

# Exploring the Potentials Versus the Negative Consequences of Artificial Intelligence's Use in Academic Environments

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**ABSTRACT:** Artificial intelligence (AI) holds potential and challenges for various professional applications, including education. The impact of AI on educational institutions is multifaceted, encompassing multiple aspects of teaching, learning, and administrative functions. This study examines AI's potential as a complementary tool in education and its challenges within a learning environment. It also explores potential negative consequences, using earlier models and experiences from the popular adoption and use of social media in academic environments. A survey of 100 undergraduate students was conducted to learn directly from their practical experiences with AI. Findings indicate that they readily explore its uses, with 65% falling under the frequent, to almost always use in educational or learning situations. Additionally, 13% indicate a self-assessed proficiency level of 'experts' on AI, while 26% indicate that they are proficient (skillful) users.

**KEYWORDS:** Artificial intelligence in education, AI use in universities, Chat GPT

## Introduction

The idea that intellect emanates from machines, devices, or other inanimate objects goes against the very definition of the term. Coupled with the fact that people (human intellect) design the AI device, it should suggest that its intellectual capabilities should be limited by that of the software or program designer. Yet there seems to be this general belief that AI use should alleviate, at the very least, if not replace the human need to exert themselves in developing and using their innate human intellect to resolve issues as they arise.

The argument for its proponents usually boils down to the processing speed and depth of the software's information search via specific keywords, etc. In that sense, artificial intelligence, in literal terms, may be misleading, disarming people from pursuing individual intellectual and cognitive development, and when it comes to education, professional insight, or development. Moreover, if that is proven as a practical consequence of AI's popular use, educators, their beneficiaries, and the general society should be concerned about the innate and independent intellectual capabilities of the students they graduate.

While some see that argument as an extremist view, suggesting that the practical use of AI should assist in accelerating development and that is all that matters, others propose its use to be in complementary terms, where AI provides information or expertise needed to analyze issues, by adding or subtracting information towards an issue's resolution.

The definition of intelligence, by reference here, human intelligence, has been transformative over time. In earlier years, a psychologist (Spearman 1904) concluded that intelligence is a general cognitive ability that researchers can measure and express numerically. Later, Thurston (1938) provided seven segments of intelligence that appear to override Spearman's general intelligence theory. These seven are: associative memory, numerical ability, perceptual speed, reasoning, spatial visualization, verbal comprehension, and word fluency. More recently, Howard Gardener's theory of multiple intelligences has proposed eight different intelligences. These include among others, verbal-linguistic intelligence, i.e., well-developed verbal skills and sensitivity to sounds, meanings, and rhythms of words, and, visual-spatial intelligence, i.e., the capacity to think in images and visualize accurately and abstractly.

Body-kinetic intelligence is also added to the previously recognized intelligence categories, i.e., the ability to control body movement and handle objects skillfully.

Intelligence in psychology is defined as ‘the ability to learn from and adapt to novel situations as to use that knowledge to create a desired outcome. It is seen as a combination of several skills such as problem-solving, understanding abstract concepts, and critical thinking. Merriam-Webster’s definition is simply, ‘skilled use of reasoning.’

Finally, the idea of plagiarism in educational institutions seeks to discourage students from using other people’s work and claiming it as theirs. For one, the idea behind the rejection of such practice in claiming another person’s work as one's own is intellectual rights to originality (copyright infringement). Another reason is to make sure the student pursues originality by exercising his own cognitive, intellectual and reasoning skills while developing solutions to problems, most especially for the specialty he seeks certification from a higher institution. In other words, how can the university certify or issue a certificate of aptitude and capacity to a student whose bulk work does not originate from him? These issues must be examined and timely resolved by institutes of higher education to continue to reap the benefits of higher education while heading off any negative consequences.

### **Academic Definition of Artificial Intelligence**

When it comes to artificial intelligence ascribed to technology or applications, the University of Illinois, Chicago, describes AI while displaying courses relating to it, thus, “Artificial intelligence represents a branch of computer science that aims to create machines capable of performing tasks that typically require human intelligence. These tasks include learning from experience (machine learning), understanding natural language, recognizing patterns, solving problems, and making decisions.” Examples of how they work include self-driving cars and virtual personal assistants.

Other functions include simulating human intelligence through algorithms, data, and computational power. “The goal is to enable machines or software to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, perception, and language understanding” as stated by the University site. These words or phrases belong to cognitive issues, the domain of the human thinking process in psychology. Furthermore, that definition alone provides an argument for its uses to replace natural human intellect when applied to the phrase ‘perform tasks that typically require human intelligence, reasoning, problem-solving, perception....’ While some may argue that AI multiplies incidences of augmented intelligence application to situations with a potential boost in productive uses, at the same time it opens doors to nations and communities moving away from the curricula policies that focus on educating the human intellect towards innate and natural problem solving, reasoning, and perception.

### **The Purpose of Higher Education**

To try to understand the purpose for which university education is sought (Chan 2016), a scholar writing on the purpose of higher education 2016 suggests that ‘student expectations for a college degree tend to be very instrumental and personal, while higher education purpose of undergraduate education tends towards highly ideal life- and society changing consequences. The scholars (Ramley 2014; Chan 2016) also added that knowledge would equip ordinary citizens to share in common life, helping themselves, and the society in general (Ramley 2014). Oxford scholar Cardinal Newman (1976) advocated for higher education as a place for cultivating universal knowledge rather than developing vocational training and research. Specifically, he argued that college graduates should complete courses in classics and philosophy because these courses could “strengthen, refine, and enrich the intellectual powers” instead of training people for minimal blue-collar job skills. In other words, colleges and universities serve the public good by producing highly

educated leaders and informed citizens to use such knowledge to broaden their horizons, and to prepare themselves for the rigors of 21st-century citizenship (Benson and Boyd 2015).

The idea of public good, humanity, and humane purposes, or moral duty to the greater community was discussed eloquently by Reverend Martin Luther King (King 1947), questioning whether the purpose of education should include having ‘noble’ general good, i.e., moral purposes, or be pursued only as a means of exploitation (enrichment). Writing in the Morehouse College’s publication, *The Maroon Tiger*, King stated “The function of education, therefore, is to teach one to think intensively and to think critically. But education which stops with efficiency may prove the greatest menace to society. The most dangerous criminal may be the man gifted with reason but with no morals.” King added, “We must remember that intelligence is not enough. Intelligence plus character—that is the goal of true education.”

Recently, that view of public good and noble purposes appears to be changing. Colleges and universities have begun to operate as a corporate industry with predominant economic goals and market-oriented values (Gumport 2000; Kerr 1994; Thompson 2014).’ This new focus on individual and corporate gains in income and economics as opposed to general community ethical and value-added development, may support the shift to 21st-century technology development that focuses on individualistic goals for university education seekers, rather than the greater community interest, and human problem-solving for the general good.

Two scholars (Robinson and Robinson 2022) provide some clarity about education and its pursuit relevant to the study. “There are a few terms that are often confused or used interchangeably—“learning,” “education,” “training,” and “school”, they argue—but there are important differences between them. “Learning is the process of acquiring new skills and understanding. Education is an organized system of learning. Training is a type of education that is focused on learning specific skills. A school is a community of learners: a group that comes together to learn with and from each other. We must differentiate these terms.”

To these scholars (Robinson and Robinson 2022), the purpose of education can be categorized into four, personal, social, economic, and cultural. An interesting argument under the social function sees networking within the campus environment as a function preparing students to participate in shaping the world they live in. An example given is, “Our freedoms in democratic societies are not automatic. They come from centuries of struggle against tyranny and autocracy and those who foment sectarianism, hatred, and fear. Those struggles are far from over. As John Dewey observed, ‘Democracy has to be born anew every generation and education is its midwife.’” (Robinson and Robinson 2022)

### **Statement of the problem**

The recent popular introduction and acceptance of Artificial intelligence poses various challenges when we talk of its uses and the process of incorporating it into different professions, in this case, education. To take a wait-and-see approach is to apply the same logic that seems to have been employed towards social media, which has many negative consequences that various professions, including media and communication face today.

Education is “the process of receiving or giving systematic instruction, especially at a school or university.” It is a process that enlightens an individual by giving (someone) greater knowledge and understanding about a subject or situation. A non-profit working with global communities to transform them from the basic needs circle of poverty sees education as a key to unleashing their creative talents (Forgotten Children 2024). “The importance of education lies in its ability to equip individuals with the tools they need to navigate life successfully, from basic literacy and numeracy to more advanced skills such as critical thinking and problem-solving.” The definition of formal as opposed to daily non-formal educational encounters (Murray 2023) is also described as ‘the process of facilitating learning or the acquisition of knowledge, skills, values, beliefs and habits.’ Miracle Foundation (2024), a nonprofit

organization dedicated to providing education for the non-privileged, also believes that it helps “foster critical thinking skills, problem-solving, and creative thinking, which helps children prepare for adulthood and overall development.”

This study aims to understand artificial intelligence’s advantages and disadvantages to educators. In addition, the need to study its uses and gratifications is also necessary to critically see how educators can use it productively while curbing any potential pitfalls. Specifically, this study seeks to see how it can impact educational pursuits from both the staff and student perspectives. Should we introduce AI in the teaching and/or learning processes? In addition, if deemed necessary to adopt, how can it be positively positioned for use by professors and students alike, while proactively curbing any negative consequences?

## Literature Review

At this time, at least for educators, much has been demonstrated about the advantages of employing AI in lesson planning and implementation. For example, AI can generate custom learning materials, such as quizzes, flashcards, and even whole lessons tailored to students’ strengths and weaknesses. In such a case, the tutor is assisted with a strategy and materials to assist the student. That is a teacher-assisted tool. This personalization ensures that students focus on the topics they need the most help with, maximizing their learning efficiency. To do that, however, AI uses the student’s personal datasets and background information to tailor the materials needed, something people have long held some mistrust over, leading to charges and arguments about bias and manipulations, outside of the AI-generated functions.

According to Kim (2020) artificial intelligence integration (AI) in communication education has significant implications for students’ learning outcomes, motivation, and engagement. Kim’s systematic review of AI in communication education reveals that AI-powered tools can enhance students’ writing skills, critical thinking, and creativity, but also raises concerns about the potential negative impacts on students’ autonomy, agency, and emotional well-being (Kim 2020). The study (Chen, Chen, and Lin 2020) ascertained that “AI has extensively been adopted and used in education, particularly by educational institutions, in different forms. Using these platforms, instructors have performed various administrative functions, such as reviewing and grading students’ assignments more effectively and efficiently and achieving higher-quality teaching activities. And because the systems leverage machine learning and adaptability, curriculum, and content have been customized and personalized in line with students’ needs, fostering uptake and retention, and improving learner’s experience and overall quality of learning.

Artificial intelligence in education: The three paradigms (Ouyang and Pengcheng 2021) give extensive and descriptive integration of AI in education. It claims extensive application in education, saying it (AIEd) opens new opportunities, potentials, and challenges in educational practices. It added that in its short historical application, AIEd has undergone several paradigmatic shifts, characterized into three paradigms: AI-directed, learner-as-recipient; AI-supported, learner-as-collaborator; and AI-empowered, learner-as-leader.

In these three paradigms, AI techniques are used to address educational and learning situations in varied ways.

1). Paradigm one: AI represents knowledge models and cognitive learning while learners just receive AI services (wholesale).

2). Paradigm two: AI supports the learning experience or process. In this case, learners just collaborate with AI’s input, instead of being passive consumers.

3). Paradigm three: AI empowers learning, while learners take agency to learn. Learners here are the drivers of knowledge seeking.

The three in a nutshell are, AI directed, AI-supported, and AI empowered. Overall, the trend of AIEd has been to empower learner agency and personalization, enable learners to

reflect on learning and inform AI systems to adapt accordingly, leading to the iterative development of learner-centered, data-driven, personalized learning.

According to another study (Piper 2019), the integration of artificial intelligence (AI) in communication education has the potential to transform the way students learn and interact with each other and with instructors. Piper's research on AI in the classroom highlights the ways in which AI-powered tools can enhance students' writing skills, argumentation strategies, and critical thinking abilities (Piper 2019).

Piper's work also explores the potential risks and challenges associated with the use of AI in communication education, including the potential for AI to reinforce existing biases and inequalities (Piper 2019). Moreover, Piper's research emphasizes the need for educators to develop new pedagogical approaches that take into account the capabilities and limitations of AI-powered tools, and to critically evaluate the impact of AI on students' learning outcomes and educational experiences (Piper 2019).

As for student use and the trend so far, this study sought to survey some undergraduates as to how they use AI to pursue educational needs and tasks on campus. 100 randomly selected students from four levels of study using stratified sampling (25 students per level of study) were asked to fill out a questionnaire. The questionnaire sought to find out whether they use AI, and if yes, how and for what purposes.

## Theoretical Framework

**Social Learning Theory:** Social Learning Theory (SLT) proposes that individuals learn new behaviors, attitudes, and knowledge by observing and imitating others (Bandura, 1977). This theory emphasizes the role of observation, imitation, and reinforcement in learning.

Observation involves paying attention to others' behavior and its consequences. Imitation occurs when individuals replicate the observed behavior. Reinforcement, either positive or negative, influences the likelihood of repeating the behavior. Observers learn by witnessing the outcomes of others' actions, and adjusting their own behavior accordingly.

SLT has four key components: attention, retention, reproduction, and motivation. Attention refers to the observer's focus on the model's behavior. Retention involves remembering the observed behavior. Reproduction entails imitating the behavior. Motivation drives the observer to repeat the behavior, influenced by reinforcement and personal factors.

SLT has been applied to various contexts, including education, psychology, and communication. In education, SLT informs teaching methods, such as modeling and demonstration. In psychology, SLT explains personality development and behavioral change. In communication, SLT examines how individuals learn communication skills and behaviors by observing others.

**Uses and Gratification Theory:** Uses and Gratification Theory (UGT) is a communication theory that explains why individuals use media to satisfy their needs (Katz, Blumer, and Gurevitch 1974). This theory posits that individuals actively seek out media to fulfill their social and psychological needs and that media use is a deliberate and goal-oriented behavior.

The key components of UGT include needs, goals, media, and gratifications. Needs refer to the social and psychological needs that drive media use, such as entertainment, information, social interaction, and identity formation. Goals are specific objectives that individuals aim to achieve through media use, such as relaxation, learning, or social connection. Media refers to the communication devices people use, i.e., channels and platforms that provide relevant content like television, social media, or newspapers. Gratifications are the satisfaction or benefits derived from such use.

The process of UGT involves individuals identifying their needs and goals, selecting media that align with their needs and goals using the media to achieve their goals, and evaluating the gratifications derived from media use. UGT has been applied to various media,

including television (Katz et al. 1974), radio (Rubin and Perse 1987), and social media (Kaplan and Haenlein 2010). This theory provides a framework for understanding why individuals may use AI to satisfy their needs.

### Data Presentation and Analysis

A survey of 100 mass communication students at a state-owned university in Nigeria, concluded that artificial intelligence is being adopted for use by the students to accomplish tasks. The respondents' statistical identifiers and results from the data are presented below. The respondent's gender classification shows that a significant majority are female. The age distribution however is typical of the undergraduate student body, i.e., young adults.

Table 1. Age of Respondents

| Age          | Frequency  | Percentage |
|--------------|------------|------------|
| 18-25        | 79         | 79         |
| 26-30        | 20         | 20         |
| 31 and above | 1          | 1          |
| <b>Total</b> | <b>100</b> | <b>100</b> |

*Source: Field Survey (2024)*

Table 1. shows the age distribution, where 78% are between the ages of 18-25, while 20 are between the ages of 26-30, representing 20%.

Table 2. Level of Study of Respondents

| Level of Study | Frequency  | Percentage |
|----------------|------------|------------|
| First year     | 25         | 25         |
| Second year    | 25         | 25         |
| Third year     | 25         | 25         |
| Fourth year    | 25         | 25         |
| <b>Total</b>   | <b>100</b> | <b>100</b> |

*Source: Field Survey (2024)*

Table 2 shows an equal representation of all four levels of study, 25 respondents, were selected for the survey, (First to Fourth year). Each level represents 25% of the entire number of respondents.

Table 3. Respondents' views on the extent to which AI-driven personalization algorithms are beneficial to their media consumption habits

| Category             | Frequency  | Percentage   |
|----------------------|------------|--------------|
| Very Detrimental     | 9          | 9.0          |
| Somewhat Detrimental | 10         | 10.0         |
| Neutral              | 17         | 17.0         |
| Somewhat Beneficial  | 42         | 42.0         |
| Very Beneficial      | 22         | 22.0         |
| <b>Total</b>         | <b>100</b> | <b>100.0</b> |

*Source: Field Survey (2024)*

Table 3 above shows that respondents overwhelmingly view AI-driven personalization algorithms as beneficial to their media consumption habits. 64% find them somewhat, or very beneficial. 19%

of respondents consider them detrimental, while 17% remain neutral. This is consistent with the current debate surrounding personalized algorithms. The percentage of agreement and disagreement does differ, however, from one set of students in a particular surrounding versus another.

Table 4. Respondents' views on how frequently they use AI-powered tools for media production tasks

| Category      | Frequency  | Percentage   |
|---------------|------------|--------------|
| Never         | 2          | 2.0          |
| Rarely        | 20         | 20.0         |
| Occasionally  | 20         | 20.0         |
| Frequently    | 42         | 42.0         |
| Almost Always | 16         | 16.0         |
| <b>Total</b>  | <b>100</b> | <b>100.0</b> |

*Source: Field Survey (2024)*

Table 4 demonstrates that AI-powered tools are extensively used in media production, with 58% of respondents utilizing them frequently or almost always. Moderate usage (20%) and limited usage (22%) are also present. This indicates widespread adoption in the usage of AI-powered tools for media production tasks by the students.

Table 5. Respondents' views on frequently of AI-powered tools for educational tasks

| Category      | Frequency  | Percentage   |
|---------------|------------|--------------|
| Never         | 4          | 4.0          |
| Rarely        | 14         | 14.0         |
| Occasionally  | 17         | 17.0         |
| Frequently    | 47         | 47.0         |
| Almost Always | 18         | 18.0         |
| <b>Total</b>  | <b>100</b> | <b>100.0</b> |

*Source: Field Survey (2024)*

Table 5 reveals one of the focuses of the study, AI used to perform educational tasks. A significant percentage of respondents (65%) frequently or almost always use AI-powered tools for educational tasks; 17% use them occasionally, and 18% rarely or never. This indicates the respondents' widespread adoption of AI in education.

Table 6. Respondents' views on their proficiency in the use of AI-driven tools for educational tasks

| Category     | Frequency  | Percentage   |
|--------------|------------|--------------|
| Beginner     | 19         | 19.0         |
| Intermediate | 20         | 20.0         |
| Advanced     | 22         | 22.0         |
| Proficient   | 26         | 26.0         |
| Expert       | 13         | 13.0         |
| <b>Total</b> | <b>100</b> | <b>100.0</b> |

*Source: Field Survey (2024)*

Table 6 demonstrates that respondents exhibit diverse self-assessed proficiency levels with AI-driven educational tools, ranging from beginner (19%) to expert (13%). (68%) of the respondents possess intermediate to proficient skills, indicating moderate expertise.

## Discussion of findings

The survey of 100 students provides a comprehensive examination of the impact of Artificial Intelligence (AI) on students in the Faculty of Communication and Media Studies at Kaduna State University (KASU), shedding light on the potential transformative force of AI across various facets of their educational experience. Through a survey research design, utilizing questionnaires administered to 100 randomly sampled students, the study reveals significant findings on students' awareness, perceived benefits, frequency of utilization, proficiency levels, and perceived barriers to AI integration in communication and media studies education. The survey findings demonstrate AI integration is already in place.

In addition, the survey findings indicate that students possess high awareness, adoption, and utilization of Artificial Intelligence (AI). Respondents demonstrate a high level of AI awareness and use. As to practical application, respondents overwhelmingly view AI-driven personalization algorithms as beneficial to their media consumption habits (64%, Table 3) and extensively use AI-powered tools in media production (58%, Table 4) and educational tasks (65%, Table 5). These findings suggest an already widespread adoption and use of AI in the students' educational tasks. The respondents' self-assessed proficiency levels with AI-driven educational tools reveal a diverse range, from beginner (19%) to expert (13%), with the majority (68%) possessing intermediate to proficient skills (Table 6).

This study in general demonstrates the need to timely examine the criteria for assessing what level and quality of knowledge acquisition by students in higher institutions are required to certify them as holders of Bachelor of Science, Art, or even Master's degree graduates. It may also require us to measure the degree of interjection (incorporation) of AI tools in the learning process allowed. This must be resolved in ways that preserve public trust in the capability of an individual graduate to operate independently of AI tools, especially in life-threatening situations when AI devices fail to be timely employed by their user in integrated situations for one reason or another.

Theoretical backgrounds of Social Learning Theory are relevant and applicable, especially in this age of group learning and group socialization methods brought about by the popular use of social and alternative media platforms. So also Uses & gratification Theory, which suggests that students may have abandoned writing assignments by themselves, engaging in learning situations, and methods, while adopting AI applications to perform such functions for them. In social learning theory, 'observers learn by imitation and witnessing the outcomes of other people's actions,' and then adjust their behavior accordingly. If school administrations do not tackle the issues of potential misuse or outright violation of current policies, and promptly, the consequences as per Social Learning Theory, will see university students adopting AI tools detrimentally; even in situations currently found to undermine the learning processes and educational standards. The three paradigms expounded, and extensively discussed by Ouyang and Pengcheng (2021) should be just a stepping stone for more arguments into the potential uses of AI in educational institutions. Paradigms two and three hold more potential for educational uses. But even then, without clear-cut procedures and policies regarding terms of AI use put in place, it appears to be a slippery slope.

Finally, and in conclusion, it does appear that AI may go the way of other technological innovations still posing challenges because of the failure to timely regulate their uses publicly, and institutionally. It has affected many professions and continues to impact them. This study recommends that Artificial Intelligence's potential and real impact on educators (the university and its professors) should also be conducted as a matter of urgency. Undue and narrow vision commercialization of higher education beyond reason and responsibility holds detrimental consequences for society. And for that reason, it must be argued out and resolved.



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