

Artificial Intelligence (AI) in Humanities and Social Sciences: A Hero or a Villain

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Abstract

Human Intelligence has always dominated all the domains in the world. Industrialization is a turning point in the evolution of mankind. Since then there have been significant changes in the sphere of technology with diverse implications. At present, in the fourth Industrial Revolution, the role of Artificial intelligence (AI) is paramount, infiltrating almost any field in the planet. Unlike the traditional AI, which focuses on analysing existing data for the purpose of performing specific tasks, Generative AI creates new content on its own, learning from a large number of data input. While the application of Generative AI tools might be of assistance in certain disciplines, especially natural sciences, they have serious impact, both positive and negative, upon the humanities and social sciences, which heavily rely on creativity, analytical skills and critical-thinking skills. This study aims to explore the impact of Artificial Intelligence(AI) tools on undergraduates pursuing Humanities and Social sciences. The present study employs a mixed-method approach. Questionnaires and focus group discussion with students and systematic observation serve as the primary source of data for the study to understand the behaviour of undergraduates producing AI-generated work, alongside its pros and cons. Academic literature serves as the secondary source of data for the study. Scholarly journals, books, and websites provide this paper with a range of information. The overall findings of the study suggest that although the Generative Artificial Intelligence tools have benefitted natural Science students to a larger extent, due to over-reliance on the AI tools, it has notably affected the Humanities and Social science students who are expected to use their own creativity, analytical skills, critical-thinking skills and research skills, affecting the inherent potential of the students. Furthermore, These disciplines tend to lose their currency owing to the dominating nature of the AI tools. The analysis of the data reveals that despite the overt benefits of the Generative AI tools in the Humanities and social sciences, excessive usage of the tools tend to erode the expected output of the Humanities and Social sciences. The research concludes that the exploitation of the Generative AI tools is inevitable and yet, undergraduates should be prudent enough to use them to an optimal degree in order to supplement their inherent potential.

Keywords: Natural Sciences, Social sciences, Generative AI, Humanities

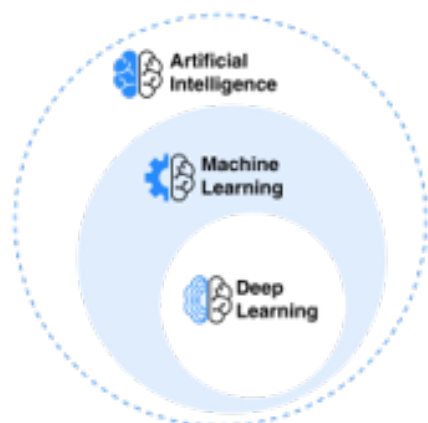
Introduction

Under the sun, human intelligence is a powerful tool which has shaped the trends of the world. Industrial Revolution has been a turning point for humanity and resultantly, they were exposed to diverse innovations in various domains. Before the advent of computers, almost everything used to be done manually, but with the advent of computers, it has become easy for users to work on computers (Chen, Chen, & Lin, 2020). Presently,

in the fourth Industrial Revolution, the Globe has changed to an unprecedented level, resulting in artificial intelligence, automation, robotics, machine learning, Internet of Things(IOT), cloud computing, Biotechnology and genetic engineering. According to Britannica, Artificial Intelligence is the “the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.” According to Nasa, “Artificial intelligence refers to computer systems that can perform complex



tasks normally done by human-reasoning, decision making, creating, etc.” The phrase “Artificial Intelligence” was first coined by John McCarthy in 1956 at a conference called “The Dartmouth Summer Research Project on Artificial Intelligence” (Trappl, 1986). The diagram below indicates how Artificial Intelligence, Machine Learning and Deep Learning fit together to achieve objectives using perception, planning, reasoning, learning, communicating, decision-making, and acting (National Aeronautics and Space Administration, 2024).



Note: Reprinted from What is Artificial Intelligence? by National Aeronautics and Space Administration, May 13, 2024, NASA. <https://www.nasa.gov/what-is-artificial-intelligence/>

Artificial Intelligence tools can be beneficial to the users and Trappl (1986) classifies the benefits of Artificial Intelligence under four groups: Growth and Profits, Performance, Ease, and Convenience, safety and sustainability. AI tools can be used to increase profits and performance in the commerce sector. They also enhance accuracy, speed, efficiency, time and cost savings. Implementation of intelligent surveillance systems, road safety measures, and others can be included under security-related benefits. Sustainability-related benefits pertain to food security, job creation, energy conservation, and the promotion of transparency and equality in society.

Conversely, as indicated by Khanzode and Sarode (2020), the potential disadvantages of AI tools are: misuse of AI tools leading to mass destruction, programme mismatch (technical issues), negative impact on human jobs due to AI taking over their jobs, which results in unemployment and underemployment crisis, impact on our creativity as we solely rely on the programmer,

requiring a lot of time and money and technological dependence.

In the realm of academia, AI tools are used significantly by students across all faculties although there is a debate over to what extent they can be utilized for optimal academic culture. Humanities and social sciences rely on diverse interpretations, critical-thinking and creativity and hence, the use of AI tools in these disciplines, except for a few such as Sociology, Geography and Economics, ought to be limited in scope. However, it is a stark truth that AI tools can be beneficial in terms of preliminary understanding of key concepts.

Therefore it is very important to understand the diverse AI tools and the extent to which they are used by the Humanities and Social Science students. This study seeks to examine the diverse usage patterns of AI tools among second-year students at a state university.

Methodology

The present study employs a mixed-method approach. Questionnaires and focus group discussion with students and systematic observation serve as the primary source of data for the study to understand the behaviour of undergraduates producing AI-generated work, alongside its pros and cons. Academic literature serves as the secondary source of data for the study. Scholarly journals, books, and websites provide this paper with a range of information.

A questionnaire was administered among 23 second-year students from both humanities and social science disciplines. A purposive sampling technique was employed by the researcher. Later a focus group discussion was conducted to gather multiple insights of the participants. Thematic analysis was exploited to arrive at diverse themes emerging from the Excel sheet and the focus group discussion.

Findings and Discussion

Almost all students use AI tools for a wide range of purposes, primarily academic and entertainment-related. When considering the awareness-level of students about AI, some students are aware of AI tools but still, there is a lack

of lucid explanation, whereas others only mention the advantages of AI tools. The following are some of the examples: “All world peoples are use this AI”; “It is good . It very help for our education”; “Artificial intelligence is part of computer science and its one of quick access”; “It's AI app”, etc.

It is very obvious that most of the participants tend to use AI tools without knowing what they are. The popular AI tools among the participants were: ChatGPT, Gemini, perplexity and Grok, out of which the most number of students use ChatGPT. Nearly all the students use AI tools for academic purposes in relation to solving doubts, summarizing, completing assignments, finding out facts quickly, summarizing, developing English and checking the grammar. Here, what is noteworthy is the over-reliance of students upon AI tools, which will drastically affect their intellectual acumen. There are English courses at Universities in order to cater to their English Language requirements. However, when students resort to AI tools even for comparably doable tasks by way of their practice, there arises a problem in the academia pertaining to academic culture.

The following are the challenges encountered by the participants in regards to the usage of AI tools: addiction, lack of creative thinking, over-dependence, misinformation, loss of reading habit, lack of self-judgement, critical thinking skills and decision-making skills. loss of man/woman power.

Furthermore, in general, the reliability of the information generated by the AI tools can be a question, but the participants in the study cross-check the information generated through the AI tools to verify facts as AI tools are prone to hallucinations. However, the extent to which it can be efficient is a question amidst all the softwares on the internet.

The above findings coincide with the focus-group discussion and the systematic observation employed by the researcher over a course of six months. In some cases, there have been differences in relation to the original language of the participants and the language employed in their academic submissions in that they must have used AI tools for the completion of their assignments as evidenced in ESL classes(English as a second-language). Thus, in the domain of hu-

manities and social sciences, the use of AI tools can be a controversial concept which academics and researchers across the globe are trying to comprehend, amidst all the practical challenges.

Conclusion

Technological advancements under the sun can be beneficial to the community and at the same time baneful or baleful, all of which is dependent upon the ways in which the users attempt to utilize the tools, as with Artificial Intelligence. They might be very useful in the sphere of humanities and social sciences, but what matters is the optimal use of these tools for the purpose of our academic enrichment without compromising our ethical values. Therefore, while recognizing the stark advantages of AI tools in the realm of humanities and social sciences, everyone should be aware of the reliability of information, potential weaknesses of AI tools and the extent to which it is permissible and advisable in the academic disciplines, in order to bring out best academic practices. At universities, a workshop can be conducted for the students in light of the above-mentioned concerns as almost all the students tend to use AI tools in their academic endeavours, some with awareness plus ethical considerations and some without them, which might affect the academic integrity and outcomes.

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