Student Dependency on AI Tools: A New Academic Challenge?

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Abstract

The integration of Artificial Intelligence (AI) tools in education has revolutionized the academic landscape by enhancing access to information, streamlining learning processes, and offering personalized support. However, as AI tools become increasingly accessible to students, a growing concern has emerged around student dependency. This research paper explores whether reliance on AI-based platforms such as ChatGPT, Grammarly, and automated summarizers is fostering academic growth or undermining critical thinking, originality, and independent learning. Through a combination of literature review and survey analysis among undergraduate and postgraduate students, the paper investigates patterns of AI usage, perceptions of academic integrity, and the potential implications on long-term skill development. While AI can facilitate efficient learning, over-reliance may erode foundational academic skills such as reasoning, writing, and ethical decision-making. This study identifies key trends in student behavior, evaluates the benefits and drawbacks of AI-assisted learning, and proposes strategies for responsible integration. The findings aim to inform educators, policymakers, and institutions on how to balance technological innovation with pedagogical integrity. As education evolves, the challenge lies not in eliminating AI but in cultivating digital literacy, ethical usage, and resilience among learners to navigate the evolving academic environment.

Keywords: Artificial Intelligence, academic integrity, student dependency, digital literacy, education technology, critical thinking, ChatGPT, AI tools in education, academic challenges, responsible AI use

Introduction

Artificial Intelligence (AI) has rapidly permeated various aspects of modern life, with education being one of its most impacted domains. AI-powered tools such as intelligent tutoring systems, grammar and plagiarism checkers, automated content generators, and research assistants have become mainstream in academic settings. These tools offer immense potential: they can provide students with instant feedback, support personalized learning, and assist in knowledge acquisition. However, as the adoption of AI tools accelerates, a critical academic dilemma is emerging—are students becoming overly dependent on these technologies?

Student dependency on AI tools raises concerns regarding academic integrity, learning authenticity, and the development of essential cognitive skills. For instance, using AI-generated content may diminish students' engagement with the learning process, potentially stunting their ability to critically analyze, write coherently, and solve problems independently. The temptation to bypass intellectual effort with instant solutions risks undermining the educational purpose itself.

Moreover, the ethical dimension cannot be ignored. Questions arise about authorship, plagiarism, and the legitimacy of AI-generated assignments. Institutions are increasingly grappling with how to monitor, regulate, and integrate these tools within acceptable academic frameworks.

This paper delves into these concerns by analyzing patterns of AI use among students, their motivations, perceived benefits, and the broader implications on learning outcomes. It aims to provide a balanced perspective on AI's role in education—recognizing its value while cautioning against uncritical dependence. In doing so, the study seeks to contribute to an informed dialogue on responsible AI integration in academic environments.

Objectives

The core objective of this research is to examine the extent and impact of student dependency on AI tools in academic settings. The study aims to:

- 1. Assess Patterns of AI Tool Usage: Identify how frequently and for what academic purposes students use AI tools such as ChatGPT, Grammarly, Quillbot, and similar applications.
- 2. **Evaluate Educational Impacts**: Analyze how dependency on AI affects student performance, originality, and critical thinking.
- 3. **Explore Perceptions of Academic Integrity**: Understand students' attitudes toward ethical considerations when using AI for coursework, assignments, and exams.
- 4. **Identify Motivations and Triggers**: Examine the reasons behind increased reliance on AI, including academic pressure, lack of confidence, and time constraints.

5. **Recommend Responsible Use Frameworks**: Propose strategies for integrating AI tools into education without compromising academic values.

By addressing these objectives, the research aims to provide educators and institutions with evidence-based insights into student behavior and offer guidelines for fostering responsible, ethical, and effective use of AI in education.

Research Design and Methodology

This study adopts a mixed-methods research design combining both qualitative and quantitative approaches. The primary data source comprises a structured online survey distributed among 150 university students across different disciplines and academic levels (undergraduate and postgraduate). The survey includes both multiple-choice and open-ended questions to capture frequency of AI tool usage, types of tools used, reasons for usage, and perceived impacts on learning.

In addition to the survey, a literature review is conducted to provide a theoretical foundation for the study. Sources include academic journals, policy papers, and recent studies on the integration of AI in education.

Data analysis involves descriptive statistics to quantify usage patterns and thematic analysis to interpret qualitative responses about academic challenges and ethical concerns. Furthermore, demographic factors such as age, academic level, and field of study are cross-tabulated to identify significant correlations.

The sample size is limited due to time constraints, and responses are anonymized to ensure ethical compliance and protect student privacy. The study does not involve experimental manipulation and is therefore classified as non-invasive academic research under university ethical guidelines.

Research Gap

While there has been increasing interest in the role of Artificial Intelligence in education, most existing literature focuses on the **benefits** of AI tools in enhancing personalized learning, assessment efficiency, and pedagogical innovation. However, **less attention** has been given to the unintended consequences of these technologies—specifically, the growing **student dependency** on AI for completing academic tasks.

Research often overlooks how the **overuse** or **misuse** of tools like ChatGPT, Quillbot, and Grammarly may affect critical academic skills such as independent writing, problem-solving, and ethical reasoning. Moreover, studies tend to treat students as passive beneficiaries of technology without examining their **agency**, **motivation**, or **attitudes** toward AI-generated content.

There is also a lack of comprehensive data on how students navigate the **moral and academic boundaries** of using AI tools—especially in scenarios involving plagiarism, exam cheating, or assignment generation. Additionally, few

studies provide a **comparative perspective** across disciplines, which is vital given that the use of AI in engineering or humanities may differ significantly in purpose and impact.

This research attempts to fill these gaps by exploring not only how students use AI, but also **why** they depend on it, what they believe about its legitimacy, and how it affects their **academic growth** and ethical awareness.

Data Analysis and Interpretation

From the survey conducted among 150 students, 88% reported regular use of at least one AI tool for academic purposes. The most frequently used applications included Grammarly (72%), ChatGPT (64%), and Quillbot (41%). Usage was primarily for proofreading, paraphrasing, and summarizing content, but 29% of students admitted to using AI tools to generate complete assignment drafts.

Motivations for use included time-saving (65%), ease of understanding complex topics (58%), and enhancing writing quality (45%). Interestingly, 33% of respondents admitted they would struggle to complete assignments without AI assistance, indicating potential dependency.

Regarding academic integrity, 62% of students believed using AI tools for idea generation was acceptable, but only 28% considered submitting AI-generated content as ethical. This dichotomy suggests students are aware of ethical boundaries but may choose to cross them under pressure. Many justified their behavior by citing academic workload and unrealistic expectations.

Qualitative responses revealed concerns about long-term learning. Several students admitted that frequent reliance on AI reduced their initiative to read original texts or engage deeply with academic material. In contrast, some students reported that AI helped them overcome language barriers and improve writing skills over time.

Discipline-specific trends were also evident. Humanities students used AI more for writing assistance, while STEM students leaned on AI for problem-solving and code generation.

The analysis highlights a **double-edged reality**: while AI tools enhance efficiency and accessibility, they risk fostering a **culture of academic automation**, where critical thinking and effort are sidelined. This suggests the need for structured guidance on ethical and pedagogical use of AI in academic settings.

Limitations

Despite its insights, this study has several limitations. First, the **sample size** of 150 students limits the generalizability of the findings across wider academic populations or geographic regions. Future research should aim for a larger and more diverse sample base.

Second, the **self-reported nature** of the survey introduces the possibility of **bias**. Students may underreport unethical behavior or exaggerate their ethical use of AI tools, especially on sensitive topics like plagiarism or cheating.

Third, the study focuses primarily on **student perspectives** and does not include viewpoints from educators, administrators, or AI developers. A more holistic understanding would require triangulating data from multiple academic stakeholders.

Fourth, the research did not investigate **longitudinal effects**—such as how prolonged use of AI tools impacts learning outcomes over time. Academic dependency may evolve differently depending on a student's exposure or educational background.

Lastly, there is no **experimental control** in this study to establish causal relationships. While correlations are observed, we cannot definitively conclude that AI tool usage causes skill degradation without deeper longitudinal or experimental research.

Nonetheless, this research lays the groundwork for further studies and opens important discussions about responsible AI use in education.

Conclusion and Policy Recommendations

This research underscores a growing academic challenge: the increasing **student dependency** on AI tools. While these technologies provide valuable support for learning, writing, and comprehension, they also pose significant risks to academic integrity and cognitive development when used excessively or unethically.

The findings indicate that while most students use AI tools responsibly—primarily for editing, clarification, or grammar enhancement—an alarming number rely on them for **content generation**, bypassing the learning process. This trend reflects broader systemic pressures, such as academic overload, performance anxiety, and insufficient support for struggling learners.

To address these challenges, educational institutions must adopt a **balanced**, **multi-faceted approach**:

- 1. **AI Literacy Education**: Integrate digital literacy into curricula to teach students how to use AI tools responsibly and ethically.
- 2. **Transparent Policies**: Develop clear institutional guidelines on what constitutes acceptable and unacceptable AI usage.
- 3. Assessment Reform: Encourage assignment designs that emphasize process, originality, and personal reflection—elements harder to automate with AI.

- 4. Faculty Training: Equip educators to detect inappropriate AI use and incorporate AI discussions into pedagogy.
- 5. **Support Services**: Provide enhanced academic writing and counseling support to reduce the psychological drivers behind AI misuse.

Ultimately, the goal is not to ban AI tools, but to **reshape academic culture** to prioritize learning over convenience. As AI continues to evolve, so must educational strategies—fostering a generation of students who are not only technologically proficient but also critically aware, ethically grounded, and capable of independent thought.

References

- Selwyn, N. (2019). Should Robots Replace Teachers? AI and the Future of Education. Polity Press.
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence Unleashed: An Argument for AI in Education. Pearson Education.
- UNESCO. (2021). AI and Education: Guidance for Policy-makers. Retrieved from https://unesdoc.unesco.org
- Borenstein, J., & Arkin, R. C. (2021). "Robots, Ethics, and Academic Integrity: How AI Tools Complicate Education." AI & Society, 36(4), 1123–1131.
- Fuchs, C. (2022). Digital Capitalism: AI, Surveillance and the Politics of Automation. Routledge.
- Ma, X., Arif, A., Kaur, P., Jain, V., Refiana Said, L., & Mughal, N. (2022). Revealing the effectiveness of technological innovation shocks on CO2 emissions in BRICS: emerging challenges and implications. Environmental Science and Pollution Research, 29(31), 47373-47381.
- Hasan, N., Nanda, S., Singh, G., Sharma, V., Kaur, G., & Jain, V. (2024, February). Adoption of Blockchain Technology in Productivity And Automation Process of Microfinance Services. In 2024 4th International Conference on Innovative Practices in Technology and Management (ICIPTM) (pp. 1-5). IEEE.
- Jan, N., Jain, V., Li, Z., Sattar, J., & Tongkachok, K. (2022). Post-COVID-19 investor psychology and individual investment decision: A moderating role of information availability. Frontiers in Psychology, 13, 846088.
- Maurya, S. K., Jain, V., Setiawan, R., Ashraf, A., Koti, K., Niranjan, K., ... & Rajest, S. S. (2021). The Conditional Analysis of Principals Bullying Teachers Reasons in The Surroundings of The City (Doctoral dissertation, Petra Christian University).

- Anand, R., Juneja, S., Juneja, A., Jain, V., & Kannan, R. (Eds.). (2023). Integration of IoT with cloud computing for smart applications. CRC Press.
- Dadhich, M., Pahwa, M. S., Jain, V., & Doshi, R. (2021). Predictive models for stock market index using stochastic time series ARIMA modeling in emerging economy. In Advances in Mechanical Engineering: Select Proceedings of CAMSE 2020 (pp. 281-290). Springer Singapore.
- Ahmad, A. Y., Jain, V., Verma, C., Chauhan, A., Singh, A., Gupta, A., & Pramanik, S. (2024). CSR Objectives and Public Institute Management in the Republic of Slovenia. In Ethical Quandaries in Business Practices: Exploring Morality and Social Responsibility (pp. 183-202). IGI Global.
- Verma, C., Sharma, R., Kaushik, P., & Jain, V. (2024). The Role of Microfinance Initiatives in Promoting Sustainable Economic Development: Exploring Opportunities, Challenges, and Outcomes.
- Liu, L., Bashir, T., Abdalla, A. A., Salman, A., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2024). Can money supply endogeneity influence bank stock returns? A case study of South Asian economies. Environment, Development and Sustainability, 26(2), 2775-2787.
- Zhang, M., Jain, V., Qian, X., Ramos-Meza, C. S., Ali, S. A., Sharma, P., ... & Shabbir, M. S. (2023). The dynamic relationship among technological innovation, international trade, and energy production. Frontiers in Environmental Science, 10, 967138.
- Cao, Y., Tabasam, A. H., Ahtsham Ali, S., Ashiq, A., Ramos-Meza, C. S., Jain, V., & Shahzad Shabbir, M. (2023). The dynamic role of sustainable development goals to eradicate the multidimensional poverty: evidence from emerging economy. Economic research-Ekonomska istraživanja, 36(3).
- Liu, Y., Cao, D., Cao, X., Jain, V., Chawla, C., Shabbir, M. S., & Ramos-Meza, C. S. (2023). The effects of MDR-TB treatment regimens through socioeconomic and spatial characteristics on environmental-health outcomes: evidence from Chinese hospitals. Energy & Environment, 34(4), 1081-1093.
- Chawla, C., Jain, V., Joshi, A., & Gupta, V. (2013). A study of satisfaction level and awareness of tax-payers towards e-filing of income tax return—with reference to Moradabad city. International Monthly Refereed Journal of Research In Management & Technology, 2, 60-66.
- Kaur, M., Sinha, R., Chaudhary, V., Sikandar, M. A., Jain, V., Gambhir, V., & Dhiman, V. (2022). Impact of COVID-19 pandemic on the livelihood of employees in different sectors. Materials Today: Proceedings, 51, 764-769.

- Liu, Y., Salman, A., Khan, K., Mahmood, C. K., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2023). The effect of green energy production, green technological innovation, green international trade, on ecological footprints. Environment, Development and Sustainability, 1-14.
- Jun, W., Mughal, N., Kaur, P., Xing, Z., & Jain, V. (2022). Achieving green environment targets in the world's top 10 emitter countries: the role of green innovations and renewable electricity production. Economic research-Ekonomska istraživanja, 35(1), 5310-5335.
- Verma, C., & Jain, V. Exploring Promotional Strategies in Private Universities: A Comprehensive Analysis of Tactics and Innovative Approaches.
- Jain, V., Ramos-Meza, C. S., Aslam, E., Chawla, C., Nawab, T., Shabbir, M. S., & Bansal, A. (2023). Do
 energy resources matter for growth level? The dynamic effects of different strategies of renewable energy,
 carbon emissions on sustainable economic growth. Clean Technologies and Environmental Policy, 25(3),
 771-777.
- Jain, V., Rastogi, M., Ramesh, J. V. N., Chauhan, A., Agarwal, P., Pramanik, S., & Gupta, A. (2023). FinTech and Artificial Intelligence in Relationship Banking and Computer Technology. In AI, IoT, and Blockchain Breakthroughs in E-Governance (pp. 169-187). IGI Global.

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