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AI OVERDEPENDENCE IN EDUCATION: EXAMINING ITS HARMFUL EFFECTS ON STUDENT LEARNING AND CRITICAL THINKING

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Keywords	***Abstract***
AI over-dependency, Critical thinking, Cognitive engagement, Problem-solving ability, AI-generated content, Verification of information.	The research explores AI over-dependency in education while examining its helpful effects on critical thinking. It aims to measure how often students rely on AI tools, for what purposes they use AI, and to what extent they rely on AI-generated content without verifying it. This study also analyzes the impact of AI over-dependency on students' ability to evaluate, analyze, and interpret information for decision-making. It further assesses cognitive engagement using critical thinking assessment skills across four key dimensions: interpretation, analysis, evaluation, and inference. The study examines whether students promote passive information consumption of AI- generated content or actively engage intellectually. It also aims to identify strategies for balancing AI assistance with traditional problem-solving methods to enhance critical thinking skills. The research is descriptive and exploratory in nature. The primary data collection method used, while the analysis relies on critical thinking assessment skills to measure students' cognitive engagement. Secondary data is collected from news articles, research papers, and journal publications. This study also seeks to determine how frequently students use AI for completing academic tasks, whether they directly accept AI-generated content or verify it with other sources. Additionally, it aims to understand whether AI

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	negatively impacts students' problem-solving abilities. The study evaluates whether students accept AI-generated biased information or think critically rather than just accepting direct answers. It also examines whether students excessively rely on AI tools. Finally, this research provides strategies for balancing AI assistance with traditional problem- solving methods to ensure the development of critical thinking skills.

1. INTRODUCTION

The scientific field of artificial intelligence focuses on creating computers and machines that are capable of thinking, learning, and acting in ways that would normally require human intelligence or that involve data whose size surpasses what humans can analyze. The broad field of artificial intelligence (AI) encompasses a wide range of disciplines, including computer science, data analytics and statistics, hardware and software engineering, linguistics, neurology, and even philosophy and psychology. Data analytics, forecasting and prediction, object classification, natural language processing, recommendations, intelligent data retrieval, and more are examples of business applications that make use of artificial intelligence (AI), a group of technologies primarily based on machine learning and deep learning.

2. AI'S EXPANDING USE IN EDUCATION

The application of AI in education is extensive and profound. Traditional teaching approaches could be completely transformed by artificial intelligence (AI), which would also give students access to more individualized, flexible, and inclusive learning opportunities. The ability of AI to offer students individualized learning paths based on their particular needs, learning preferences, and skill levels is among its most important educational effects. Regardless of their background or ability level, this helps guarantee that students have the resources and support they require to succeed.

In order to enhance learning outcomes, AI in education assists teachers in determining students' knowledge gaps and offering tailored feedback. Chatbots and virtual assistants driven by artificial intelligence (AI) enable teachers to give students prompt advice and support outside of the classroom, keeping them motivated and involved. Thanks to AI, educators can spot troublesome pupils early on and give them the specialized help they need to thrive.

The potential of AI to transform education by shifting away from conventional classroom models and toward more dynamic and interactive approaches is among its most exciting implications. For instance, by allowing students to investigate difficult ideas in novel and immersive ways, AI-powered virtual and augmented reality tools have increased the dynamic and engaging nature of learning.

3. DISADVANTAGES OF ARTIFICIAL INTELLIGENCE

- Lack of Creativity – AI lacks human originality, relying on existing data to generate content without true innovation.
- Emotional Intelligence – AI cannot genuinely understand or empathize with human emotions,

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limiting its effectiveness in interpersonal roles.

- Human Laziness – Over-reliance on AI may reduce critical thinking and problem-solving skills, leading to a less capable workforce.
- Privacy Concerns – AI-driven data collection risks privacy breaches, identity theft, and misuse by corporations or cybercriminals.
- Job Displacement – Automation replaces jobs in various industries, increasing unemployment and requiring extensive workforce retraining.
- Over-dependence on Technology – Excessive reliance on AI can weaken human decision-making skills and cause problems if AI systems fail.
- Algorithm Concerns – AI advancements often outpace ethical guidelines, leading to risks like biased decisions and lack of accountability.
- Environmental Impact – AI requires vast computational power, increasing energy consumption and contributing to carbon emissions.
- Lack of Common Sense – AI struggles with contextual understanding and intuitive judgment, leading to errors in unpredictable situations.
- Lack of Transparency – Many AI models function as "black boxes," making it hard to interpret or trust their decision-making processes.
- Limited Adaptability – AI follows pre-programmed instructions and cannot handle tasks beyond its training, restricting flexibility and innovation.

According to a recent study, students' critical thinking skills are declining as a result of their increased use of artificial intelligence (AI) tools. An analysis of over 650 individuals in the UK who were 17 years of age or older revealed that those who heavily outsourced their memory and problem-solving responsibilities to AI had worse critical thinking abilities. This phenomenon is called cognitive offloading..

Lead author Michael Gerlich of SBS Swiss Business School discovered that cognitive offloading was negatively connected with critical thinking and highly connected with the use of AI tools in the study "AI Tools in Society: Impacts on Cognitive Offloading and the Future of Critical Thinking," which was published in Societies.

"Younger participants who exhibited higher dependence on AI tools scored lower in critical thinking compared to their older counterparts," wrote Mr Gerlich.

"This trend underscores the need for educational interventions that promote critical engagement with AI technologies, ensuring that the convenience offered by these tools does not come at the cost of essential cognitive skills."

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This study uses the Critical Thinking Assessment Scale (CTAS) to measures students' cognitive engagement in key dimensions such as interpretation, analysis, evaluation, inference.

A "critical thinking assessment scale" is a tool used to measure an individual's ability to analyze, interpret, and evaluate information objectively, assessing their critical thinking skills through a set of questions or tasks that require logical reasoning, problem-solving, and the ability to identify assumptions and draw well-supported conclusions; it's often used in education and employment settings to evaluate potential or current employees or students on their critical thinking capabilities.

This study explores how AI overdependence affects students' ability to evaluate, analyze, and interpreting information to form a judgment or decision, ultimately weakening their critical thinking skills. Using the Critical Thinking Assessment Scale (CTAS), this research measures students' cognitive engagement in key dimensions such as interpretation, analysis, evaluation, inference. The study examines whether frequent AI-assisted learning leads to passive information consumption rather than active intellectual engagement. By assessing the correlation between AI use and critical thinking, this research emphasizes the importance of balancing AI assistance with traditional problem-solving methods.

4. OBJECTIVES

1. To analyze the impact of AI overdependence on students' ability to evaluate, analyze, and interpret information for decision-making.
2. To measure students' cognitive engagement using the Critical Thinking Assessment Scale (CTAS) across key dimensions such as interpretation, analysis, evaluation, and inference.
3. To examine whether frequent AI-assisted learning promotes passive information consumption rather than active intellectual engagement.
4. To identify strategies for balancing AI assistance with traditional problem-solving methods to enhance critical thinking skills.

5. LITERATURE REVIEW

Zhai, C., Wibowo, S. & Li, L.D. The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. Smart Learn. Environ. 11, 28 (2024). https://doi.org/10.1186/s40561-024-00316-7

This research examines how students' over-reliance on AI dialogue systems affects their critical thinking, decision-making, and analytical reasoning. While AI enhances academic efficiency, excessive dependence leads to passive learning and weakens cognitive abilities. Ethical concerns such as misinformation, algorithmic bias, plagiarism, and privacy breaches contribute to this issue. Students often favor AI-generated shortcuts over independent problem-solving, reducing intellectual engagement. The study, based on 14 scholarly articles using PRISMA guidelines, emphasizes the need for a balanced approach to AI use in education to prevent cognitive decline and maintain critical thinking skills.

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Katarzyna Szmyd1, Ewelina Mitera2. The Impact of Artificial Intelligence on the Development of Critical Thinking Skills in Students. European Research Studies Journal, Volume XXVII, Issue 2, 2024, pp. 1022-1039

The aim of this study is to examine the impact of artificial intelligence (AI) on students' critical thinking and problem-solving skills. It seeks to understand both the benefits and risks associated with AI-based tools in education. The research explores how AI influences students' ability to think independently, analyze information, and solve complex problems while also assessing potential concerns about over-reliance on AI. Ultimately, the study aims to provide practical recommendations on how AI can be effectively integrated into education to enhance, rather than replace, traditional learning methods.

STUDENT'S ARTIFICIAL INTELLIGENCE (AI) DEPENDENCY: THE LIVED EXPERIENCE OF STEM STUDENTS AT TONGANTONGAN NATIONAL HIGHSCHOOL Paraso, Ysa Marielle 1 , Sedon, Sammer Blaze 2 , Mahilum, Dan Zohar E 3 © IJARW | ISSN (O) - 2582-1008 October 2024 | Vol. 6 Issue. 4 www.ijarw.com IJARW2172 International Journal of All Research Writings 34 1,2 Tongantongan National Highschool 3 Graduate Student, Central Mindanao University

The aim of this study is to explore the role of AI in STEM education by examining the lived experiences of STEM students at Tongantongan National High School. It seeks to understand how AI tools, particularly ChatGPT, assist students in academic tasks while also identifying challenges such as time management and AI dependence. The study aims to highlight the benefits of AI in education while emphasizing the importance of balancing AI use with independent learning. Additionally, it provides insights and recommendations on fostering self-reliance among students to enhance their critical thinking and problem-solving skills.

Darwin, Rusdin, D., Mukminatien, N., Suryati, N., Laksmi, E. D., & Marzuki. (2023). Critical thinking in the AI era: An exploration of EFL students' perceptions, benefits, and limitations. Cogent Education, 10(1), 2290342. https://doi.org/10.1080/2331186X.2023.2290342

The aim of this study is to provide an in-depth understanding of English as a Foreign Language (EFL) students' perception of both the benefits and limitations of Artificial Intelligence (AI) in the context of critical thinking. It seeks to explore how AI influences various aspects of critical thinking, such as academic research and theory scrutiny, while also addressing concerns related to personalization, echo chambers, and nuanced understanding. The study ultimately aims to highlight the need for a balanced approach to using AI for developing critical thinking skills among EFL students.

Khan, W. M. (2024). Analyzing the AI tools' impact on critical thinking in BS English students at Pakistani universities. Journal of Applied Linguistics and TESOL (JALT), 7(4).

The aim of this study is to investigate the impact of AI tools on the critical thinking and independent learning processes of English language and literature students at Pakistani

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universities. It explores whether excessive reliance on AI hinders students' analytical and interpretative skills and examines how university teachers can balance AI use while promoting independent cognitive development. The study also aims to identify educational strategies and policies to regulate AI use, promote intellectual autonomy, and enhance critical thinking skills through curriculum adjustments and teacher training.

Castillo, L. (2024). Examination of AI and conventional teaching approaches in cultivating critical thinking skills in high school students. Escuela de Posgrado, Universidad Nacional de Trujillo, Trujillo, La Libertad, Perú.

The aim of this study is to compare AI-based and traditional learning methods in secondary education, specifically focusing on their impact on the development of critical thinking skills. It seeks to evaluate AI's role in fostering critical thinking while addressing its ethical and practical challenges, particularly within the context of Peru's educational system. The study found that while AI offers personalization and efficiency in education, it presents ethical and practical challenges that may impact the development of high-level cognitive skills, particularly critical thinking. The research suggests that AI cannot fully replace human interactions, which are essential for fostering critical thinking. Therefore, AI should be integrated carefully to complement, rather than replace, traditional teaching methods.

The study also highlights that AI has the potential to transform education in Peru and Latin America positively, but its use must be responsible and aligned with ethical guidelines. Educators, researchers, and policymakers must collaborate to establish regulations, train teachers, and continuously evaluate AI's impact on learning. The research emphasizes the need for a balanced approach where AI enhances education without compromising critical thinking development.

Bacallo, D. L. D. L., Bie, P. E. G., Tulabut, R. Y. C., Pineda, A. J. M., Vicente, A. P., De Vera, A. R., Sawal, E. J. F., Marcaida, J. L. M., & Dizon, R. C. (2024). DIGITAL Learning Revolution:

Identifying The Influence Of Dependency On Artificial Intelligence Tools TOWARDS THE KNOWLEDGE ACQUISITION OF STUDENTS. Ignatian

International Journal for Multidisciplinary Research, 2(8), 1338– 1362.

https://doi.org/10.5281/zenodo.13359360

The study aims to understand how dependency on artificial intelligence tools (AITs) influences students' knowledge acquisition. Specifically, it investigates both the benefits and drawbacks of AITs in education, particularly in relation to scholastic development, academic integrity, and ethical use. Through a semi-structured interview with Grade 11 and 12 STEM students, the study explores their perceptions and experiences with AITs. By analyzing the gathered data using Braun and Clarke's thematic analysis, the study identifies key themes that describe the role of AITs in higher education, ultimately contributing to a deeper understanding of AI's impact on learning and academic integrity.

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Parsakia, K. (2023). The Effect of Chatbots and AI on The Self-Efficacy, Self-Esteem, Problem-Solving and Critical Thinking of Students. Health Nexus, 1(1), 71-76.

The study aims to explore the multifaceted impacts of AI chatbots in educational settings, particularly their influence on psychological aspects and cognitive skills among students. It investigates how chatbots enhance academic processes, personalized learning, and access to educational resources while also addressing ethical concerns. The study specifically examines the effects of chatbots on self-efficacy, self-esteem, self-confidence, problem-solving skills, and critical thinking, highlighting both positive outcomes and potential risks such as over- reliance and limitations in independent thinking. Ultimately, the study seeks to provide insights into the complex role of chatbots in education and emphasize the need for advancements that balance cognitive development, adaptability, and psychological well-being.

R. Khalkho, S. Singh, N. Gupta and P. Srivastava, "Impact of Educational AI on Students' Studying Habits and Academic Performance," 2024 International Conference on Artificial Intelligence and Quantum Computation-Based Sensor Application (ICAIQSA), Nagpur, India, 2024, pp. 1-6, doi: 10.1109/ICAIQSA64000.2024.10882178.

The purpose of this research is to investigate how artificial intelligence (AI) affects students' academic experiences in terms of their study habits, academic achievement, social interactions, and emotional growth. While AI offers advantages such as increased accessibility to learning resources and personalized experiences, it also presents challenges. Through a questionnaire-based survey targeting teachers/Faculty members, this research aims to explore how AI influences learning behaviors and outcomes. This research will advance knowledge about artificial intelligence in education. This study explores the impact of artificial intelligence (AI), particularly learning platforms like ChatGPT, on students' academic experiences, focusing on study habits, academic achievement, social interactions, and emotional growth. By surveying 54 faculty members through a combination of multiple-choice and open-ended questions, the research employs both qualitative and quantitative methods to analyze the influence of AI in education. The findings reveal a dual-sided impact. While AI enhances academic performance through personalized learning and improved accessibility, it poses significant challenges. Overreliance on AI tools appears to hinder critical facets of student development, including study habits, emotional well-being, social interactions, and critical thinking. The convenience of AI risks fostering passive learning behaviors, reducing interpersonal communication, and promoting emotional and social detachment. This research underscores the need for a balanced approach to AI integration in education. To maximize benefits and mitigate drawbacks, educators and institutions must combine AI's potential with active teacher involvement, emphasizing critical thinking and social engagement. By treating AI as a supportive tool rather than a substitute for human educators, the long-term development of students can remain both positive and holistic.

Pooja, K. M. (2025). Cognitive impact of using AI among students—A narrative review. In Case studies on holistic medical interventions (1st ed.).

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Suresh, Ishika & Parikh, Vrittee (2025). AI Overdependence in Education: Examining Its Harmful Effects on Student Learning and Critical Thinking. International Journal of Multidisciplinary Research & Reviews, 4(2), 63-78.

The study aims to explore the cognitive impact of artificial intelligence (AI) on students, focusing on both positive and negative effects. It seeks to examine how AI influences students' thinking, decision-making, problem-solving, creativity, and learning. Additionally, the study addresses ethical considerations related to AI usage, emphasizing the need for responsible use to prevent negative cognitive consequences. By synthesizing existing research, this review aims to identify potential benefits, challenges, and research gaps, ultimately providing insights for future investigations into AI's role in shaping students' cognitive abilities.

Devaki, V. (n.d.). Academic integrity and human cognitive development of learners: Is artificial intelligence replacing the human brain? In AI applications and strategies in teacher education. Vignan University.

The study aims to examine the impact of artificial intelligence (AI) on academic integrity and human cognitive development. It explores both the challenges and benefits of AI in education, particularly its potential to reduce critical thinking and creativity. Additionally, the study emphasizes the importance of maintaining academic integrity in AI-driven learning environments and balancing AI with human involvement to maximize educational benefits while minimizing drawbacks. Ultimately, the study seeks to provide insights for educators, policymakers, and researchers to make informed decisions and promote ethical and effective AI integration in education.

Sardi, J., Darmansyah, C., Oriza, Y., Faizah, D. Y., Habibullah, Y., Putra, D. T., & Eliza, F. (2025). How generative AI influences students' self-regulated learning and critical thinking skills? A systematic review. International Journal of Engineering Pedagogy, 15(1), 94. https://doi.org/10.3991/ijep.v15i1.53379

The aim of this study is to systematically analyze the impact of generative artificial intelligence (AI), particularly tools like ChatGPT, on students' self-regulated learning (SRL) and critical thinking skills. Using the PRISMA framework, the study evaluates existing research to determine how AI enhances personalized learning, metacognitive support, and adaptive feedback while also influencing students' analytical and reflective abilities. Additionally, the study seeks to highlight both the benefits and potential drawbacks of AI integration in education, emphasizing the need for a balanced approach that fosters learner independence and critical thinking.

Abubakar, U., Falade, A. A., & Ibrahim, H. A. (2024). Redefining student assessment in Nigerian tertiary institutions: The impact of AI technologies on academic performance and developing countermeasures. Advances in Mobile Learning Educational Research, 4(2), 1149-1159. https://doi.org/10.25082/AMLER.2024.02.009

The aim of this study is to examine the impact of AI technologies on academic performance and assessment methods in Nigerian tertiary institutions. It seeks to identify the challenges AI poses to traditional evaluation systems, particularly concerning academic integrity, critical thinking, and student skill development. Additionally, the study aims to propose countermeasures and policy recommendations, such as AI usage guidelines and equitable access to technology, to

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ensure that assessments prioritize critical thinking and problem- solving. Ultimately, the research advocates for redefining assessment strategies to align with the realities of AI-driven education while maintaining academic standards.

Baruwa, I. B. (2025). A dialogue with ChatGPT: Philosophy, critical thinking, and higher education. Queen's University. https://orcid.org/0000-0002-0385-9772

The aim of this study is to explore the impact of generative artificial intelligence (GenAI), particularly ChatGPT, on higher education, with a focus on philosophy, critical thinking, and the role of AI in academic learning. Through a reflective dialogue with ChatGPT, the study examines concerns about AI's influence on human cognition, reasoning, and education. It aims to highlight the distinctions between human critical thinking and AI-generated responses while emphasizing the need for educators to take ownership of their teaching strategies and foster essential cognitive skills in students to navigate the AI-driven academic landscape.

Wang, Y., Long, J., Yunus, M. M., & Rafiq, K. R. M. (2025). Chances and challenges of EFL teaching powered by ChatGPT on developing the students' critical thinking

The aim of the study is to explore the opportunities and challenges of integrating ChatGPT into EFL teaching, with a particular focus on its impact on developing students' critical thinking skills. It seeks to understand how ChatGPT supports teachers in enhancing instructional quality and efficiency while identifying potential risks, such as student overreliance on AI. Additionally, the study provides strategies to promote critical thinking, including fostering independent thought, group discussions, project-based learning, and writing exercises.

Melisa, R., Ashadi, A., Triastuti, A., Hidayati, S., Salido, A., Ero, P. E. L., Marlini, C., Zefrin., & Fuad, Z. A. (2025). Critical Thinking in the Age of AI: A Systematic Review of AI's Effects on Higher Education. Educational Process: International Journal, 14, e2025031. https://doi.org/10.22521/edupij.2025.14.31

The aim of the study is to investigate the impact of ChatGPT on the development of critical thinking, evaluation, and independent judgment skills among higher education students across various academic disciplines. It seeks to analyze how ChatGPT influences students' ability to critically assess information, construct arguments, and engage in independent reasoning while also addressing potential risks such as over-reliance on AI and challenges related to academic integrity.

Kerma, M. (2025). The impact of artificial intelligence on Algerian learners' critical thinking.

The aim of this study is to investigate the perspectives of Algerian university teachers on the challenges posed by learners' use of artificial intelligence tools in academia and their potential impact on educational quality and academic outcomes. It seeks to analyze these challenges through a mixed-methods case study, identifying issues such as overreliance on technology, superficial learning, lack of creativity, academic dishonesty, and reduced collaborative learning. The study aims to highlight the need for further research to enhance cognitive achievement and improve learning quality in Algeria.

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Suresh, Ishika & Parikh, Vrittee (2025). AI Overdependence in Education: Examining Its Harmful Effects on Student Learning and Critical Thinking. International Journal of Multidisciplinary Research & Reviews, 4(2), 63-78.

Mgala, M. (2024). A Critical Analysis of Artificial Intelligence Tools in Education: A Blessing or a Curse?. Multidisciplinary Journal of Technical University of Mombasa, 3(2), 1-18. https://doi.org/10.48039/mjtum.v3i2.78

The aim of this study is to critically examine the implications of integrating AI tools in education by assessing both their transformative potential and the challenges they pose. It seeks to evaluate the benefits of AI in customizing learning, improving administrative efficiency, and enhancing student performance while addressing concerns such as data dependency, over-reliance on AI, and the widening digital divide. The study aims to inform the development of policies and guidelines that maximize AI's benefits while minimizing its risks, fostering collaboration among educators, technologists, and policymakers in the evolving digital era.

6. RESEARCH GAP

As my research focuses on AI Overdependence in Education Examining Its Harmful Effects on Student Learning and Critical Thinking across various academic streams in Mumbai, the above-mentioned literature review primarily addresses global or country specific contexts and specific educational streams. This research uses CTAS to analyse students to understand their views on AI overdependency and to assess their critical thinking ability while using AI, but the other studies focus only on STEM. By using CTAS this study measure students' interpretation, analysis, evaluation, and inference skills—an aspect missing in prior research. This research also examines how AI fosters passive information consumption over active cognitive engagement. This research will also consider strategies for balancing AI assistance with traditional problem-solving methods to enhance critical thinking skills.

This study seeks to bridge these gaps by offering a multidisciplinary perspective on AI's impact on student learning, considering both cognitive development and ethical implications. Unlike previous research, it will not only examine AI’s effects on critical thinking and problem-solving but also explore tailored strategies for mitigating AI dependency while maximizing its benefits in various educational settings. By addressing these overlooked aspects, this study will contribute to a more comprehensive understanding of AI's role in education and provide actionable insights for educators, policymakers, and students.

7. METHODOLOGY

In this Descriptive and Exploratory Research survey method has been used for primary data collection. A well-structured questionnaire has been circulated among students through google form based on “AI Overdependence in Education: Examining Its Harmful Effects on Student Learning and Critical Thinking”. 90 respondents from mumbai have been selected through Random sampling and Judgement sampling technique. As this research uses CTAS to measure students' cognitive engagement, the research questionnaire is framed in a way that covers all CTAS key dimensions, such as interpretation, analysis, evaluation, and inference

Primary Data Collection: Conducted through an online survey via Google Forms using a structured questionnaire. The survey includes Likert scale questions, multiple-choice questions (MCQs).

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Secondary Data Collection: Sourced from news articles, research papers, and journal publications to support the findings and provide contextual background.

8. FINDINGS

60% of students are the age group of 18-22.

Among 90 respondents 58.9% are male and 40% are female and 1.1% are other. 53.3% students are undergraduates and 40% are postgraduate.

44.9% students use AI tools few times a week.

73.3% students use AI mainly for understanding complex topics. 36.7% students often rely on AI generated content.

46.7% students critically analyze AI generated rsponse.

49.4% students compare AI generated answers with other sources.

38.9% students identifiy when AI provides biases or incorrect information. 51.7% students form their own conclusions even after using AI tools.

44.9% students feel that AI tool halp them to think more critically. 34.8% students have positive impact on their ability to think ctitical.

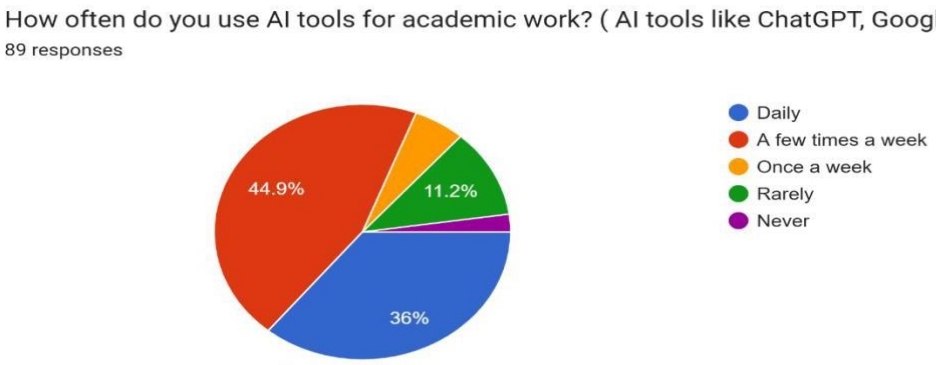
28.4% students use the "fact check AI generated content using reliable sources" strstegies to ensure that they are actively engaging with information rather than passively consuming AI generated content.

37.8% students believe that they can complete their task independently without AI.

42.2% students believe that excessive reliance on AI tools negatively impacts students' problem-solving abilities.

SECTION1: AI Usage in Learning

(Measure how often students rely on AI tools like ChatGPT, Google Bard, etc.)



Analyses:

This chart reveals that most of the students use AI few times a week for academic work, while 36% students use AI on daily bases and only 11.2% students use AI rarely for

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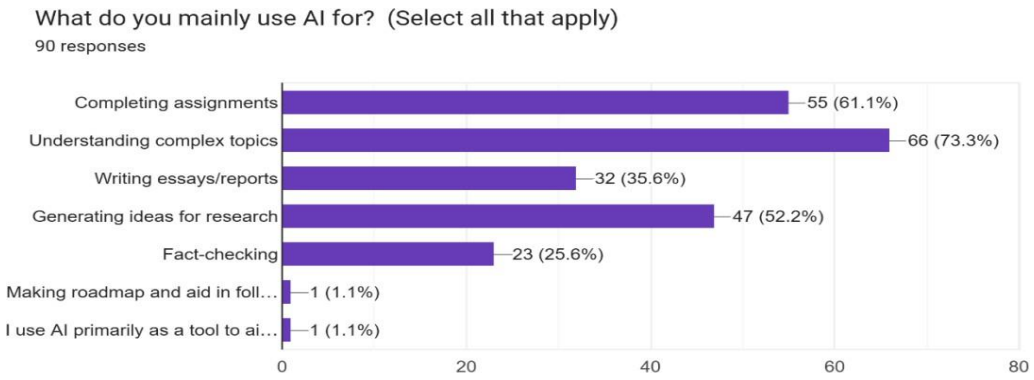
academic work. Through this chat we can easily understand that students are using AI for academic work.



Analyses:

Choices	Percentage	Total Counts
Completing assignments	61.10%	55
Understanding complex topics	73.30%	66
Writing essays/reports	35.60%	32
Generating ideas for research	52.20%	47
Fact-checking	25.60%	23
Other	2.20%	2

According to the graphs and table it was easily find out that most of the students use AI just to understand comlex topics, 61.10% students use AI for comleting assignments which is 2nd highest choice and the 3rd highest choice of students is to use AI for generating ideas for research. As 2.2% students select other option in which they have mention that they use AI for Making roadmap and aid in following a schedule and use AI primarily as a tool to aid their own thoughts, creative and logical aspects while focus on the big picture.

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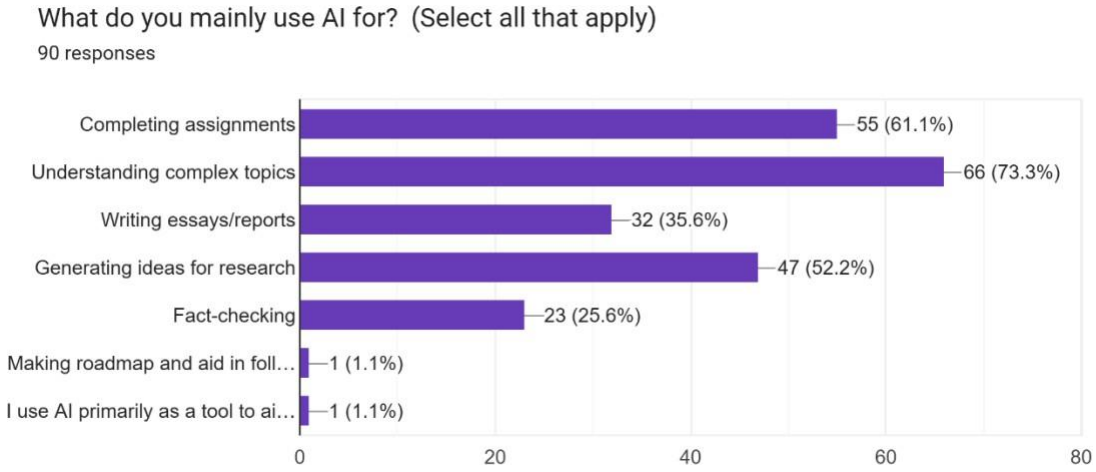

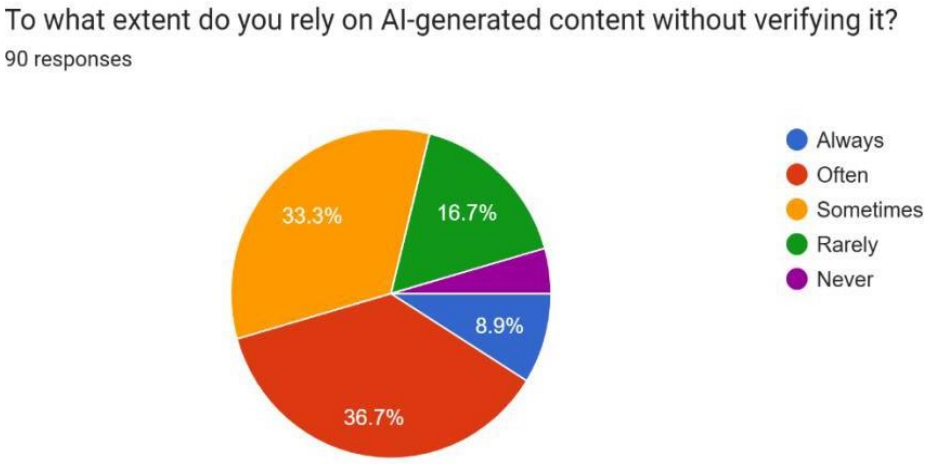

Analyses:

By analysing the chart, we can easily find out that 36.7% often rely on AI generator content without verifying it, 33.3% students sometimes rely on AI generated content without verifying it and 16.7% rally rely on AI generated content and 9% always rely on AI generated content without verifying it. That means that the percentage of students who always rely on AI generated content without verifying it is less then the student who often do that.

SECTION 2: Critical Thinking Skills Assessment (CTAS-Based Questions)

When I read an Al-generated response, I critically analyze whether the informationisrelevant to my

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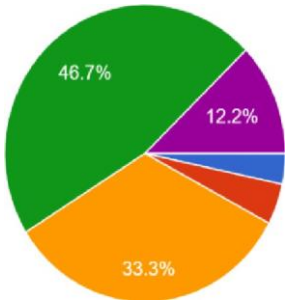

9. SUGGESTIONS

- Integrators must provide a steady and timely supply of healthy chicks to minimise early-cycle losses and avoid delays.
- Frequent inspections and the establishment of feed quality control methods are necessary to guarantee freshness and nutritious content.
- Regular health checks and 24-hour veterinarian support services are essential, especially during disease outbreaks.
- Fair and open income structures that link farmer remuneration to performance and keep a small profit margin must be developed.
- Businesses and the government must work together to provide poultry insurance schemes that protect farmers from losses resulting from disease or natural disasters.
- Small-scale farmers should have simpler access to soft loans and institutional financing, with reduced collateral needs and simplified paperwork.
- Farmers should have the freedom to buy inputs on their own, particularly if the supplies provided by the corporation are of poor quality or too expensive.
- When determining farmer remuneration, businesses should take maintenance expenses like labour, energy, and sanitation into consideration.
- Prioritising investments in cold chain infrastructure is essential, particularly for the storage of processed goods, medications, and vaccines.
- The integrators should set up a separate grievance redressal system with legal backing, clauses to resolve conflicts, and procedures to take farmers input into account.

10. AUTHORS CONTRIBUTION

The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

11. CONFLICTS OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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12. PLAGIARISM POLICY

All authors declare that any kind of violation of plagiarism, copyright and ethical matters will taken care by all authors. Journal and editors are not liable for aforesaid matters.

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