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"Exploring The Impact Of Artificial Intelligence On Psychological Well-Being And Academic Performance Of Students In Higher Education": An Empirical Study

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Abstract
The growing integration of artificial intelligence (AI) in higher education is transforming the way students interact with both their academic work and personal lives. AI has a significant impact on various aspects of students' well-being, including their mental health, social connections, and educational experiences. During this discussion, the present research work also offers advantages, such as personalised learning, mental health support, and more efficient communication, while also presenting challenges, including digital exhaustion, social isolation, technology-related stress, and a decline in human interaction. AI technologies, particularly those based on natural language processing (NLP) and machine learning (ML), are becoming increasingly scalable and accessible tools for supporting both psychological well-being and academic performance in higher education. This research paper will help ushelp us understand that that AI-driven tools offer continuous 24/7 support, overcoming barriers of time and distance, unlike traditional therapy methods, which are often limited by factors such as location, cost, and availability. The review also discusses that as AI becomes increasingly integrated into education, it becomes essential to create strategies that minimise its adverse impacts while fostering the overall well-being of students. A sample of 297 individuals was collected to obtain the study's results. The factors exploring the "Impact of Artificial Intelligence on Psychological Well-Being and Academic Performance of Students in Higher Education" are Digital Literacy and technical competence, Personalised and adaptive learning, Immediate feedback and support and Academic assistance and accessibility.

Keywords: Artificial Intelligence, Personalised learning, Human interaction, Machine learning, Higher education.

Introduction
The swift adoption of artificial intelligence (AI) in higher education is transforming the way students interact with learning materials and utilise their leisure time; however, their influence on their overall well-being is still not fully understood. "Artificial Intelligence (AI) is quickly transforming higher education, prompting important discussions about its effects on the well-being of both students and educators." In recent years, as universities increasingly adopt AI tools for learning, teaching, and administrative purposes, it has become essential to examine their impact on psychological well-being, workload, and overall academic experience. Through significantly influencing multiple areas such as healthcare, education, business and several sectors, "Artificial Intelligence (AI) has become deeply embedded in

everyday life, created to replicate human thinking, behaviour, and intelligence." The above-mentioned tools and technologies assist in solving challenges related to learning, medical diagnosis and treatment, manufacturing, and marketing. Ajani et.al. According to (2024), with rapid technological progress and the growing adoption of artificial intelligence, vast opportunities are emerging that call for a significant shift in how we adapt to the new realities of the digital era. AI has already started introducing innovative teaching and learning methods in this field of higher education, which are currently being tested and refined across various settings. Through offering significant potential by personalising the learning process, it also enables students to receive content tailored to their learning preferences and grasp complex topics more effectively. Artificial Intelligence (AI) is now becoming a regular part of everyday life, from voice assistants like Siri and Alexa to customised recommendations on social media. Although Kuleto et.al. (2021) asserted that the introduction of AI in higher education simplifies many tasks and ensures instant access towards information, it also acknowledges challenges, particularly for younger individuals who are still developing emotionally and cognitively. AI demands robust infrastructure and a supportive network of active innovators. Numerous studies also indicate that AI-driven adaptive learning could lead to a boost in students' test results by 65% and enhance overall academic achievement by 30%. Soelistiono. (2023) mentioned that many AI-based tools are now being created, which combine traditional educational principles with modern technological innovations to assist both educators and learners. According to a recent report based on a survey of 40 major higher educational institutions (HEIs) across India, more than half of them are utilising generative AI to create educational content, while around 70% allow students to use AI-powered tools. These insights will emphasise how, throughout the higher educational sector, AI is being utilised in a wide range of areas, such as adaptive tutoring, automated assessment, plagiarism detection, curriculum development, and career counselling. The research work highlights that generative AI tools for producing learning materials, AI-based tutoring systems or chatbots, and personalised adaptive learning platforms are considered amongst the most common applications. These findings emphasise how AI is already shaping curriculum planning, evaluation methods, and classroom interaction approaches. To operate effectively, many AI systems also depend on students' submitted work, interaction habits, or biometric data. The present study also emphasised the need to integrate basic AI education into all academic programs so that every student, no matter their field of study, can gain essential knowledge of AI fundamentals, ethics, digital skills, critical thinking, and real-world applications.

Literature Review

According to George & Wooden. (2023), the quick adoption of artificial intelligence (AI) in higher education is transforming the way students interact with learning materials and manage their leisure time, yet its influence on their overall well-being will be well understood through this paper. Although Artificial Intelligence is increasingly being used in both personal and academic contexts, there is still a lack of research examining its true effects on students' wellness. AI-powered tools and technologies are increasingly becoming essential for educators and students, supporting not just in their academic work but also influencing how they use their free time. Sajja et.al. (2024) stated that from smart learning systems and customised study, it aids entertainment platforms and virtual communication apps, AI plays a more prominent role in their lives than ever before. The majority of students in higher education are spending more time on their screens, depending on AI for multiple activities, often with encouragement from their teachers, who encourage them to use these technologies

for coursework and research tasks. By offering personalised learning for students and by improving the efficiency of teachers, AI also allows educators of higher education to automate tasks so they are able to spend more time on teaching. Students are able to receive instant feedback, 24/7 tutoring and assistance, which helps them towards grasping difficult topics, while teachers use data analysis to identify struggling students and provide them with more customised and tailored lessons. Beyond academics, AI-powered tools and technologies also have a big impact on entertainment, as students use them while gaming, for social media, and for several other online activities in their leisure time. Zouhaier. (2023) mentioned that Artificial Intelligence has become a common part of modern life, which is considered a tool that will be able to improve and develop many areas of our daily activities. With the growth of information and communication technologies, their use has gained strong attention in higher education. AI supports teachers and educators of educational institutions of higher standards by handling them with their routine tasks such as grading, taking attendance, and scheduling, giving more time to focus on teaching and engaging with students. According to Mishra. (2025), it offers data-based insights into the student's progress for early support when needed, thereby helping create reports as well as manage communication. The admissions and enrollment process in higher education is one of the most time-consuming and resource-intensive tasks in educational institutions. Checking of applications and verifying documents often takes a lot of time, which can lead to mistakes. Artificial intelligence can automate these steps by making the process quicker and more efficient. Especially in large classes or schools, keeping track of students' attendance can take a lot of time and may lead to mistakes, so AI provides smart attendance systems that automate the process and improve accuracy. Shirkande et.al. (2024) mentioned that with AI-based tools, students are able to mark their attendance through mobile apps, removing the need for manual tracking. AI-powered facial recognition systems can record student attendance instantly as they walk into the classrooms. Attendance records are updated instantly and can be viewed by both students and teachers through a central dashboard. This tends to improve accuracy and saves time by reducing the need for manual data entry. AI-based scheduling tools can automatically create class timetables by considering factors like room availability, teacher schedules, and student choices. According to Natarajan et.al. (2025), "AI-powered technologies like virtual reality (VR) and augmented reality (AR) can recreate real-world situations and complex ideas, making learning more engaging and fun." For example, students of higher classes can visit historical places, perform virtual science experiments, or practice languages with AI avatars, encouraging them with a practical learning experience that improves understanding and memory. Administrative tasks like organising courses and managing resources are some of the important administrative duties for schools, especially in big educational institutions. Manual scheduling can cause delays, overlapping classes, or poor use of resources, but AI helps simplify and improve these tasks. Resources are neither overused nor left unused; AI tools can predict the best use of spaces like classrooms, labs, and equipment. AI can identify and fix scheduling clashes instantly by suggesting new time slots or rooms, which improves overall efficiency and ensures better use of resources. George & Wooden. (2023), asserted especially in large institutions amongst educators and students, it becomes difficult for administrative staff to manage students' questions; therefore, AI-driven chatbots help by giving automatic answers to common queries, such as those about admissions, class schedules, or financial aid. These chatbots are available 24/7, allowing students to get help even after office hours. Moreover, the influence of AI on students' education and learning process is transforming the overall approach to teaching by focusing on improving teaching methods and designing learning outcomes for better results. Through supporting their overall

academic growth and progress, AI also shapes and improves how students engage with their studies. Examines how AI's adaptive learning ability helps create personalised learning paths based on each and every student's performance, through ensuring the content matches their learning speed and understanding level. Improves the systems and methods to make learning more effective and efficient, focusing on students as the main part of the learning process. Increases the student's motivation to learn and also encourages their participation. Hooda et.al. (2022) mentioned that Artificial Intelligence offers support and guidance to help students reach their full learning potential by helping them to analyse each student's data, their strengths and weaknesses. This allows for creating personalised learning plans based on their needs, making the learning process amongst the students more interactive and effective on a global level. On the other hand, AI fully supports students and changes the way they gain knowledge because it acts as a digital tool for learning that helps answer students' questions, supports research, and strengthens their role as active learners. Baca & Zhushi. (2025), acknowledged integration of AI in higher education is gradually helping students build their competencies and improve their attitude toward the learning process. AI advancement is continuously working to enhance students' related skills and abilities. During the learning process, such technology is continuously helping to improve students' habits by guiding them and giving them the information they need. Technology acts as a tutor, encouraging changes in classroom practices. Supports and automates learning methods and techniques to help students achieve better results. AI offers a learning system that helps improve the academic performance of students in higher education by guiding them with the necessary information and knowledge for their studies. Enhances the overall quality of education through improving the learning process and supporting reflective thinking, helping students expand their knowledge and learning approach. Artificial Intelligence tools are already helping students find useful resources, handle daily stress, and detect early warning signs before any serious problems arise. Despite the fact that AI cannot replace human support, its impact can assist in many aspects of psychological well-being. Park et.al. (2025) mentioned that chatbots are able to share helpful information and regularly communicate with students to ease their stress levels through adjusting to college and daily student life. Chatbots are designed to address mental health and wellness issues, including the early warning signs and mild symptoms. The above-mentioned preventive measure aligns with helping counselling centres dedicate more time and resources to students with serious symptoms or urgent needs. AI-chatbots offer students an always-available, nonjudgmental space to talk about stress or anxiety, by offering them extra support alongside traditional mental health services and helping them reduce loneliness. The present research work suggests that, according to Velastegui et.al. (2023), Artificial Intelligence (AI) is becoming an important part of educational technology, providing students with easy access to guidance and support for their psychological well-being. Mental health plays a key role in student success in higher education, but many students, especially during and after the COVID-19 pandemic, faced challenges such as stress, anxiety, and depression. According to Van et.al. (2024), with well-designed AI-based systems that focus on student mental health and offer them the right tools and resources, students can be empowered to reach their full potential and succeed in their studies. AI ChatGPT can help students deal with stress, anxiety, and academic pressure by offering guidance, emotional support, and timely help. Such tools act as a virtual counsellor that is always available for students to share their concerns and receive personal advice. Overall, using AI ChatGPT offers emotional support along with helpful resources, as it may notice changes in behaviour or language that may signal mental health concerns. ChatGPT shows strong ability in many subjects and performs well in different types of tests. Using

these tools can help automate regular tasks, make learning more effective, increase productivity, and efficiency while supporting flexible, personalised learning. Relying too much on AI tools amongst the students and educators of higher education can sometimes weaken critical thinking and problem-solving abilities, as students might become overly dependent on automated help. Although AI offers several benefits in the educational sector, it becomes crucial to consider its ethical issues and challenges. Therefore, it becomes necessary to make sure that AI systems are unbiased and provide equal opportunities to all students.

Objective

Exploring the "Impact of Artificial Intelligence on Psychological Well-Being and Academic Performance of Students in Higher Education"

Methodology

297 participants were surveyed from different institute types. The method of sampling was "Random sampling" for the collection of data, and the examination was done by "Explanatory Factor Analysis" for the results.

Findings

Table 1 demonstrates demographic details, which show that 53.20% are Male, 46.80% are female. Looking at the age, 36.70% are between 20 and 22 years of age, 30.64% are between 22 and 25 years of age, and 32.66% are above 25 years of age. With regards to Institute type, 34.68% are Government institutes, 29.63% are private institutes, and 35.69% are Professional Institutes.

Table 1 Respondents' Details

Variables	Participants	Percentage
Gender		
Male	158	53.20%
Female	139	46.80%
Total	**297**	**100**
Ages in years		
20 to 22	109	36.70%
22 to 25	91	30.64%
Above 25	97	32.66%
Total	**297**	**100**
Institute type		
Government institutes	103	34.68%
Private institutes	88	29.63%
Professional Institutes	106	35.69%
Total	**297**	**100**

"Factor Analysis"

"KMO and Bartlett's Test"

Table 2: Kaiser-Meyer-Olkin Measure of Sampling Adequacy"

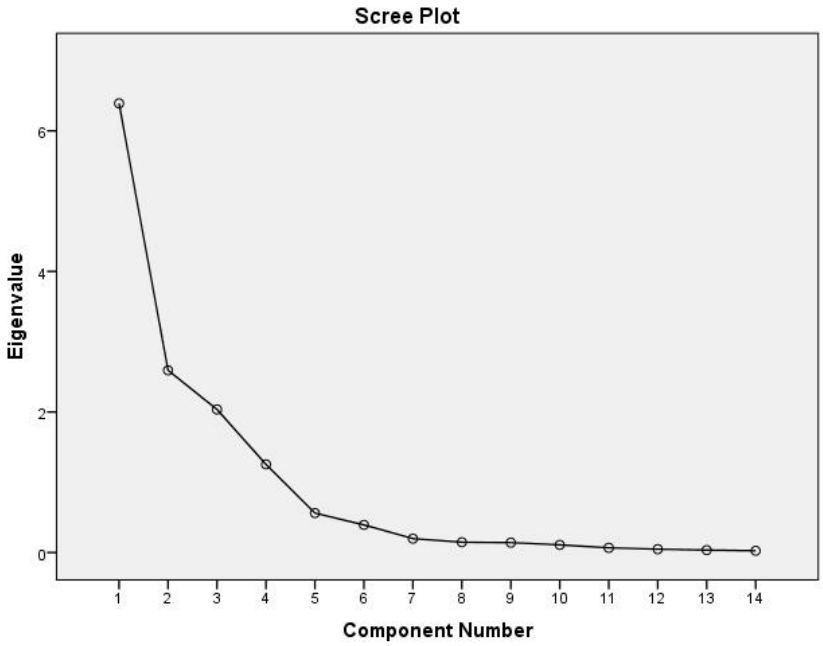
"Kaiser-Meyer-Olkin Measure of Sampling Adequacy"		.763
"Bartlett's Test of Sphericity"	"Approx. Chi-Square"	5311.787
	df	91
	Significance	.000

"KMO and Bartlett's Test", value of KMO is .763 (Table 2).

Table 3: "Total Variance Explained"

"Component"	"Initial Eigenvalues"			"Rotation Sums of Squared Loadings"		
	"Total"	"% Of Variance"	"Cumulative %"	"Total"	"% Of Variance"	"Cumulative %"
1.	6.391	45.650	45.650	**3.919**	27.992	27.992
2.	2.593	18.522	64.172	**3.604**	25.742	53.734
3.	2.036	14.544	78.717	**2.400**	17.140	70.875
4.	1.255	8.964	87.680	**2.353**	16.805	**87.680**
5.	.562	4.011	91.692			
6.	.394	2.814	94.505			
7.	.198	1.414	95.919			
8.	.146	1.046	96.965			
9.	.141	1.009	97.974			
10.	.109	.781	98.755			
11.	.067	.480	99.235			
12.	.048	.343	99.578			
13.	.035	.248	99.826			
14.	.024	.174	100.000			

The four factors contribute towards explaining a total of 87.680% of the variance. Variance explained by Digital Literacy and technical competence is 27.992%, Personalised and adaptive learning is 25.742%, Immediate feedback and support is 17.140%, and Academic assistance and accessibility is 16.805%. (Table 3).



"Scree Plot"

Table 4 "Rotated Component Matrix"

S. No.	Statements	Factor Loading	Factor Reliability
	Digital Literacy and technical competence		**.950**
1.	Ability of students to use the AI system effectively	.954	
2.	Higher literacy, better engagement and less frustration	.911	
3.	Enhances academic performance	.846	
4.	Reduces technology-induced anxiety	.839	
	Personalised and adaptive learning		
1.	Increased understanding and retention improve grades	.962	
2.	Reduced frustration, promotes confidence and satisfaction	.899	
3.	AI-powered learning platform adjusts learning pace and preferences	.891	

4.	Intelligent tutoring system adjusts to student progress	.867	
	Immediate feedback and support		**.864**
1.	Enhances motivation and engagement through timely response	.911	
2.	Reduces anxiety associated with waiting for evaluation	.856	
3.	Encourage self-reflection and continuous improvement	.729	
	Academic assistance and accessibility		**.843**
1.	AI tools like language translators assist diverse learners	.934	
2.	Promote inclusion and reduce stress caused by learning difficulties	.933	
3.	Support students with disabilities or language barriers	.655	

Factors of the study and its related variables

The first statement of the study is Digital Literacy and technical competence. The variables it includes are the ability of students to use AI systems effectively, Higher literacy, better engagement and less frustration, which enhances academic performance and reduces technology-induced anxiety. Personalised and adaptive learning is the second factor, which includes variables like Increased understanding and retention improve grades, reduced frustration, promotes confidence and satisfaction, an AI-powered learning platform adjusts learning pace and preferences, and an Intelligent tutoring system adjusts to student progress. Immediate feedback and support are the third factor; its variables are enhancing motivation and engagement through timely response, reducing anxiety associated with waiting for evaluation, and encouraging self-reflection and continuous improvement. Fourth and last factor is Academic assistance and accessibility, its variables are AI tools like language translators that assist diverse learners, promote inclusion and reduce stress caused by learning difficulties, and support students with disabilities or language barriers.

Table 5 "Reliability Statistics"

"Cronbach's Alpha"	"Number of Items"
.897	14

Total reliability of 14 items that include variables for Factors exploring the "Impact of Artificial Intelligence on Psychological Well-Being and Academic Performance of Students in Higher Education" is 0.897 (Table 5).

Conclusion

From the above review, the impact of AI has the ability to enhance students' overall well-being in a modern, technology-based university learning environment. The future of artificial intelligence in education looks promising, with the power to change how higher educational institutions teach and learn. These tools and technologies have the ability to reshape education, psychological well-being and many other fields, transforming how people use technology. The present study concludes that AI makes tasks faster and more accurate, lowering the chances of human error. Artificial Intelligence also uses data analysis to find areas where students can improve and create personalised learning paths for each one. However, using AI in higher education also comes with challenges and possible risks, such as issues like fairness, academic honesty, and ethical concerns, that need to be handled carefully. By recognising these challenges and risks, it is thereby concluded to encourage informed discussions and the careful use of AI within the sensitive environment of higher education. Chatbots can also offer helpful information and resources about mental and psychological well-being, thereby acting as virtual counsellors that can always be available to provide emotional support to students. The factors exploring the Impact of Artificial Intelligence on Psychological Well-Being and Academic Performance of Students in Higher Education are Digital Literacy and technical competence, Personalised and adaptive learning, Immediate feedback and support and Academic assistance and accessibility.

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