International Journal of Scientific Research and Engineering Development-– Volume 9 Issue 1, Jan-Feb 2026
Available at www.ijsred.com

RESEARCH ARTICLE OPEN ACCESS

# The Silicon Crutch or the Digital Ladder? Intelligence Profiles in Traditional vs. AI-Integrated Education

Muskan Gupta[1], Ayush Gautam[2], Minakshi Sharma[3], Dr. SK Sharma[4]
1. CS-Data Science, ITM GOI, Gwalior, India
Email: muskanguptagupta81@gmail.com,
2.CS-Data Science, ITM GOI, Gwalior, India
Email: ayushgautam1234567890@gmail.com,
3. CS-Data Science, ITM GOI, Gwalior, India
Email: minish1408@gmail.com@gmail.com.
4. HOD Department of Mechanical Engineering, ITM GOI, Gwalior, India
Email: sksme835@gmail.com

## Abstract:
In recent years, the rapid growth of technology and the increasing dependency on Artificial Intelligence have led to significant global changes in education and the way students learn. It is now important to understand which mode of learning (traditional or AI-integrated) has a greater impact on student's intelligence and in what ways. The human mind is also like a machine; it gets trained every day through the new and existing inputs it receives from its surroundings. To further explore this impact, a survey was conducted among students, teachers and working professionals to analyze their dependency on AI-based learning and its influence on creativity, cognitive development, and learning behaviour.104 participants had participated and given their reviews on how the Artificial Intelligence is influencing their minds and habits. A few constructive suggestions were also collected to address and minimize this emerging issue of technological dependence.

*Keywords* — Human Intelligence, Artificial Intelligence, Traditional Methods

## I. INTRODUCTION
In recent times, the dependency on machines and artificial intelligence has increased so much that many students often forget to use their own creativity and intelligence to complete tasks, school work, college assignments, and more. Instead of utilizing technology as a supportive tool, a considerable number of students tend to misuse it for short-term benefits, resulting in increasing technological dependence.
However, technology can be one of the best tools to enhance thinking ability, deep knowledge, and creativity if it is used efficiently. Therefore, it becomes essential to question whether we are truly utilizing technology in a productive and meaningful manner.

## II. TRADITIONAL VS AI-BASE LEARNING
Traditional learning is primarily dependent on classroom activities, lectures, textbooks, and direct human-to-human interaction. This approach helps in enhancing student's ability to think critically, be creative, and develop effective problem-solving skills. Direct interaction with teachers and peers improves communication abilities, builds confidence, and encourages a disciplined and patient learning attitude. It also promotes a more analytical and problem-solving mindset through continuous engagement and guidance. However, traditional learning may sometimes fail to provide personalized attention to every student, as it is largely teacher-centered and classroom-oriented. This limitation can affect students with diverse learning needs and different learning speeds.

On the other hand, AI-based learning provides personalized attention to students and allows them to learn at their own pace and time through predictive algorithms and adaptive systems. However, this increasing reliance on AI and technology may also lead to dependency if not used responsibly. AI remains beneficial only as long as it is used efficiently and remains a supportive tool rather than replacing the human mind. Excessive dependency can negatively affect originality, encourage dishonesty, and raise serious concerns related to academic integrity, data privacy, and long-term technological dependence.

## III. IMPACT ON INTELLIGENCE AND CREATIVITY

Although AI has both positive and negative aspects, its overall impact largely depends on how individuals use it. AI can be highly beneficial for personalized learning, immediate feedback, and transforming creative ideas into reality. However, constant reliance on technology for every task and decision may gradually reduce independent thinking. When students depend heavily on automated solutions, they may avoid critical reasoning, decrease their mental effort, and lose opportunities to develop original ideas. Therefore, while AI has the potential to significantly enhance intelligence and creativity, its effectiveness ultimately depends on how responsibly and purposefully it is utilized in the learning environment

## IV. DEPENDENCY AND MISUSE ISSUES

To understand the extent of technological dependency, an informal observation-based study was conducted in which routine decision-making and communication tasks were intentionally performed using AI tools for a continuous period of one week. During this period, responses to regular messages and basic interactions were generated using AI assistance rather than personal thought processes. By the end of the week, a noticeable shift towards habitual reliance on AI was observed, where even simple tasks were not attempted without technological assistance. Similar patterns were also evident in the surrounding academic environment, where students increasingly depended on AI-based chatbots for completing assignments and academic tasks. This behaviour reflects a growing tendency to prioritize convenience over intellectual effort, resulting in reduced creativity, diminished problem-solving ability, and a copy-paste learning culture. Such dependency highlights a serious concern regarding the overuse and misuse of AI in education.

## V. METHODOLOGY

To analyze student's and teacher's dependency on AI-based learning, a survey was conducted using Google Forms, and responses were collected from 104 participants. The respondents represented diverse age groups, cities, and professional backgrounds, ensuring a varied and comprehensive dataset for analysis.

Participants included School students, Teachers, Officers and Undergraduate students.

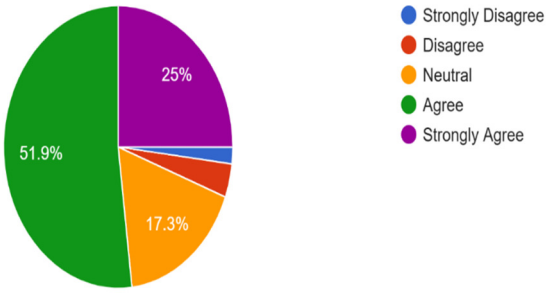
A random sampling technique was used to reach the participants.

The questionnaire consisted of multiple-choice and Descriptive questions focusing on learning habits and AI usage.

## VI. RESULTS AND DISCUSSION

The graphical representation of responses is presented below.

Fig X:

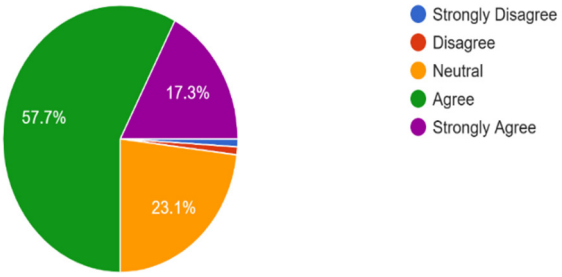



The survey results indicate a strong dependency on AI-based tools for academic and teaching activities. As shown in Fig. X, **51.9% of** respondents **agreed** and **25% strongly agreed** that they rely on AI tools (such as ChatGPT, Google Gemini, and Copilot) to complete tasks that they would otherwise perform manually. Meanwhile, **17.3%** remained **neutral**, suggesting uncertainty or

situational usage. Only a very small proportion **disagreed** or **strongly disagreed**, indicating minimal resistance to AI usage. These findings reveal that a majority of participants have already integrated AI into their routine academic or

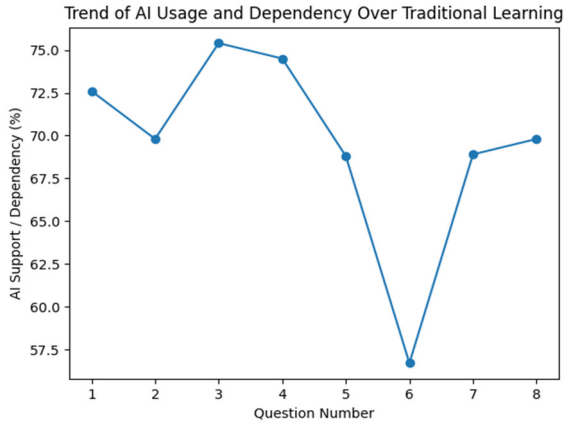
Fig Y:




As shown in Fig. Y, **57.7%** of the respondents **agreed** and **17.3% strongly agreed that** using AI saves their so much effort that they often prefer it over traditional learning/teaching methods. Meanwhile **23.1%** remained **neutral,** suggesting situational usage and less dependence on AI. Only a very small portion **disagreed** or **strongly disagreed,** indicating minimal resistance to AI.

Overall, the results suggest that AI should be used as an assistive tool rather than a replacement for human intelligence. Proper awareness, regulatory guidelines, and responsible usage practices are essential to ensure that AI supports learning without compromising students' creativity, critical thinking, and cognitive independence

Fig Z:




The Fig. Z which shows the scatterplot with the trend line illustrating the progressive pattern of AI usage and dependency across different learning and teaching contexts. The plotted points show consistently high values approximately ranging between 60%-75%, indicating that majority of respondents frequently rely on the AI tools for their academic and instructional purposes. Whereas the downward pattern in between the graph indicates the awareness among the people about the increasing dependency on AI.

The close clustering in the nearby dependency range indicates that now AI has become the integral part of the routine life. Respondents are using it often due to convenience, efficiency and time saving capacity.

## VII. CONCLUSION

Although traditional learning methods are highly effective, their impact can be significantly enhanced when AI is integrated in a controlled and balanced manner. AI should be utilized as a supportive tool alongside traditional education rather than being treated as a substitute for human effort. When used appropriately, AI can assist learning without allowing students to rely on it as a crutch that suppresses their intelligence, creativity, and independent thinking.

## ACKNOWLEDGEMENT

The authors thank ITM GOI for infrastructure support and the anonymous reviewers for their valuable feedback. This research was partially supported by institutional research grants. We also acknowledge the developers of open-source that made this research possible

## REFERENCE

[1] Devasena R, "Artificial Intelligence in Education: An Alternative to Traditional Learning," *Journal of English Language Teaching*, vol. 66, no. 1, pp. 13–21, Jan.–Feb. 2024
[2] Jacob R. Thinking machines: The search for artificial intelligence. Distillations. 2016; 2:14–23.
[3] Rory CJ. Stephen Hawking warns artificial intelligence could end mankind BBC News Wikipedia, the Free Encyclopedia on Artificial Intelligence. 2014.
[4] Jerry K. Artificial Intelligence – what everyone needs to know. New York: Oxford University Press; 2016.

[5] H.A. Dida, D. Chakravarthy, F. Rabbi, "ChatGPT and big data: enhancing text-to-speech conversion", Mesopot J. Big Data, 2023 (2023), pp. 33-37