

Artificial Intelligence and Student Well-Being in Higher Education: A Case Study of Rajouri District

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Abstract

Artificial Intelligence (AI) has become an increasingly important component of higher education, influencing teaching, learning, academic support, and institutional practices. AI-powered tools such as adaptive learning systems, intelligent tutoring systems, virtual assistants, and learning analytics are reshaping students' academic experiences by improving access to information, supporting self-paced learning, and enhancing engagement. At the same time, the growing use of AI in higher education has raised concerns relating to privacy, ethical use, digital fatigue, and the quality of human interaction in learning environments. Against this background, the present study examines undergraduate students' perceptions of AI tools and their influence on student well-being and daily academic work in degree colleges of Rajouri District, Jammu and Kashmir.

The study adopted a quantitative approach using a descriptive survey design. Primary data were collected from 387 undergraduate students selected through stratified random sampling from degree colleges in Rajouri District. A structured questionnaire consisting of 25 statements measured on a five-point Likert scale was used to assess five dimensions: mental and emotional well-being, social interaction, academic engagement and performance, ethical concerns and privacy, and inclusivity and accessibility. Data were coded in Microsoft Excel and analyzed in SPSS Version 26 using descriptive statistics such as minimum, maximum, mean, and standard deviation.

The findings reveal that students generally perceive AI as beneficial for reducing academic stress, improving confidence, supporting workload management, and enhancing learning efficiency. Academic engagement and inclusivity emerged as especially strong dimensions, with students reporting that AI tools save time, support self-paced learning, and should be made equally accessible to all learners. However, the study also found that AI tools are not perceived as significantly improving peer interaction, teamwork, or collaborative learning, and many students expressed concern about privacy, ethical use, and mental fatigue associated with prolonged AI use. The paper concludes that AI has considerable potential to enrich higher education, but its educational value depends on balanced, ethical, and inclusive implementation supported by institutional transparency and human guidance.

Keywords: Artificial Intelligence, Higher Education, Student Well-Being, Academic Engagement, Inclusivity, Ethical Concerns, Rajouri District

Introduction

Artificial Intelligence (AI) has emerged as a transformative force in higher education, influencing how students learn, communicate, access academic resources, and manage day-to-day educational responsibilities. Educational institutions are increasingly integrating AI-driven technologies into teaching and support systems in order to create more personalized, efficient, and accessible learning environments. Technologies such as adaptive learning platforms, intelligent tutoring systems, virtual assistants, predictive analytics, and automated feedback tools are now being used to improve educational delivery and student support.

The expansion of AI in higher education has opened important opportunities for improving student well-being and academic productivity. AI-based tools can reduce academic stress through timely support, simplify information retrieval, assist with note-making and assignment preparation, and help students organize study schedules more effectively. In addition, AI applications can improve academic confidence by providing immediate feedback and offering individualized learning pathways that allow students to study at their own pace. At the same time, AI integration has generated concerns relating to privacy, transparency, overdependence on technology, techno-stress, and the weakening of human interaction within academic spaces.

These possibilities and tensions are particularly important in the context of Indian higher education, where institutions are increasingly experimenting with digital learning tools while also facing challenges of access, training, infrastructure, and equitable implementation. In regions such as Rajouri District in Jammu and Kashmir, AI-enabled learning tools have begun to influence students' academic experiences, yet empirical research on their broader impact remains limited. Much of the existing literature has focused either on academic performance or on the technical capabilities of AI systems, with less attention to how students themselves perceive the relationship between AI, well-being, and everyday academic work.

The present study addresses this gap by examining undergraduate students' perceptions of AI tools in degree colleges of Rajouri District, Jammu and Kashmir. It specifically investigates how students evaluate AI in relation to mental and emotional well-being, social interaction, academic engagement and performance, ethical concerns and privacy, and inclusivity and accessibility. By combining these dimensions in a single empirical study, the paper aims to contribute to a more balanced understanding of AI in higher education, highlighting both its supportive functions and the strains it may create for learners.

AI Applications in Higher Education

Artificial Intelligence has become an important part of higher education through applications that support instruction, personalized learning, academic advising, and student services. Adaptive learning systems personalize educational content according to students' learning needs and progress, allowing learners to move at an appropriate pace and strengthen their understanding of academic concepts. Intelligent tutoring systems provide explanations, guidance, and feedback in ways that support independent learning and help improve performance.

Learning analytics uses AI to examine student data, identify learning difficulties, and support timely intervention. Virtual assistants and chatbots respond to student queries and improve access to academic and administrative services, while predictive analytics helps institutions identify at-risk learners and intervene before academic difficulties intensify. These applications demonstrate that AI in higher

education is not limited to classroom teaching; it also shapes broader student experiences, institutional support systems, and academic decision-making.

Review of Literature

Earlier research has established that AI and related data-driven systems have significant potential to improve educational processes and student outcomes. Baker and Yacef (2009) and Siemens and Baker (2012) emphasized the role of educational data mining and learning analytics in identifying patterns of student learning and enabling timely intervention. Arnold and Pistilli (2012) further showed that predictive analytics can improve student retention and success through early warning systems.

Studies on personalized and adaptive learning have also demonstrated the educational value of AI-enabled systems. Pane et al. (2015) reported that personalized learning technologies can enhance engagement and achievement by addressing individual needs, while Luckin et al. (2016) highlighted the transformative potential of AI for intelligent tutoring and adaptive educational environments. Holmes, Bialik, and Fadel (2019) and Zawacki-Richter et al. (2019) similarly concluded that AI is increasingly relevant in higher education for teaching, support, and assessment.

A growing body of literature has also explored AI in relation to student well-being and support services. Fitzpatrick, Darcy, and Vierhile (2017) found that AI-based mental health chatbots can provide timely emotional support, and Moise, Sulea, and Sava (2020) noted that AI applications can assist in identifying psychological distress and offering guidance. At the same time, Tarafdar, Cooper, and Stich (2019) highlighted the negative side of extensive technology use, especially techno-stress and digital fatigue, while Rodway and Schepman (2023) reported that students may value AI academically but remain concerned about overdependence and reduced interpersonal interaction.

Ethical and governance concerns have become central in more recent scholarship. Nazareno and Schiff (2021) emphasized the importance of transparency, fairness, accountability, and data privacy in AI implementation, while UNESCO (2021) stressed that AI in education should be deployed responsibly and inclusively. Although these studies collectively demonstrate the importance of AI in higher education, most have concentrated either on teaching and learning outcomes or on institutional uses of AI. Limited attention has been given to the combined influence of AI on student well-being, everyday academic work, social interaction, and perceptions of inclusivity within specific regional higher education contexts. This study therefore addresses a meaningful gap by examining these issues together in the case of undergraduate students in Rajouri District, Jammu and Kashmir.

Research Gap

Despite a growing body of literature on AI in higher education, existing studies have largely focused on academic performance, personalized learning, and institutional efficiency rather than on the combined relationship between AI, student well-being, and daily academic work. Research has also tended to emphasize the promise of AI more than the tensions associated with social interaction, privacy, mental fatigue, and institutional trust. In addition, region-specific empirical evidence from Jammu and Kashmir remains limited. The present study fills this gap by examining how undergraduate students in Rajouri District perceive the supportive and challenging dimensions of AI across multiple aspects of academic life.

Objectives of the Study

1. To examine the applications of Artificial Intelligence in higher education.
2. To analyze the influence of Artificial Intelligence on student well-being.
3. To explore the impact of Artificial Intelligence on students' day-to-day academic activities.
4. To identify the challenges associated with the integration of Artificial Intelligence in higher education.

Research Methodology**Research Design**

The study adopted a quantitative approach based on a descriptive survey research design. This design was considered suitable because it enabled the systematic collection and analysis of students' perceptions regarding the influence of AI on well-being and academic experiences.

Study Area and Population

The study was conducted in Rajouri District of Jammu and Kashmir. The target population consisted of undergraduate students enrolled in degree colleges within the district. Rajouri was selected because AI-enabled learning tools are increasingly used by students in the region, while empirical evidence on their academic and psychological effects remains limited.

Sample and Sampling Technique

A total of 387 undergraduate students participated in the study. Respondents were selected using a stratified random sampling technique in order to ensure representation from different degree colleges within the study area.

Data Collection Instrument

Primary data were collected through a structured questionnaire developed for the study. The instrument consisted of 25 statements measured on a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. The questionnaire was organized into five sections: Mental and Emotional Well-being, Social Interaction, Academic Engagement and Performance, Ethical Concerns and Privacy, and Inclusivity and Accessibility.

Data Collection Procedure

Printed questionnaires were distributed among undergraduate students in the selected degree colleges. Respondents were informed about the purpose of the study, participation was voluntary, and completed questionnaires were screened and verified before analysis.

Data Analysis

The responses were first coded and organized in Microsoft Excel and then imported into SPSS Version 26 for statistical analysis. Data quality checks included verification of missing values, response consistency, and out-of-range entries. Descriptive statistics, including minimum, maximum, mean, and standard deviation, were computed to interpret students' perceptions across all study variables.

Results and Analysis**Construct-level overview**

The construct-wise results show a clear pattern: students rated inclusivity and accessibility, academic engagement, and mental and emotional well-being very highly, while social interaction received consistently low scores. Ethical concerns and privacy also recorded high agreement, indicating that support for AI is accompanied by strong concerns about responsible use and transparency.

Table 1.1: Construct-level overview

Construct	Mean pattern	Interpretation
Mental and Emotional Well-being	4.44 to 4.71	Strong positive perception, with simultaneous awareness of mental fatigue
Social Interaction	2.28 to 2.53	AI is not perceived as improving peer interaction or collaboration
Academic Engagement and Performance	4.35 to 4.73	Very strong support for efficiency, motivation, and self-paced learning
Ethical Concerns and Privacy	3.85 to 4.71	Students want privacy, fairness, and transparency, but trust institutions less strongly
Inclusivity and Accessibility	4.56 to 4.78	Strongest support, especially for equal access and institutional training

Table 1.2: Mental and Emotional Well-being

Item	N	Min	Max	Mean	SD
Q1: AI tools reduce my academic stress	387	3	5	4.62	0.491
Q2: AI helps me manage my workload better	387	2	5	4.67	0.506
Q3: AI makes studying less stressful during exams	387	3	5	4.44	0.542
Q4: Using AI makes me feel more confident in studies	387	2	5	4.60	0.592
Q5: AI feedback helps me improve after mistakes	387	2	5	4.71	0.477
Q6: Prolonged use of AI tools sometimes makes me mentally tired	387	1	5	4.59	0.715

The findings for mental and emotional well-being indicate a strong positive perception of AI among respondents. The mean scores for the six items ranged from 4.44 to 4.71, placing all statements within the agreement to strong agreement range. Students particularly agreed that AI feedback helps them improve after mistakes, that AI helps manage workload better, and that AI reduces academic stress. At the same time, respondents also agreed that prolonged use of AI tools can lead to mental tiredness, indicating that the benefits of AI coexist with a perceived risk of digital fatigue.

Table 1.3: Social Interaction

Item	N	Min	Max	Mean	SD
Q7: AI platforms help me connect with classmates	387	1	5	2.28	0.728
Q8: AI-supported learning improves teamwork and collaboration	387	1	5	2.38	0.646
Q9: AI tools encourage more group-based learning	387	1	5	2.43	0.695
Q10: I communicate more with peers through AI-based activities	387	1	5	2.53	0.727

A contrasting pattern emerged in the domain of social interaction. All four items in this section recorded means below the neutral midpoint of 3.0, ranging from 2.28 to 2.53. Students disagreed that AI platforms help them connect with classmates, improve teamwork and collaboration, encourage group-

based learning, or increase communication with peers through AI-based activities. These results indicate that, within the present institutional context, AI is perceived more as an individual learning aid than as a tool for collaborative or socially interactive learning.

Table 1.4: Academic Engagement and Performance

Item	N	Min	Max	Mean	SD
Q11: AI tools make learning more interesting and engaging	387	1	5	4.50	0.545
Q12: AI helps me understand difficult topics more easily	387	2	5	4.61	0.533
Q13: AI feedback improves my academic performance	387	2	5	4.35	0.538
Q14: AI motivates me to learn new topics	387	1	5	4.59	0.592
Q15: AI allows me to study at my own pace	387	2	5	4.64	0.551
Q16: I rely on AI tools when facing difficult academic tasks	387	2	5	4.37	0.572
Q17: AI tools help me save time while studying	387	---	---	4.73	0.514

Students reported strong agreement that AI improves their academic engagement and study efficiency. The highest-rated item in the entire study was “AI tools help me save time while studying.” Other highly rated items included self-paced learning, easier understanding of difficult topics, and motivation to learn new topics. Overall, the findings suggest that AI is strongly associated with engagement, convenience, and productivity in students’ daily academic work.

Table 1.5: Ethical Concerns and Privacy

Item	N	Min	Max	Mean	SD
Q18: I worry about the privacy of my data when using AI tools	386	1	5	4.43	0.708
Q19: I trust AI tools used by my institution for learning support	387	1	5	3.85	1.078
Q20: AI systems should be used ethically and fairly in education	387	1	5	4.66	0.658
Q21: I would like transparency in how AI provides recommendations	387	2	5	4.71	0.508

Students expressed substantial concern regarding the ethical and privacy implications of AI use. Respondents agreed that they worry about the privacy of their data when using AI tools, that AI systems should be used ethically and fairly in education, and that they want transparency in how AI provides recommendations. Institutional trust was more cautious and divided, indicating that while students support AI in principle, their confidence in institutional AI use is mixed and shaped by concerns about governance, privacy, and transparency.

Table 1.6: Inclusivity and Accessibility

Item	N	Min	Max	Mean	SD
Q22: AI tools support students with different learning needs	387	3	5	4.77	0.427
Q23: All students should have equal access to AI learning tools	387	3	5	4.78	0.422

Q24: AI can help improve learning outcomes for all students	387	3	5	4.56	0.538
Q25: My institution should provide training for effective AI use	387	4	5	4.76	0.425

The strongest positive pattern in the study appeared in the area of inclusivity and accessibility. Students strongly agreed that AI tools support learners with different learning needs, that all students should have equal access to AI learning tools, and that institutions should provide training for effective AI use. These findings show that students view AI not only as a tool for efficiency but also as a mechanism that can broaden educational inclusion, provided access and support are distributed fairly.

Discussion

The findings of the study reveal that AI occupies a complex but largely positive place in the academic lives of undergraduate students in Rajouri District. In terms of mental and emotional well-being, students reported that AI reduces stress, helps manage workload, and improves confidence, suggesting that AI is experienced as a useful support system in routine academic life. This aligns with prior work highlighting the supportive role of AI-based feedback, tutoring, and mental health tools in education.

At the same time, the finding that prolonged AI use is associated with mental fatigue demonstrates that AI support is not cost-free. The paper's title phrase "support and strain" is therefore empirically justified by the coexistence of positive academic assistance and negative psychological side effects. This duality also reflects broader debates in the literature concerning techno-stress, overdependence on technology, and the need for balanced digital engagement in higher education.

The study also shows that AI is perceived as highly useful for academic engagement and performance-related tasks. Time-saving, self-paced learning, easier understanding of difficult topics, and motivation to explore new content all received strong endorsement from respondents. These findings reinforce the view that AI's most immediate educational value lies in improving efficiency, access, and individual learning support.

However, the social dimension presents a notable limitation. Students did not perceive AI as improving peer interaction, teamwork, or collaborative learning, suggesting that AI in the present setting is operating primarily as an individualized technology rather than a socially embedded educational tool. This has important implications for institutions that may assume digital systems naturally foster collaborative learning; without intentional design and pedagogical integration, such outcomes may not materialize.

Ethical concerns and privacy emerged as another major theme. Students' strong demand for transparency and fair use of AI indicates that acceptance of AI is conditional rather than unconditional. The moderate mean and high variation in institutional trust further suggest that student confidence depends on how clearly institutions communicate data practices, accountability measures, and the purpose of AI-enabled support systems.

Finally, the findings on inclusivity and accessibility demonstrate that students see AI as potentially democratizing when it is implemented fairly. Their strong support for equal access and institutional training indicates that learners do not merely want AI tools to exist; they want them to be available equitably and supported through meaningful guidance. In the Indian higher education context, especially in semi-urban and regionally diverse settings, this emphasis on inclusion is particularly important for ensuring that technological change does not deepen educational inequality.

Implications

The study has practical implications for teachers, college administrators, and higher education policymakers. Institutions should treat AI as a complementary academic support tool rather than a replacement for human guidance and classroom interaction. Structured training on responsible AI use, clear privacy and data protection policies, and transparent communication about AI-driven systems are essential for strengthening trust and maximizing educational value.

The findings also suggest that AI policy in higher education should go beyond efficiency and innovation narratives. Equal access, inclusivity, and support for students with diverse learning needs should be central to institutional AI strategies. Further, colleges should actively monitor digital fatigue and encourage healthy patterns of AI use so that the benefits of AI do not produce unintended psychological strain.

Limitations of the Study

The study has certain limitations that should be considered while interpreting the findings. First, it was limited to undergraduate students from degree colleges in Rajouri District, Jammu and Kashmir, and therefore the results may not be generalizable to other regions or educational settings. Second, the research relied on self-reported questionnaire responses, which may reflect personal perceptions and subjective judgments. Third, the study focused on perceived influence rather than measuring actual academic performance or behavioral outcomes. Finally, because AI technologies evolve rapidly, students' experiences and perceptions may also change over time.

Recommendations

The following recommendations are suggested to maximize the positive impact of AI on student well-being and educational outcomes.

1. Educational institutions should formulate clear policies and ethical guidelines for the responsible use of AI technologies in higher education.
2. Strong data privacy and security measures should be implemented to protect student information and build institutional trust in AI systems.
3. Colleges and universities should provide structured training and awareness programs to help students use AI tools effectively and responsibly.
4. AI technologies should complement, rather than replace, human interaction, teacher support, and academic guidance.
5. Institutions should ensure equal access to AI-enabled learning resources so that all students can benefit regardless of background.
6. Regular monitoring and evaluation of AI systems should be conducted to ensure fairness, transparency, and educational effectiveness.
7. Student support services should address digital fatigue, techno-stress, and excessive dependence on AI tools.
8. Greater emphasis should be placed on using AI to enhance inclusivity, accessibility, and personalized learning experiences.
9. Educational institutions should promote ethical and responsible use of AI in routine academic activities.

10. Future innovation in higher education should aim to balance technological advancement with student well-being and social learning needs.

Scope for Future Research

Future research may extend this work by including students from different regions, universities, and educational levels in order to improve generalizability. Comparative studies may also examine how AI perceptions differ across disciplines, gender groups, urban and rural settings, or public and private institutions. Longitudinal research would be especially useful for examining whether the perceived benefits and strains of AI change over time. Future studies may also investigate the relationship between AI use and objective academic performance, psychological outcomes, or collaborative learning behavior.

Conclusion

Artificial Intelligence has become an important part of contemporary higher education, and the findings of this study show that students in Rajouri District generally perceive it as a valuable academic support system. AI is associated with reduced academic stress, stronger confidence, better workload management, greater study efficiency, and more inclusive learning opportunities. At the same time, students do not see AI as improving social interaction, and they express significant concerns about privacy, transparency, institutional trust, and mental fatigue caused by prolonged use.

The study therefore demonstrates that AI in higher education is neither purely beneficial nor inherently harmful. Rather, it operates as a technology of both support and strain, offering meaningful academic advantages while also creating ethical, psychological, and social challenges. The educational value of AI will depend on how responsibly, inclusively, and transparently institutions integrate it into student life. In this sense, the future of AI in higher education should be guided not only by innovation, but also by well-being, fairness, and the preservation of meaningful human support in learning environments

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