Peaceland Journal of Innovation and Resaerch in Educational Sciences
PJIRES

Volume 1, Issue 1, November 2025, p. 1-11

Dangers Of Artificial Intelligence On Students Academic Prowess In Awgu Education Zone.

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Abstract: The study examined dangers of artificial intelligence on students academic prowess in Awgu education zone**.** Two research questions guided the study. Descriptive survey research design was adopted for the study. The population for the study was 1,911 students in the 54 public secondary schools in Awgu Education Zone. The instrument for data collection was a researcher developed questionnaire titled "dangers of artificial intelligence on students academic prowess Questionnaire (DAISAPQ). Three experts from the Department of Mathematics and Computer Education in the Faculty of Education, Enugu State University of Science and Technology (ESUT), Enugu, undertook the validation of the instrument. To assess the internal consistency of the instrument, the researcher applied the Cronbach alpha reliability method, producing values of . 0.91 was established confirming its reliability. The research questions were answered using mean scores and standard deviations. The findings of the study showed that students over reliance on AI tools have negative influence on their academic skills and that over reliance on AI can lead to decrease in critical thinking skills, problem solving skills, and creativity, biased assumptions, privacy concerns, inequality and discrimination. Based on the findings, the researcher recommended that Students should set a time boundary for the usage of AI tools, while in the learning process they may allocate limited time for their activities or assignments and ensure that there shouldn't be occurrence of over-reliance and it can be using as complementary tools rather than completely replacing traditional learning methods.

Keywords: Danger, AI, Academic prowess, Pedagogy, character wise

Introduction

The emergence of artificial intelligence (AI) technology has created a revolutionary change in lives and works. Artificial intelligence (AI) is a set of technologies that enable computers to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, make recommendations, and more.Artificial intelligence (AI) tools are predominantly used to make work easy or in a smart way. These artificial intelligence (AI) tools have made the work more efficient and quickly on time. The prevalent of artificial intelligence (AI) technology tools has also changed revolutionary changes in education; it has brought broad changes in the teaching

and learning process where students have been using artificial intelligence (AI) tools to make their studies more efficient further these tools help to improve the learning process of the students. Students get vast amounts of information through artificial intelligence (AI) tools very quickly and they have been using them to complete academic tasks on time (Mahmmad, 2020).

According to Borenstein & Howard (2021) students have made the advantages artificial intelligence (AI) tools for feedback in place of a personalized learning environment. Artificial intelligence (AI) integration technology tools such as Clickup, Lessonplans.ai, OpenAI ChatGPT, Gradescope, Chatbots, Botsify, etc, in the classroom by the teacher has been used to facilitate the completion of academic tasks such as generating lesson plans, grading, providing targeted tests and assignments to students, PowerPoint presentations and so on, have become easier and more efficient for the teachers (Akgun & Greenhow, 2022). These tools are predominantly designed to analyze the data and provide adaptive information according to individual needs. However, the main aim of the integration of (AI) technology tools in education is to enhance and improve the academic and overall performance of the students (Seo, Tang, Roll, Fels & Yoon, 2021)..

Anyhow the development of any new innovative technology has some drawbacks, likewise, the prevalence of artificial intelligence (AI) technology has concerns regarding its dangers on students academic and real-life performance (Kamalov, Santandreu, Calonge, & Gurrib, 2023). The uncontrolled and excessive utilization of artificial intelligence (AI) tools has some critique that students become more reliant on it which results it hindrance to decision-making process, critical thinking, and problem-solving abilities, and also in the practical skill development. Furthermore, the concerns regarding the data privacy of the students information which is collected and used for unethical use. Now it has become more important to make a balance between the utilization of (AI) and maintaining the fundamental and essential elements of humans in education.

As the usage of AI tools escalate in the educational setting, it's crucial to address the negative impacts on students academic skills (prowess) and performance (Suharyat, 2023). The Students activities and involvements in academic domain plays a vital role for their holistic development, the adoption of AI tools in the academic activities can be encourage until it will become more reliant. Over-reliance on AI tools by the students for the achievement of their academic goals can be result decline in critical thinking skills, disappearance of the traditional skills such as handwriting skills, memorization and math solving skills which are still important for academic settings. Moreover, the over-reliance of AI tools may lead to

concern about ethical issues such as privacy of the students these AI tools may collect the data of the students without their consent and knowledge which can be possible to misuse their sensitive information, therefore addressing ethical concerns should not be ignore in the view of to establish safeguards to students well-being and rights (Abd Rahman, Rodzi, Razali, Mohamad, Nazri, & Al- Sharqi, 2023). Furthermore, AI tools may contain inaccuracy and biases in the readily available data which can affect the academic work of the students that may lead to get wrong conclusion and false information from AI powered platforms (Bai, Liu & Su, 2023). AI tools provides vast amount of information to students which can leads to the students use to copy and paste the data without understanding the contents or the topic, this attitude of the students makes them lethargic and inactiveness moreover it will lead to hindrance for cognitive development of the students which is vital for academic settings. The ready-made data and solutions from the AI tools are based on the algorithm, when the algorithms are trained this may exhibit the bias data to students which leads to the misleading information among the students and without proper analyzing the data, solely believing and depending on ready-made information and solutions by the students that may cause to unfair outcomes and strengthen the inequalities among the students in the real-world (Nguyen, 2023). Furthermore, the excessive utilization of AI tools by the students discourages their resilience, perseverance and patients which is crucial for successful life. Ahmad, Han, Alam., Rehmat, Irshad, Arraño-Muñoz, & Ariza-Montes (2023) opined that AI powered platforms often provides immediate responses and feedback which results the development of patient skills has been discourage and it can lead to increase demand for immediate results and success without having patience but in real-life challenges requires patience, students may experience frustration when they expectations are unmet and they will suffer in depression when things are not achieved on time. Another possible concern is that breakdown of students perseverance and resilience, when things are available effortlessly from AI tools the perseverance and resilience skills among the students might be discourage although this skills are crucial to face challenges in the real-world .

To mitigate such these challenges the educators and policymakers must hold the balance between utilizing AI tools and conserve the development of real-life skills of the students, this can be attained by integrating the project-based learning, hands-on experiences, and independent critical thinking opportunities into the curriculum 9. Bergström, Repo & Tuunainen (2024) revealed that the balance between the usage of AI tools and face to face interactions can help the students to develop their essential skills such as interpersonal skills. Ultimately by addressing these concerns we can promote a education environment where students can develop their holistic development without comprises the usage of AI

powered platforms. Therefore, this study aimed at identifying the dangers of artificial intelligence on students academic prowess in Awgu L.G.A, Enugu State.

The purpose of the study was to investigate dangers of artificial intelligence on students' academic prowess in Awgu L.G.A, Enugu State.

Specifically the study seeks to assess:

1. Pedagogical dangers of artificial intelligence on students academic prowess
2. Character-wise dangers of artificial intelligence on students academic prowess

The following research questions are been developed to guide the study.

1. What are the pedagogical dangers of artificial intelligence on students academic prowess?
2. What are the Character-wise dangers of artificial intelligence on students academic prowess?

Method

The research design adopted for this study was a survey design. This was used to elicit different opinion of people on issues of investigation. According to Nworgu (2015), descriptive survey is a research design where a group of people or items is studied by collecting and analyzing data from only a few people or items considered being the representative of the entire group. This research ascertained the Dangers of artificial intelligence on students academic prowess in Awgu Education Zone. The choice of survey design was because the study established the influence of the independent variables and the dependent variable

The study was conducted in Awgu Education Zone of Enugu State. Enugu State has six Education Zones. The Zones are: Enugu, Agbani, Udi, Awgu, ObolloAfor and Nsukka. Awgu Education Zone consist of three Local Government Areas (LGA) namely Awgu,Oji-River and Aninri L.G.A of Enugu State. The area is predominantly urban in nature with basic modern facilities such as good roads and electricity. Most people living in Awgu Education Zone are civil servants, lecturers, teachers, students and traders and a few are farmers. Thus, they value education. There are 54 public senior secondary schools in the zone. Awgu Education Zone is chosen because, it is made up of reasonable number of the school types (Boys schools, Girls schools and Co-Educational schools) which will enable the researcher draw a homogeneous sample for the study.

The population of the study was made up of the entire Senior Secondary two (SSII) Computer Studies Students totaling 1,911 students in the 54 public secondary schools in Awgu Education Zone. There are twenty-six schools in Awgu, Seventeen (17) schools in Enugu Aninri and eleven (11) schools in Oji-River Local Government Area, Enugu State.

The sample comprises 384 (20%) SSII Computer Studies Secondary students' who were drawn from 12 out of 54 public schools in Awgu Education Zone, using simple random sampling technique (Balloting without replacement). These schools include; three girls (only) schools, three boys (only) schools and six co-educational schools. In which four schools were sampled from each local government area of the Zone using simple random sampling (Balloting without replacement) and purposive sampling. The only boys (only) school in Awgu and girls (only) school in Aninri were purposively sampled.

Instrument for Data Collection

Two (2) instruments were used for data collection. These is dangers of artificial intelligence on students academic prowess Questionnaire (DAISAPQ). This instrument consists of 20 items. Participant's responses were measured using 4-point Likert scale ranging from "strongly agree" to "strongly disagree". The total possible scores is 100marks.

The "performance motivation in Computer Studies scale (CAMQ)" developed by Mubeen and Reid (2014) was adapted to determine students' performance motivation in Computer Studies. Some modifications were made which include changing the name of the instrument from Science Motivation Questionnaire to Computer Studies Performance Questionnaire, changing the course (science) to Computer Studies and replacing the response indifferent to Neutral. This instrument consists of 16 items. Participant's responses were measured using 4-point Likert scale ranging from "strongly agree" to "strongly disagree". The total possible scores is 100marks.

The research purpose, scope, research questions, hypotheses and questionnaire items were submitted to three (3) specialists, two from the Department of Mathematics and Computer and one from Measurement and Evaluation; all in Faculty of Education, ESUT for face validity. These specialists examined the items in terms of relevance and clarity as well ascertain if the items will be related to the purpose of the study. The clarity of language and coverage of relevant areas were also checked. The corrections given by the validators were effected.

The reliability co-efficient of the questionnaires was established by administering the questionnaire to 25 students randomly sampled in one of the secondary schools in Udi Education Zone in Enugu State which is outside the research area of the study and has homogenous culture with the research area, Cronbach alpha was used to determine the reliability of the instrumentsbecause the items were psychologically scored.

The reliability indices was found to be, 0.91 for the Questionnaire which shows that the instruments are reliable for the study. This reliability co-efficient was considered adequate for the internal consistency of the instrument. An instrument is considered reliable if it lies between 0 and 1 and the closer the calculated reliability co-efficient is to zero, the less reliable the instrument and the closer it is to 1, the more reliable the instrument (Uzoagulu, 2000).

The researcher with the aid of research assistants which were subject teachers in the sampled schools distributed the instruments to the respondents. She had meeting with the research assistants, where the objective of the study was discussed. The questionnaire at the end of administration was collected on the spot. The researcher revisited the school to collect any questionnaire that was not submitted on the spot. The students' cumulative annual results were collected from the subject teachers and form teachers. 100% of the questionnaire were returned.

Research questions 1-2 was answered using mean and standard deviation. Hypotheses 1 to 2 was tested using t-test statistic at 0.05 level of significance. A mean score of 2.50 and above was classified as Agree (A) while mean score of less than 2.50 was classified as Disagree (D). For the purpose of analysis of data, responses of strongly Agree (SA) and Agree were collapsed into Agree (A) while responses of Disagree (D) and Strongly disagree (SD) were collapsed into Disagree (D).

RESULTS

Research Question 1

What are the pedagogical dangers of artificial intelligence on students' academic prowess?

Table I: Mean ratings on the pedagogical dangers of artificial intelligence on students academic prowess**.**

N=384

S/N	Pedagogical dangers of artificial intelligence on students academic prowess	SA	A	D	SD	∑fx	$\bar{X}$	SD	Decision
1	Over-reliance on AI-generated content	200	100	40	44	1224	3.18	0.82	Agree
2	Lack of critical thinking and problem-solving skills	160	150	50	24	1214	3.16	0.87	Disagree
3	Decreased student autonomy and agency	220	80	50	34	1254	3.26	0.52	Agree
4	Diminished creativity and originality	180	100	58	46	1182	3.07	0.84	Agree
5	Dependence on AI-driven learning platforms.	137	92	77	78	1056	2.75	0.52	Agree
6	Potential biases in AI-driven assessment.	100	100	100	84	984	2.56	0.57	Agree
7	Risk of AI-generated misinformation	150	150	30	54	1224	3.18	0.41	Agree
8	Neglect of higher-order thinking skills	300	70	5	9	1429	3.72	0.86	Agree
9	Neglect of emotional intelligence and empathy	150	100	50	84	1084	2.82	0.40	Agree
10	Focus on procedural knowledge over conceptual understanding	180	20	50	134	1014	2.64	0.71	Agree
	Grand Mean						**3.03**	**0.69**	**Agree**

Result on Table 1 are sample data on the pedagogical dangers of artificial intelligence on students academic prowess. Table 1 indicates that there are high pedagogical dangers of artificial intelligence on students' academic prowess, nine out ten. These items are numbered 1,3,4,5,6,7,8,9 and 10 with mean score ranging from 2.96 – 3.88 and standard deviation from 0.40 to 0.69. On the other hand, the overall mean ranged from 1.64 to 3.56 with a grand mean of 3.03 and a standard deviation of 0.69. All these indicate that all items in this cluster are attributes to pedagogical dangers of artificial intelligence on students academic prowess. Finally, the overall grand mean of 3.03, implies that AI can influence teaching and learning negatively.

Research Question 2

What are the Character-wise dangers of artificial intelligence on students academic prowess?

Table 2: Mean rating on the character-wise dangers of artificial intelligence on students academic prowess

N=384

S/N	Character-wise dangers of artificial intelligence on students academic prowess	SA	A	D	SD	∑fx	$\bar{X}$	SD	Decision
11	Over-reliance on AI may lead to diminished personal responsibility.	137	92	77	78	1056	2.75	0.52	Agree
12	AI-driven solutions may hinder students' ability to cope with failure.	100	100	100	84	984	2.56	0.57	Agree
13	AI-generated content may undermine intrinsic motivation.	150	150	30	54	1164	3.03	0.41	Agree
14	AI-driven tools may enable delayed decision-making.	300	70	5	9	1429	3.72	0.86	Agree
15	Reduced human interaction may impair emotional intelligence.	150	100	50	84	1084	2.82	0.40	Agree
16	Over-reliance on AI may lead to social withdrawal.	180	20	50	134	1014	2.64	0.71	Agree
	Grand Mean						**2.92**	**0.78**	**Agree**

Table 2 shows sample data on Character-wise dangers of artificial intelligence on students' academic prowess in Awgu Education Zone. Table 2 indicates that there is high Character-wise dangers of artificial intelligence on students academic prowess in all the six identified. The items are numbered 11,12,13,14,15 and 16 with mean score ranging from 2,75 to 3,68. On the other hand, the overall mean ranged from 1.64 to 3.56 with a grand mean of 2.92 and a standard deviation of 0.78. All these indicate that all items in this cluster are attributes to Character-wise dangers of artificial intelligence on students academic prowess. Finally, the overall grand mean of 2.92, implies that the respondents agreed that AI can influence students Character negatively.

Discussion of the findings

The discussion will be presented according to the four research questions, and the two corresponding hypotheses.

Findings in table 1 sought to find out pedagogical dangers of artificial intelligence on students' academic prowess. The result of the analysis of research question 1 showed that the respondents agreed that AI can lead to: over-reliance on AI-generated content, decreased student autonomy and agency, diminished creativity and originality, dependence on AI-driven learning platforms, risk of AI-generated misinformation, neglect of higher-order thinking skills, neglect of emotional intelligence and empathy and focus on procedural knowledge over conceptual understanding. This is in line with the study of Abd Rahman, Rodzi, Razali, Mohamad, Nazri, & Al- Sharqi (2023) who opined that over-reliance of AI tools may lead to concern about ethical issues such as privacy of the students these AI tools may collect the data of the students without their consent and knowledge which can be possible to misuse their sensitive information, therefore addressing ethical concerns should not be ignore in the view of to establish safeguards to students well-being and rights.

Findings in table 2 shows sample data on the Character-wise dangers of artificial intelligence on students' academic prowess. Table 2 indicates that Over-reliance on AI may lead to diminished personal responsibility AI-driven solutions may hinder students' ability to cope with failure, AI-generated content may undermine intrinsic motivation, and help each other, AI-driven tools may enable delayed decision-making and that over-reliance on AI may lead to social withdrawal. This has a link with the work of Nguyen (2023) who opined that AI tools provides vast amount of information to students which can lead to the students use to copy and paste the data without understanding the contents or the topic, this attitude of the students makes them lethargic and inactiveness moreover it will lead to hindrance for cognitive development of the students which is vital for academic settings.

Conclusion

AI tools can affect both positive and negative on student's academic and real-life performance, ultimately discussed on the negative impacts on students. Artificial Intelligence tools has the potential benefit such as personalized learning experiences, improves teaching-learning efficiency, and provides valuable resources, correspondingly it has potential negative consequences such as overreliance, hindrance to critical thinking skills, problem solving skills, and creativity, biased assumptions, privacy concerns, inequality and discrimination. Therefore, it's crucial to address these negative pitfalls and educators, parents and policymakers to be aware about limitations of these tools and establish a proper regulations and guidelines to strike a healthy balance of utilizing AI tools without compromising the traditional method and ensure promoting a well-rounded development in both academic and real-life

performance. And by following the strategies which is discussed above we can create a healthy balanced and impactful learning environment for our future generations.

Recommendations

1. Firstly, Students should set a time boundary for the usage of AI tools, while in the learning process they may allocate limited time for their activities or assignments and ensure that there shouldn't be occurrence of over-reliance and it can be using as complementary tools rather than completely replacing traditional learning methods.
2. Secondly, the act of self-control should be taken from students when using AI tools for their purposes. They should control themselves by spending their energy, time, interest, and knowledge on these tools in order to protect themselves from over-reliance.
3. It is essential for educators to actively monitor the students engagement in learning process and assess their progress when they utilizing AI tools.
4. Educators should recommend the students to utilize the AI tools as complementary support rather than completely removing traditional learning methods.

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