, summaries, suggestions, and other forms of content within a short period. As a result, students may increasingly depend on AI for academic and personal purposes. Although Artificial Intelligence offers many advantages, its increasing use also raises important questions about its influence on human behavior and development. College education is not limited to academic achievement. It is also an important period for personality development, social adjustment, decision-making, independence, responsibility, and emotional growth. Students experience various academic, social, family, and personal challenges during this stage of life. Their ability to understand and manage emotions plays an important role in their overall development. Emotional maturity refers to the ability of an individual to respond to situations in a balanced and appropriate manner. An emotionally mature person is generally able to understand personal feelings, regulate emotional reactions, tolerate frustration, adjust to changing situations, and maintain healthy relationships with others. Emotional maturity is therefore an important aspect of personality development.

College students today are living in an environment where technology is continuously influencing their learning habits and patterns of interaction. AI tools can make learning easier and more convenient. At the same time, excessive dependence on technology may reduce opportunities for independent thinking, direct interpersonal interaction, patience, and the ability to manage challenges independently. However, AI may also support emotional development when used responsibly. For example, AI-based tools may provide learning support, encourage reflection, help students organize their thoughts, and reduce academic stress in certain situations. Therefore, the relationship between Artificial Intelligence usage and emotional maturity deserves careful investigation. Understanding this relationship can help educators and institutions identify whether patterns of AI usage are associated with differences in the emotional development of college students. The present study, therefore, focuses on examining the Relationship between Artificial Intelligence Usage and Emotional Maturity among College Students.

2. Need of the Study

Artificial Intelligence is rapidly becoming an important part of higher education. College students increasingly use AI-based tools for academic and personal purposes. The availability of intelligent applications has made it possible for students to access information, generate content, solve academic problems, and receive assistance within a short period of time. The growing use of AI has created both opportunities and challenges for students. On the positive side, AI can support personalized learning, improve access to educational resources, provide immediate feedback, and help students complete academic tasks efficiently. On the other hand, excessive or uncritical dependence on AI may influence students' independent thinking, problem-solving ability, social interaction, and emotional development. Emotional maturity is particularly important during the college period. College students are preparing for professional and social responsibilities. They are required to manage academic pressure, interpersonal relationships, career decisions, and personal challenges. Students with higher emotional maturity may be better able to manage stress, control emotional reactions, adapt to new situations, and maintain positive relationships. The increasing integration of AI into students' lives makes it necessary to understand whether AI usage is associated with emotional maturity. Students may use AI differently depending on their academic needs, interests, digital competence, and personal characteristics. Some students may use AI as a supportive tool, while others may become highly dependent on it. Research on Artificial Intelligence in education has largely focused on academic achievement, learning outcomes, technology acceptance, AI literacy, ethical concerns, and teacher preparedness. Comparatively less attention has been given to the possible relationship between AI usage and emotional characteristics among college students. The present study is therefore important because it attempts to connect two significant areas of contemporary education: technological engagement and emotional development. The findings may provide useful information to teachers, college administrators, counsellors, parents, and policymakers. The study may also contribute to future research concerning the responsible use of Artificial Intelligence and the holistic development of students. Thus, there is a clear need to investigate the relationship between Artificial Intelligence usage and emotional maturity among college students.

3. Review of Related Literature

Luckin, Holmes, Griffiths, and Forcier (2016) highlighted the potential of Artificial Intelligence to support learning by providing personalized and adaptive educational experiences. AI technologies can assist learners by responding to individual learning needs and providing timely support.

Zawacki-Richter, Marín, Bond, and Gouverneur (2019) reviewed research related to Artificial Intelligence in higher education and identified several important areas of application, including

profiling and prediction, intelligent tutoring systems, assessment and evaluation, and adaptive learning. Their review indicated that AI has significant potential to influence the future of higher education.

Holmes, Bialik, and Fadel (2019) emphasized that Artificial Intelligence can support education by making learning more personalized and accessible. However, they also stressed the importance of maintaining human values and ethical considerations while integrating AI into education.

Kasneci et al. (2023) discussed the educational opportunities and challenges associated with large language models such as ChatGPT. The study highlighted that such technologies can provide support for writing, learning, feedback, and information access. At the same time, concerns were raised regarding overdependence, academic integrity, critical thinking, and the need for responsible use.

Alenezi (2024) examined the relationship between Artificial Intelligence, emotional intelligence, and e-learning in higher education. The study emphasized the importance of considering emotional intelligence when integrating AI into educational environments. The findings suggest that technological development should be accompanied by attention to students' emotional and human characteristics. This perspective is directly relevant to the present study because it supports the examination of AI-related experiences alongside emotional development.

Wang and colleagues (2025) investigated the role of AI-powered tools in relation to emotion regulation, psychological well-being, motivation, and academic performance among college students. The study focused on the use of AI-supported applications in higher education. The research is relevant because emotional regulation represents an important aspect of emotional maturity. The findings support the argument that AI-assisted educational experiences may have implications beyond academic achievement and may influence students' psychological and emotional functioning.

Kohnke and Moorhouse (2025) conducted a qualitative investigation into the emotional aspects of language education through generative Artificial Intelligence. Their findings indicated that generative AI could enhance emotional engagement and motivation among university students. Students also perceived AI as a supportive tool that could reduce anxiety in certain learning situations. However, the study emphasized that cultural context, technical difficulties, and the continuing importance of human interaction should be considered. The researchers concluded that a balance between AI-based support and human elements is important for students' emotional experiences.

Lin and Chen (2024) investigated AI-integrated educational applications in relation to college students' creativity and academic emotions. Using a mixed-method approach, the researchers explored students' and teachers' perceptions and attitudes towards AI-integrated educational applications. The findings indicated that AI applications provide several opportunities for learning; however, some students perceived AI interactions as repetitive and impersonal. Such experiences were associated with emotional disengagement and concerns regarding restrictions on creativity. The study

demonstrates that the nature and manner of AI interaction may influence students' emotional experiences in educational environments.

Ortega-Ochoa et al. (2024) examined the role of generative Artificial Intelligence in addressing students' cognitive and emotional needs. The review explored the potential of generative AI and large language models to respond to students' educational requirements. The findings suggested that AI can provide support for students' cognitive and emotional needs; however, the review also identified important deficiencies in the ability of AI systems to understand complex human emotions and provide support comparable to human interaction. The study highlighted the importance of examining both the benefits and limitations of AI in relation to students' emotional development.

Research Gap

The review of recent literature from 2021 to 2025 indicates that research on Artificial Intelligence in higher education has mainly focused on academic achievement, personalized learning, motivation, engagement, AI acceptance, creativity, and educational outcomes. More recent studies have begun to examine emotional engagement, emotion regulation, psychological well-being, self-control, self-esteem, self-efficacy, and emotional intelligence in relation to AI usage. However, very limited research has directly examined the relationship between Artificial Intelligence usage and emotional maturity among college students. Emotional maturity is a broader construct involving emotional stability, emotional adjustment, independence, appropriate emotional responses, and the ability to manage personal and social situations responsibly. Therefore, the present study seeks to address this gap by examining the relationship between Artificial Intelligence usage and emotional maturity among college students. The study is expected to contribute to the growing body of literature concerning the psychological and emotional implications of AI use in higher education.

4. Objectives of the Study

The present study has the following objectives:

- To determine the level of Artificial Intelligence usage among college students.
- To determine the level of emotional maturity among college students.
- To find out whether there is any significant difference in Artificial Intelligence usage and Emotional Maturity among college students in respect to
 - Gender
 - Locality
 - Types of Management
 - Age Group

- To find out whether there is any significant relationship between Artificial Intelligence usage and Emotional Maturity among college students.

5. Hypotheses of the Study

The following null hypotheses are formulated for the study:

- There is no significant difference between (Gender) male and female College Students with respect to their Artificial Intelligence usage and Emotional Maturity.
- There is no significant difference between rural and urban College Students with respect to their Artificial Intelligence usage and Emotional Maturity.
- There is no significant difference among type of management (government / government-aided / private) College Students with respect to their Artificial Intelligence usage and Emotional Maturity.
- There is no significant difference between college students belonging to different age group (below 30-Years, 31-40 Years, 41-50 Years and above 51 Years) with respect to their Artificial Intelligence usage and Emotional Maturity.
- There is no significant relationship between Artificial Intelligence usage and Emotional Maturity among college students.

6. Methodology:

The investigator adopted the survey method of study and selected the stratified random sampling technique. 304 college students were randomly selected from various colleges belongs to government, government-aided and self-financed management. Data were collected using a tool designed to measure the level and pattern of Artificial Intelligence usage and Emotional Maturity Scale among college students used for a standardized tool. A Personal Data Sheet was also created by the investigator. The formulated hypotheses and objectives were tested using appropriate statistical technique t-test and F-Test Analysis of Variance (ANOVA) and Correlation Coefficient analysis.

7. Testing of Hypothesis:

Hypothesis – 1

There is no significant difference between (Gender) male and female College Students with respect to their Artificial Intelligence usage and Emotional Maturity.

Table 1						
Details of t-Test Result for Gender						
Variables	Gender	N	Mean	SD	t-Value	LOS
ARTIFICIAL INTELLIGENCE USAGE	MALE	100	106.21	9.818	0.997	Not Significant
	FEMALE	204	107.40	9.618		

*LOS- Level of Significance.

Table 1 indicates that the obtained t-value is 0.997. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results ($t = 0.997 < 1.96$), Therefore, the null hypothesis, that there is no significant difference between male and female College Students with respect to their Artificial Intelligence usage and Emotional Maturity is accepted.

Table 2						
Details of t-Test Result for Gender						
Variables	Gender	N	Mean	SD	t-Value	LOS
EMOTIONAL MATURITY	MALE	100	63.08	4.084	0.855	Not Significant
	FEMALE	204	63.50	3.746		

*LOS- Level of Significance.

Table 2 indicates that the obtained t-value is 0.855. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results ($t = 0.855 < 1.96$), Therefore, the null hypothesis, that there is no significant difference between male and female College Students with respect to their Artificial Intelligence usage and Emotional Maturity is accepted.

Hypothesis – 2

There is no significant difference between rural and urban College Students with respect to their Artificial Intelligence usage and Emotional Maturity.

Table 3						
Details of t-Test Result for Locality						
Variables	Locality	N	Mean	SD	t-	LOS

					Value	
ARTIFICIAL INTELLIGENCE USAGE	RURAL	89	102.90	9.327	4.940	Significant
	URBAN	215	108.71	9.332		

***LOS- Level of Significance.**

Table 3 indicates that the obtained t-value is 4.940. It is greater than the table value of 2.58 at 0.01 level of significance. These results suggest that there is significant College Students with respect to their Artificial Intelligence usage and Emotional Maturity between rural and urban areas ($t = 4.940 > 2.58$). Therefore, the null hypothesis is not accepted.

Table 4						
Details of t-Test Result for Locality						
Variables	Locality	N	Mean	SD	t-Value	LOS
EMOTIONAL MATURITY	RURAL	89	63.88	3.460	1.602	Not Significant
	URBAN	215	63.14	4.000		

***LOS- Level of Significance.**

Table 4 indicates that the obtained t-value is 1.602. It is less than the table value of 1.96 at 0.05 level of significance. It is inferred from these results ($t = 1.602 < 1.96$), Therefore, the null hypothesis, that there is no significant difference between rural and urban College Students with respect to their Artificial Intelligence usage and Emotional Maturity is accepted.

Hypothesis – 3

There is no significant difference among type of management (government / government-aided / private) College Students with respect to their Artificial Intelligence usage and Emotional Maturity.

Table 5						
Details of F-ratio Result for Type of Management						
Variables	Type of Management	N	Mean	SD	F-ratio	LOS
ARTIFICIAL	Government	89	64.81	3.236	21.577	Significant

INTELLIGENCE USAGE	Aided	98	64.05	3.047		
	Private	117	61.68	4.279		
	Total	304	63.36	3.859		

*LOS- Level of Significance.

As shown in the Table 7 indicates that the obtained F-value is 21.577; it is greater than the Table Value of 6.64 at 0.01 level of significant. It is inferred from this result $F = 21.577 > 6.64$. Hence, the formulated null hypothesis that there is significant difference among college students belonging to difference type of management (government, government-aided and private) with respect to their Artificial Intelligence usage and Emotional Maturity is not accepted.

Table 6						
Details of F-ratio Result for Type Of Management						
Variables	Type of Management	N	Mean	SD	F-ratio	LOS
EMOTIONAL MATURITY	Government	89	84.98	2.671	1.875	Not Significant
	Aided	98	84.87	2.118		
	Private	117	85.40	1.672		
	Total	304	85.11	2.153		

*LOS- Level of Significance.

As shown in the Table 8 indicates that the obtained F-value is 1.875; it is less than the Table Value of 3.84 at 0.05 level of significant. It is inferred from this result $F = 1.875 < 3.84$. Hence, the formulated null hypothesis that there is no significant difference among college students belonging to difference type of management (government, government-aided and private) with respect to their Artificial Intelligence usage and Emotional Maturity is accepted.

Hypothesis – 4

There is no significant difference between college students belonging to different age group (below 30-Years, 31-40 Years, 41-50 Years and above 51 Years) with respect to their Artificial Intelligence usage and Emotional Maturity.

Table 7						
Details of F-ratio Result for Age Group						
Variables	Age Group	N	Mean	SD	F-ratio	LOS

ARTIFICIAL INTELLIGENCE USAGE	Below 20 yrs	21	114.1	4.482	16.916	Significant
	21 - 30 yrs	147	108.86	9.34		
	Above 31 yrs	136	103.9	9.586		
	Total	304	107.01	9.684		

***LOS- Level of Significance.**

As shown in the Table 5 indicates that the obtained F-value is 16.916; it is greater than the Table Value of 6.64 at 0.01 level of significant. It is inferred from this result $F = 16.916 > 6.64$. Hence, the formulated null hypothesis that there is significant difference among college students belonging to different age group (Below 20-years, 21 - 30 years and Above 31 years) with respect to their Artificial Intelligence usage and Emotional Maturity is not accepted.

Table 8						
Details of F-ratio Result for Age Group						
Variables	Age Group	N	Mean	SD	F-ratio	LOS
EMOTIONAL MATURITY	Below 20 yrs	21	62.90	4.110	0.492	Not Significant
	21 - 30 yrs	147	63.21	3.959		
	Above 31 yrs	136	63.59	3.723		
	Total	304	63.36	3.859		

***LOS- Level of Significance.**

As shown in the Table 6 indicates that the obtained F-value is 0.492; it is less than the Table Value of 3.84 at 0.05 level of significant. It is inferred from this result $F = 0.492 < 3.84$. Hence, the formulated null hypothesis that there is no significant among college students belonging to difference age group (Below 20-years, 21 - 30 years and Above 31 years) with respect to their Artificial Intelligence usage and Emotional Maturity is accepted.

Hypothesis – 5

There is no significant relationship between Artificial Intelligence usage and emotional maturity among college students.

Table 9				
Details of Correlation Coefficient Result for relationship between Artificial Intelligence usage and emotional maturity in college students				
Variables	N	Correlation Coefficient	'r' Value	LOS
ARTIFICIAL INTELLIGENCE USAGE AND EMOTIONAL MATURITY	304	0.071	0.217	Not Significant

***LOS- Level of Significance.**

Based on the computed correlation coefficient 'r' value in Table 9, and examination of the table above that the correlation 'r' value is 0.217 which is significant at the 0.01 level. Therefore, the null hypothesis is accepted. Thus, the college students with respect to their Artificial Intelligence usage and emotional maturity are positively correlated.

8. Major Findings of the study

The present study examined the relationship between Artificial Intelligence usage and emotional maturity among college students. The study was conducted with a sample of 304 college students. Based on the analysis and interpretation of the collected data, the following major findings were obtained:

The Major findings of the study revealed that gender did not significantly influence either Artificial Intelligence usage or emotional maturity among college students. Locality and age significantly influenced Artificial Intelligence usage, whereas they did not significantly influence emotional maturity. Similarly, the type of management showed a significant difference in Artificial Intelligence usage but no significant difference in emotional maturity. The study further revealed that although there was a positive relationship between Artificial Intelligence usage and emotional maturity, the relationship was not statistically significant. This indicates that Artificial Intelligence usage alone may not be a determining factor in the emotional maturity of college students.

9. Discussion of the results

The discussion of the study indicate that Artificial Intelligence usage differs significantly according to locality, age, and type of management, whereas gender does not significantly influence AI usage. This

suggests that access to technology, exposure to digital environments, institutional facilities, and generational familiarity may play an important role in determining how college students use Artificial Intelligence.

In contrast, emotional maturity was not found to differ significantly with respect to gender, locality, age, or type of management. This indicates that emotional maturity may be a relatively stable psychological characteristic that is influenced by a complex combination of personal experiences, family background, social relationships, personality, and individual adjustment.

The study also found no statistically significant relationship between Artificial Intelligence usage and emotional maturity. This finding suggests that increased use of AI does not necessarily result in either higher or lower emotional maturity among college students.

Therefore, the findings emphasize the importance of maintaining a balanced approach towards Artificial Intelligence in higher education. Colleges should encourage students to develop AI literacy and technological competence while simultaneously promoting emotional development, self-awareness, emotional regulation, interpersonal skills, and responsible decision-making.

The present study contributes to the growing understanding that technological development and human development should be considered together. While Artificial Intelligence can enhance learning and provide academic support, the emotional maturity of students requires continued attention through meaningful human interaction, counselling, social experiences, and opportunities for personal growth.

10. Educational Implications:

The findings of the present study may have several educational implications.

- First, the study may help teachers understand how students are using Artificial Intelligence in their academic and personal lives. Teachers can guide students to use AI as a supportive learning tool rather than becoming completely dependent on it.
- Second, educational institutions may develop awareness programmes related to responsible and ethical AI usage. Students need guidance regarding the appropriate use of AI, academic honesty, data privacy, critical thinking, and the limitations of AI-generated information.
- Third, the study may highlight the importance of emotional development in technology-rich educational environments. Colleges should focus not only on developing students' digital and technological skills but also on strengthening emotional maturity, social skills, self-regulation, empathy, and responsible decision-making.
- Fourth, counselling and student support services may help students who experience difficulties related to technology dependence, academic stress, or social isolation. Programmes promoting

emotional well-being may support students in maintaining a healthy balance between technology use and personal development.

- Fifth, curriculum planners may consider integrating AI literacy with human values and emotional development. Students should learn not only how to use AI but also when and why it should be used.
- Finally, the findings may encourage future researchers to investigate the psychological and emotional consequences of emerging technologies. As AI continues to develop, research is necessary to understand its influence on students' overall development.

11. Conclusion:

Artificial Intelligence has become an important part of the educational experiences of college students. AI-based tools provide students with opportunities for personalized learning, information access, writing assistance, problem-solving, and creative support. The increasing use of these technologies makes it important to understand their relationship with different aspects of student development. Emotional maturity is an essential characteristic that supports students in managing emotions, adjusting to different situations, maintaining interpersonal relationships, and making responsible decisions. The college period is particularly important for emotional growth because students encounter a variety of academic, social, and personal challenges.

The present study focuses on examining the relationship between Artificial Intelligence usage and emotional maturity among college students. The study is significant because it brings together technological and psychological dimensions of student development. Artificial Intelligence itself may not determine whether students become emotionally mature or immature. Rather, the influence of AI may depend on how, why, and how frequently students use it. Responsible and balanced use of AI may support learning and reduce certain academic difficulties, whereas excessive dependence may potentially affect independent functioning and personal development.

Therefore, educational institutions should promote a balanced approach to Artificial Intelligence. Students should be encouraged to develop technological competence while also strengthening emotional stability, self-awareness, empathy, independence, and responsible decision-making.

The findings of the study may contribute to a better understanding of the relationship between technology use and emotional development among college students. Such research is important for ensuring that technological advancement supports not only academic progress but also the holistic development of young people.

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