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Full Length Research Article

Artificial Intelligence, Students, and Educational Management: A Contemporary Analysis

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Abstract

This paper explores the impacts of the use of Generative Artificial Intelligence (Gen AI) tools on students, the patterns of their use, the purposes, and potential effects on academic behaviour and learning. The increasing presence of AI-based apps is driving students to constantly use Gen AI systems to assist them with homework, develop content, conduct research, and explain concepts. On the one hand, these tools significantly improve efficiency, accessibility and personalised learning, but on the other hand, they are also associated with problems of academic integrity, over-reliance and the development of critical thinking skills. It is founded on a survey distributed to students to obtain primary feedback concerning their impressions and perceptions on how generative AI is applied in a classroom. The survey will examine the frequency of AI utilization, academic activities, and the purpose of AI, and the perception of the benefits and disadvantages by the students. The students provide valuable information on the impacts of these technologies on their study behaviours, learning performance, and engagement of their brains due to their status as the prime users of the Gen AI tool. Based on the results, most students regard generative AI as an effective learning tool in enhancing understanding and time-saving. However, the reduction in originality, reliance on the content created by AI and damage to problem-solving ability are also of concern. The paper highlights the importance of using AI responsibly and focuses the attention on duality of generative AI in education. To ensure that the Gen AI tools are integrated in the education system in a manner that facilitates learning without undermining intellectual growth and academic honesty.

Keywords: *Generative Artificial Intelligence, learning, AI Ethics.*

I. Introduction

Artificial intelligence (AI) has rapidly evolved into a hypothetical concept and then into a practical and widely accessible technology that has a significant influence on a host of diverse domains, and education is not an exception. Over the past few years, the manner in which students learn, study and interact with academic materials has transformed significantly as a result of the invention of Generative Artificial Intelligence (Gen AI) applications that can generate text, code, images, and solutions when prompted to do so by the user. These resources are increasingly being used by students in all academic disciplines in performing activities such as understanding challenging topics, completing assignments, coding problems, developing projects and preparing to take exams(Pedro et al., 2019). Consequently, AI has altered the traditional forms of teaching and become an indispensable aspect of the modern student life. AI is rapidly gaining popularity with students as it may provide individual explanations, instant feedback, and 24-hour academic assistance. Unlike traditional learning materials, gen AI tools can also adapt to the unique learning style and provide learners with step-by-step instructions, which is especially appealing to students under pressure to achieve good grades. It has been demonstrated that the use of AI-based tools has led to better grades, increased productivity, and academic performance. Students often state that AI helps them to better understand complicated concepts and complete their tests in a shorter period of time which enhances their grades and overall academic results(Ambarita & Nurrahmatullah, 2024). Nevertheless, although most of the existing studies concentrate on the academic benefits, academic achievement does not fully describe the effects of AI on students. Learning is a complex process that involves development of critical thinking, creativity, autonomy, problem solving skills and ethics. The excessive use or unregulated addiction to AI technologies can influence these aspects in a manner not reflected in the academic outcomes in the short

term. One of the growing concerns regarding the use of AI in learning is the potential worsening of the ability of students to think independently. When students frequently base their thinking, analysis, and reasoning on AI-generated answers, they have a risk of being less critical, analytic, and rational(bin Salem, 2024). The dependence can ultimately damage their critical and creative thinking abilities as well as their problem-solving skills. The ease with which it is possible to generate ready-made content also raises concerns regarding originality, academic integrity as well as ethical learning practices. These issues support the idea that it is important to consider not only the ways of how AI can benefit students but it can also affect their thoughts and intellectual growth. Irrespective of these concerns, the number of studies that focus on the adverse or unforeseen consequences of using AI in the everyday academic experiences of students is relatively small. Sufficient information on the psychological and cognitive implications of AI is still lacking as most of the existing literature evaluates it according to such performance measures as efficiency and grades. The lack of decent research leads to an insufficient perception of the role of AI in education(Gasaymeh et al., 2024). It is important to consider both advantages and disadvantages of the A.I. tools as they evolve and are more extensively embedded in the learning environments. To bridge this gap, this paper examines the general impacts of artificial intelligence on students and particularly, their critical thinking, thinking, and mind-set. The research examined the impacts of AI on the learning, decision-making, and problem-solving behaviour of students by transcending traditional academic performance measures. The research will provide a realistic and rough view of how AI affected modern education by analysing the point of view of students and their experiences. The research is founded on the empirical works on 200 students who took part in an organized survey. The aim of survey was to obtain a complex feedback on the quantity of students who use AI tools, the reason of using them, and the ways they should think AI could affect their learning practice.

The primary objective of this study is to give a balanced evaluation of artificial intelligence in education, emphasizing on its possible advantages as well as its disadvantages. The article identifies the dualism around AI and the importance of conscious application over the presentation of AI as either beneficial or harmful. The findings are supposed to endorse the development of policies that facilitate the use of AI in learning without posing a threat to intellectual growth of the students and contribute to the ongoing debate on the ethical use of AI in education(Fazil et al., 2024). Finally, one should understand the overall impact of artificial intelligence on students as it keeps changing the world of education. This research paper seeks to unveil the reality behind the use of artificial intelligence in students by examining its effects on critical thinking, learning attitude, and thinking capacity among students besides exploring the role that it plays in enabling them to record improved academic performance. The research should help make an informed choice and promote the responsible implementation of AI technologies in education by providing empirical data on student feedback.

II. Literature Review

The possibility of artificial intelligence (AI) to transform the field of teaching and learning has attracted a great deal of attention to the use of AI in education. Although studies indicate that AI has the potential to enhance teaching assistance, evaluation, learner involvement, and individualised learning, it also brings in concerns regarding ethical concerns, cognitive dependence, and critical thinking.(Ivanashko et al., 2024)

With AI-based learning systems, it has been proven that students can improve their learning by having learning content personalized to them. In the study guided by Self-Determination Theory, it was found that technology-based learning may play a favourable role in promoting student motivation and interest in case of the alignment of technology-based learning with the psychological needs of the person. Also, to ensure meaningful learning and responsible usage, it is essential to implement the AI integration process guided and design a structured curriculum. Teacher support is essential in effective use of AI since instructional guidance reduces the abuse and over-dependence on AI tools. Although AI provides a chance to obtain timely feedback during assessment, the issue of reflective thinking, independence, and authenticity arises. (Kerr, 2020)

Such qualitative research methods as the thematic analysis are viable options to find out how students perceive and use AI. The systematic review by highlights the scarcity of the empirical emphasis on cognitive development and critical thinking of students and the possibility and difficulties of AI in learning.(Kumar & Raman, 2022)

III Research Methodology

The research methodology adopted during this study is the survey-based approach in order to know the

actual consequences of using artificial intelligence (AI) tools on students. It dwells upon the usage trends, the motives of adoption, the perceived implications, and the attitude of students to AI. A quantitative approach supported with descriptive analysis was employed to collect opinions and feedbacks of the students.(Lampou, 2023)

3.1 Survey Design

The survey was carried out using Microsoft Forms due to the ease of use and the ease of data collection. The questionnaire was well developed to gather subjective and structured responses of students. It contained three types of questions:

a. Multiple-choice questions to establish the aims and patterns of AI utilization.
b. Likert questions to assess the feelings over the impacts of AI.
c. Open-ended feedback questions to obtain personal opinion and experience of students.(Lin et al., 2023)

The survey was centred on the following areas, which were critical:

The application of artificial intelligence among students. The reason why students should use AI. How AI is affecting their academic behaviour, learning and cognitive abilities? The attitudes and beliefs of students on the use of artificial intelligence in general. The questions were created in such a way that they were unbiased, transparent and relevant in the objectives of the study.

3.2 Participants

A total of 200 participants were included and they were all undergraduates in colleges. The age and gender of the participants (students belonging to different academic years and disciplines) was between 19 and 25. Anonymous gathering of responses was used to encourage sincere and truthful feedback and participation was voluntary.

3.3 Data Analysis

Data that was collected were analysed using descriptive statistical methods. The responses were converted to percentages to discover the trends and patterns of AI usage, dependency, learning behaviour and perceptions. Given that the aim of the study was to understand the real experience of students using AI tools, the analysis focused on the summary of student responses instead of proving the cause-and-effect relationships.(Lampou, 2023)

IV Data Analysis and Key Findings

- **Adoption of AI Tools:**
The adoption of the AI tools is critical step towards the usage of the Generative AI and this is represented by the following graphs:

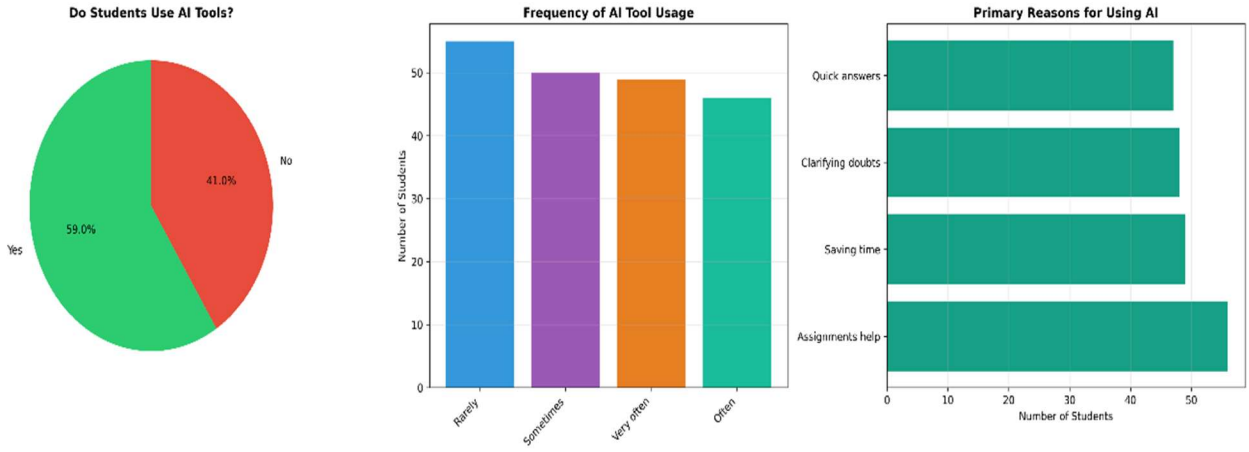

Figure 1: Data analysis of the AI tools Usage

According to the survey, 59% of students are active users of AI tools, and 41% of students are not. The frequency of usage was well balanced with 27.5% of AI users using AI infrequently, 25% occasional, 24.5% frequently and 23% frequently. The motivation behind the use of AI was assistance with assignments (28%),

time savings (24.5%), answering questions (24%), and getting fast answers (23.5%). These findings indicate that AI is primarily regarded as a handy academic aid.(Eltahir & Babiker, 2024)

4.1 Effects on Critical Thought

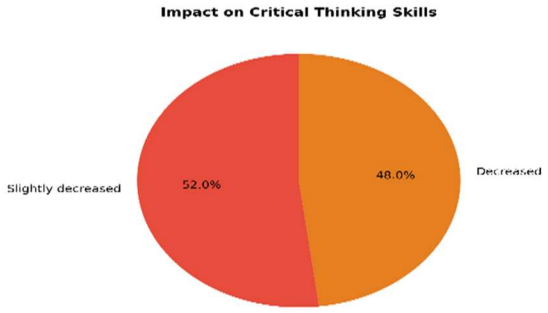

Figure 2: Effect of the Critical Thinking

One of the most significant conclusions was the massive opinion that AI has a negative impact on critical thinking. All the respondents reported that their critical thinking skills had decreased to some degree with 52% showing a slight decrease and 48% showing a severe decrease. This trend was similar in both disciplines and academic years, and this is a signal of a serious concern.

4.2 Dependency Problems

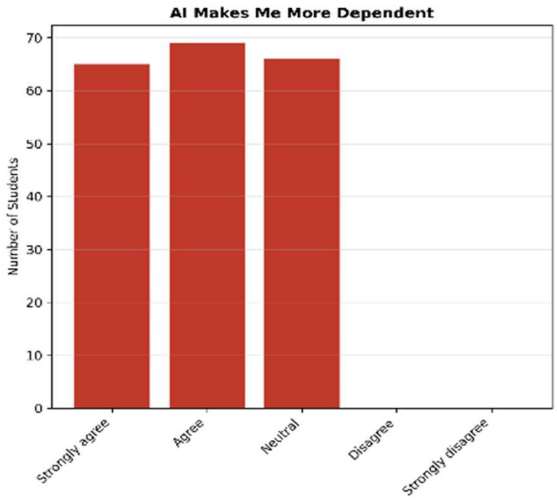

Figure 3: AI Dependency Graph

There was also a high dependency on AI, with 67% of the students admitting that AI takes away their ability to think independently. It is important to note that 72.5% of students indicated that they would immediately use AI without attempting to solve issues independently, which indicates that AI has become not an extra learning method but a default mechanism.

4.3 Issues with Academic Integrity

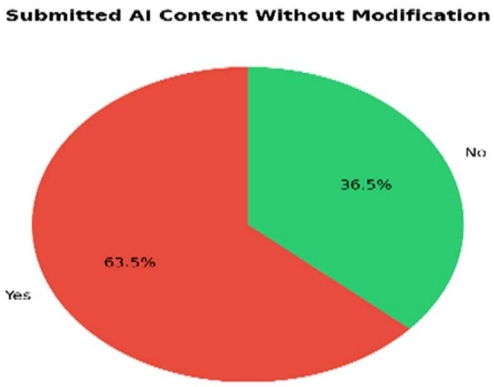

Figure 4: Academic Integrity

The academic integrity was a serious issue when 63.5% of the students reported submitting AI-generated work without making any alterations. This brings issues concerning authenticity, plagiarism and genuine learning purposes.

V Verification and Educational Practices

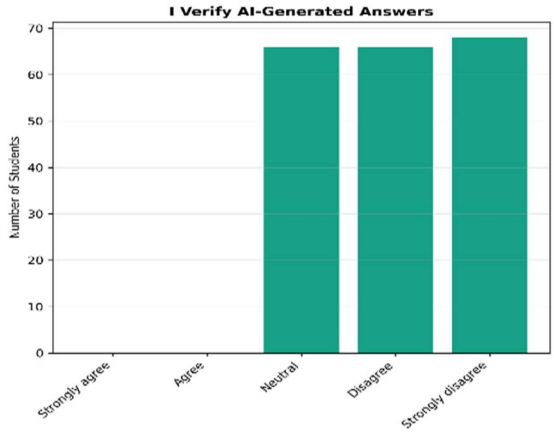

Figure 5: AI Generated Answers

Figure 6: Motivational Graph

These findings indicate that there are bad habits in terms of verification as 67 percent of students do not recheck answers generated by AI. Besides, 73 percent of respondents said that AI reduces the effort they put into the learning process and that it implies that active learning is decreased, and 60 percent believed that they were less motivated to learn in depth.

5.1 The Paradox of Academic Performance

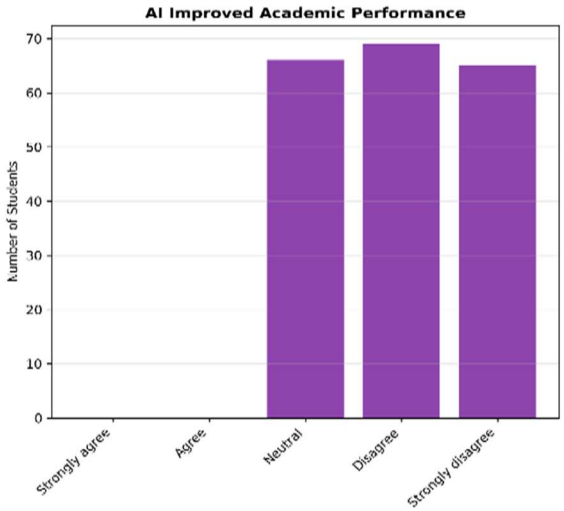

Figure 7: Academic Performance

According to the group of students studied (67%), there was no increase in grades, comprehension, or confidence even though AI was highly used by students, which implies that AI use does not necessarily lead to higher academic achievements.

Conclusion

The research adopted a survey-based research design to examine usage patterns, perceptions, and learning behaviours of undergraduate students to examine the impact of AI tools. The findings indicate that despite the recent popularity of artificial intelligence as a means of academic assistance, it has more than practical and effective impacts on students. Students mostly use AI in assignments, answering questions, and finding solutions to problems in the shortest possible time. However, this over dependency has provoked serious questions on academic honesty, self-learning, and critical thinking.The consciousness of the students to the negative impacts of AI is also brought to the fore as the study revealed that most students acknowledged that AI enhances dependence, idleness and shallow learning. These findings remind about the duality of artificial intelligence in education as, on the one hand, it can be a source of beneficial academic assistance, whereas, on the other hand, its unethical and uncontrollable application may ruin important cognitive skills. On balance, this paper reaches a conclusion, that AI must be integrated into the educational process in a conscientious and moderate manner, which is supported by both institutional policies and ethical norms and pedagogies, which foster critical thinking and active learning. Ethics and AI literacy were the central drivers of the development of educational interventions and their evaluation.

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