

REWIRING MINDS; AI IMPACT ON HUMAN COGNITION

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Abstract

Artificial intelligence's (AI) quick development is changing many facets of human existence, including cognition, particularly in the educational setting. Concerns about how AI tools will affect students' cognitive skills—such as problem-solving, memory, attention, and critical thinking—are growing as they are used in more classrooms. With a special focus on college students, this study, *Rewiring Minds: AI Impact on Human Cognition*, attempts to investigate both the advantages and disadvantages of AI's influence on human cognition. The study looks at how artificial intelligence (AI) tools, like adaptive learning systems, affect cognitive functions and whether they improve or worsen learning outcomes. The study also explores ethical issues related to AI, such as privacy, fairness, and the dissemination of false information. It also emphasizes how crucial it is to help students develop their digital literacy and critical thinking abilities so they can responsibly traverse the rapidly changing technological landscape. The study collects both qualitative and quantitative data using a mixed-methods approach to give a thorough understanding of how AI shapes cognitive processes. The goal of this research is to support the responsible development and application of AI technologies in educational settings by offering insightful information to educators, legislators, and AI developers.

Key Words: Artificial Intelligence (AI), Cognitive, Abilities, Education, Digital Literacy, Ethical Considerations

INTRODUCTION

Artificial intelligence (AI) is changing industries and technologies in the quickly changing digital landscape, but it is also significantly affecting human cognition. Artificial Intelligence (AI) systems are changing the way we think, learn, and process information as they become more prevalent in daily life, from virtual assistants to self-governing decision-making tools. The complex relationship between AI technologies and how people see, comprehend, and engage with the world is examined in this project, *Rewiring Minds: AI Impact on Human Cognition*.

The ability of AI to supplement human abilities, providing fresh approaches to improve memory, problem-solving, and decision-making, is at the heart of this change. Concerns regarding the effects on our cognitive development and the long-term effects of depending on machines to perform mental tasks, however, accompany these developments. The widespread impact of AI is radically changing the definition of what it means to be human, from affecting creativity and social behaviour to changing attention spans and memory functions.

In order to comprehend how our mental processes are being "rewired" in this era of intelligent machines, this project explores both the advantages and disadvantages of AI's influence on cognition. We will investigate how these technologies are improving or possibly impairing human mental faculties and what this means for our future by looking at research from disciplines like neuroscience, psychology, and artificial intelligence.

OBJECTIVES

- To Identify The Demographic Characteristics Of Respondents And Encounters Misinformation Through Online

REVIEW OF LITERATURE

Rao, P., & Pandey, P. (2021). The contribution of gamification driven by AI to increasing Indian students' cognitive engagement. *Educational Psychology Journal*. The use of AI-powered gamification to improve Indian students' cognitive engagement is the main topic of this paper. By keeping students actively involved in the learning process, gamification features like points, rewards, and interactive challenges have been demonstrated to improve motivation, focus, and memory retention.

Gupta, M., & Kumar, P. (2021). AI in rural classrooms: What does it mean for Indian students' cognitive development? *Journal of Rural Education & Technology*. This study looks at AI-enhanced learning environments in classrooms in rural India. By enhancing academic performance, attention span, and retention, the study shows that AI interventions have a positive impact on cognitive development, particularly for students with limited educational resources.

Rao, S., & Gaur, S. (2021). The development of critical thinking and AI tools in Indian educational systems. *Journal of Cognitive Science*. This essay assesses how AI can help Indian students improve their critical thinking abilities. According to the study, AI-based tools improve students' capacity for reasoning and decision-making by promoting higher-order thinking and guiding them through challenging situations.

Desai, P., & Verma, S. (2021). This study investigates how AI-driven learning analytics affect Indian students' cognitive abilities. It draws attention to the ways in which these systems monitor and adjust to different learning preferences, allowing for a more customized educational experience. Learning analytics platforms that use AI offer personalized learning paths and instant feedback, improving student performance and engagement. The study highlights the beneficial effect on cognitive outcomes because it allows students to concentrate on areas that require improvement while receiving prompt support and direction. Cognitive function and overall learning outcomes are enhanced by this individualized approach. The study highlights the expanding use of AI in education and presents a viable approach to improving student learning and meeting a range of educational requirements.

Joshi, R., & Mehra, P. (2021). Examines how adding artificial intelligence (AI) to smart classrooms in urban Indian schools can improve students' cognitive abilities. It highlights how AI, especially in fields like science and math, improves students' cognitive development by offering individualized learning experiences. AI encourages greater comprehension and student engagement by customizing instructional materials to each learner's unique learning preferences and speed. According to the research, these individualized learning strategies foster critical thinking and problem-solving abilities in addition to raising academic achievement. The study emphasizes how AI has the potential to revolutionize education and how integrating it into smart classrooms can create more productive and interesting learning environments for Indian students.

DATA ANALYSIS AND INTERPRETATION

TABLE 1

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.687 ^a	9	0.861
Likelihood Ratio	6.046	9	0.735
N of Valid Cases	179		

Cells (50.0%) have expected count less than 5. The minimum expected count is .23.

INTERPRETATION

The above table represents the cross tabulation of the age and consumer satisfaction towards Rewiring Minds; AI Impact On Human Cognition with the respondents of 179. This includes the scale like highly satisfied, satisfied, dissatisfied, and highly satisfied. The scale of age is below 18 (3.4%), 18-25 (73.7%), and 25-35 (13.4%), above 35 (9.5%). Therefore, p value is lesser than significant value ($4.687 < 6.046$), there is no association between age and consumer satisfaction.

TABLE 2

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.428 ^a	3	0.143
Likelihood Ratio	7.658	3	0.054
N of Valid Cases	179		

8 cells (50.0%) have expected count less than 5. The minimum expected count is .23

INTERPRETATION:

The above table represents the cross tabulation of the age and consumer satisfaction towards Rewiring Minds; AI Impact On Human Cognition with the respondents of 179. This includes the scale like highly satisfied, satisfied, dissatisfied, and highly satisfied. The scale of male (65.9%), female (34%). Therefore, p value is less than significant value ($5.428 < 7.658$), there is no association between gender and consumer satisfaction.

TABLE 3

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.814 ^a	9	0.171
Likelihood Ratio	13.665	9	0.135
N of Valid Cases	179		

9 cells (56.3%) have expected count less than 5. The minimum expected count is .43.

INTERPRETATION:

The above table represents the cross tabulation of the gender and interactivity Rewiring Minds; AI Impact On Human Cognition with the respondents of 179. This includes the scale like highly satisfied, satisfied, dissatisfied, and highly satisfied. The scale of occupation is bachelor degree

(75.8%), higher education (1.9%), master degree (9.3%) and others (13%). Therefore, p value is lesser than significant value ($3.811a < 4.140$), there is no association between occupation and interactivity of virtual advertisement.

FINDINGS

- The scale of age is below 18 (3.4%), 18-25 (73.7%), and 25-35 (13.4%), above 35 (9.5%). Therefore, p value is lesser than significant value ($4.687 < 6.046$), there is no association between age and consumer satisfaction.
- The scale of male (65.9%), female (34%). Therefore, p value is less than significant value ($5.428 < 7.658$), there is no association between gender and consumer satisfaction.
- The scale of occupation is bachelor degree (75.8%), higher education (1.9%), master degree (9.3%) and others (13%). Therefore, p value is lesser than significant value ($3.811a < 4.140$), there is no association between occupation and interactivity of virtual advertisement.

SUGGESTIONS

- To spread awareness about AI and its impact on the minds of the current generation, especially students
- To make usage of AI in the most ethical way and utilize it only as much needed
- To understand how AI impacts human cognition and use accordingly.
- To determine the future of AI and impact of it on the minds of students.

CONCLUSION

In conclusion, there are both opportunities and challenges associated with the potential for artificial intelligence (AI) to have a substantial impact on human cognition through its integration into education. Although artificial intelligence (AI) tools, like adaptive learning systems, can improve students' cognitive capacities and academic performance, they also give rise to worries about possible cognitive impairments, moral quandaries, and the dissemination of false information. In order to prepare students for a world that is becoming more and more AI-driven, this study emphasizes the value of encouraging digital literacy, critical thinking, and responsible AI use in the classroom. This research attempts to help educators, legislators, and AI developers create an environment where AI can be used effectively and ethically to support student development by providing a deeper understanding of AI's impact on cognition and addressing its ethical implications.

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