

**INFLUENCE OF ARTIFICIAL INTELLIGENCE ON ADOLESCENTS' BEHAVIOUR AND ACADEMIC PERFORMANCE IN SECONDARY SCHOOLS DUTSIN-MA, KATSINA STATE****BY****Dr. Steve Olusegun BADA:Department of Educational Psychology and Counselling  
Federal University, Dutsin-Ma, [bdolusegun@gmail.com](mailto:bdolusegun@gmail.com)****Abstract**

*This study examined the influence of Artificial Intelligence on Adolescents' Behaviour and Academic Performance in Secondary Schools Dutsin-ma, Katsina State. This study adopted descriptive survey. The population of the study comprised of 2,776 SS II in all the 9 public senior secondary schools in Dutsin-Ma Local Government, Katsina State. Simple random sampling technique was used to select 5 public senior secondary schools and purposive random sampling technique was used to select 56 SS II who are between 13 to 22 years of age (adolescents) in each of the 5 public senior secondary schools making 280 respondents for this study. Three researcher designed instruments were used for the data collection. Artificial Intelligence Scale (AIS), Adolescents' Behaviour Scale (ABS) and 25 multiple choice questions on English language based SS II Curriculum were subjected to test re-test method and Pearson Moment Correlation Statistics was used to determine the reliability coefficients 0.60, 0.65 and 0.62. The research questions one and two were answered using mean and standard deviation Also, the research hypotheses were tested using Pearson Product Moment Correlation (PPMC) Statistic. The finding revealed that artificial intelligence has no influence on Adolescents' Behaviour, the artificial intelligence has no influence adolescents' Academic Performance, there was no significant relationship between Artificial Intelligence and Adolescents' Behaviour and there was no significant relationship between artificial intelligence and adolescents' Academic Performance. Based on the findings of the study, recommendations were made, such as, there should be adequate provision of artificial intelligence applications to public secondary schools by the state ministry of education, The ministry of education and school authority should ensure to make proper awareness to the public secondary school students on the usage and importance of artificial intelligence for both teaching and learning,*

**Keywords:** *Artificial Intelligence (AI), Adolescents' behaviour, Academic performance*

**Introduction**

The usage of AI in the education structure has been drastically increasing. As opined by Perrotta and Selwyn (2020), the integration has been beneficial for predicting the issues in future and improving the efficiency of the students. The term artificial intelligence can be described as the effect of human intelligence in terms of different software applications that are programmed in such a way that the software applications can think of human beings and can easily copy human action. Artificial intelligence is also associated with the human mind in terms of using a particular way how the human beings think and learn the problem and after that find a way to solve the problem (Chen, 2020.). Artificial intelligence also performs every job like a human being's mind reacts and performs in any kind of problematic situation.

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood. Adolescence is usually associated with the teenage years, but its physical, psychological or cultural expressions may begin earlier and end later. UN defines adolescents as individuals between the age of 10 and 19 years. They have been categorized as early adolescents (10-14 years) and late adolescents (15-19 years).According to UNICEF adolescents contribute 16% of the world's population that is roughly around 1.2 billion adolescents. Musthafa (2015) found that usage of artificial intelligence do not influence adolescents into deviant behaviours but other psycho social factors may be responsible for bad behaviours. Joy (2023) examined the adoption of Artificial Intelligence and students' academic performance in Akwa Ibom State, Nigeria. The findings of the study revealed that Artificial Intelligence is reliable, effectiveand efficient in improving instructional delivery of evaluation courses, evaluation knowledge as well as evaluation competence of evaluation students. Based on the findings of the study, itwas concluded that Artificial Intelligence enhances students' academic performance. It was recommended among others that evaluation lecturers andstudents should have positive attitude towards technology usage, acquire the necessary technological skills and adopt Artificial Intelligence in teaching and learning of evaluationas this would help to improve evaluation students' competence.

Therefore, it as a result of the above gap that this study seeks to investigate the Influence of Artificial Intelligence on Adolescents' Behaviour and Academic Performance in Secondary Schools Dutsin-ma, Katsina State

### **Statement of the Problem**

The problem of the study stems from the significance of achievement because it has an important role in determining the degree of students' understanding of the educational subject. However, the indicators do not reveal an acceptable level of appropriate academic achievement among students of the computer subject at various academic levels. In light of the increased interest for several years concerning the evaluation and achievement among students, educators have directed towards investigating the level of achievement of students in different stages of education. The problem of the study is also seen in the urgent need to improve the methods currently used in teaching computer subjects to raise the level of achievement among students (Bedou, 2017).

With that, the modern approach was to employ modern teaching methods in the educational learning process and invest them to develop higher scientific and intellectual skills among students and increase educational achievement such as the use of applications based on artificial intelligence, in addition to the need to prepare students with skills and experiences that enable them to deal with the data of the times and its challenges through adopting technological innovations and investing their capabilities in the field of education. This matter requires identifying the most important features of e-learning technology and the various programs it contains, as this technology is one of the modern applications of computers and internet networks that require identifying the possibility of using them in educational institutions to achieve the attitudes related to preparing individuals who can deal with the changes of this age (Awamleh, Hamdi, & Surour 2016). It is on this basis that this study finds it necessary to examine the Influence of Artificial Intelligence on Adolescents' Behaviour and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### **Purpose of the Study**

The main purpose of this study is to examine the Influence of Artificial Intelligence on Adolescents' Behaviour and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State. Specifically to:

1. Investigate the influence of Artificial Intelligence on Adolescents' Behaviour in Secondary Schools Dutsin-Ma, Katsina State
2. Find out the influence of Artificial Intelligence on Academic Performance in Secondary Schools Dutsin-Ma, Katsina State
3. Examine the relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State
4. Examine the relationship between Artificial Intelligence and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### **Research Questions**

The following research questions were raised to guide the conduct of this study:

1. What is the influence of Artificial Intelligence on Adolescents' Behaviour in Secondary Schools Dutsin-Ma, Katsina State
2. What is the Influence of Artificial Intelligence on Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### **Research Hypotheses**

The following null hypotheses were formulated and tested in the study.

**Ho<sub>1</sub>:** There is no significant relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State

**Ho<sub>2</sub>:** There is no significant relationship between Artificial Intelligence and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### **Methodology**

This study adopted descriptive survey of correlational research type. This type of study seeks to establish the relationship that exists between two or more variables. The population of the study comprised of 2,776 SS II in all the 9 public senior secondary schools in Dutsin-Ma Local Government, Katsina State. The simple random sampling technique was used to select 5 public senior secondary schools. Purposive random sampling technique was used to select 56 SS II who are between 13 to 22 years of age (adolescents) in each of the 5 public senior secondary schools making 280 respondents for this study. Three researcher designed instruments were used for

the data collection on data in the study. The researcher developed scales were used for data collection. Artificial Intelligence Scale (AIS), Adolescents' Behaviour Scale (ABS) and 25 multiple choice questions on English language based SS II Curriculum. were subjected to test re- test method and Pearson Moment Correlation Statistics was used to determine the reliability coefficients 0.60, 0.65 and 0.62. Each of the three scales has 10 items with 4 points scale ranging from Strongly Disagree (1), to Disagree (2), Agree (3) and Strongly Agree (4). The research questions 1 to 3 were answered using frequency and percentage while 4 and 5 were answered using mean and standard deviation Also, the research hypotheses were tested using Pearson Product Moment Correlation (PPMC) Statistic

## Results

### Answering of Research Questions

**Research Question One:** What is the influence of Artificial Intelligence on Adolescents' Behaviour in Secondary Schools Dutsin-Ma, Katsina State?

**Table 1**

*Mean and standard deviation of influence of Artificial Intelligence on Adolescents' Behaviour*

Variables	N	Mean	SD	Decision
Artificial Intelligence	280	32.03	12.03	Negative
Adolescents' Behaviour	280	19.42	14.20	

Table 1 revealed the influence of Artificial Intelligence on Adolescents' Behaviour in Secondary Schools Dutsin-Ma, Katsina State. It showed that mean score of Artificial Intelligence was (32.03) and Adolescents' Behaviour mean score was (19.42). This means that artificial intelligence has no influence on Adolescents' Behaviour in Secondary Schools Dutsin-Ma, Katsina State

**Research Question Two:** What is the Influence of Artificial Intelligence on Academic Performance in Secondary Schools Dutsin-Ma, Katsina State?

**Table 2**

*Mean and standard deviation of Influence of Artificial Intelligence on Academic Performance*

Variables	N	Mean	SD	Decision
Artificial Intelligence	300	31.16	11.10	Negative
Academic Performance	300	13.09	10.17	

Table 2 revealed the Influence of Artificial Intelligence on Academic Performance in Secondary Schools Dutsin-Ma, Katsina State. It showed that mean score of Artificial Intelligence was (31.16) and Academic Performance mean score was (13.09). This means that artificial intelligence has no Influence on Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### Testing of Hypotheses

**Ho<sub>1</sub>:** There is no relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State

**Table 3**

*Correlation between Artificial Intelligence and Adolescents' Behaviour*

Variables	N	Mean	SD	Df	Cal .r-Value	Critical r-value	Decision
Artificial Intelligence	280	24.45	11.15	278	0.04	0.15	Rejected
Adolescents' Behaviour	280	23.16	10.12				

P<0.05

Table 3 revealed that the calculated r-value is (0.4) is less than the Critical r-value (0.15) at 0.05 level of significance and 278 degree of freedom. Hence, the null hypothesis is rejected. This implies that there was no significant relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State

**Ho<sub>2</sub>** There is no significant relationship between Artificial Intelligence and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

**Table 4**

*Correlation between Artificial Intelligence and Academic Performance*

Variables	N	Mean	SD	Df	Cal .r-Value	Critical r-value	Decision
Artificial Intelligence	280	43.22	18.33	278	0.3	0.19	Rejected
Academic Performance	280	23.26	10.23				

$P < 0.05$

Table 4 revealed that the calculated r-value (0.3) is less than the Critical r-value (0.19) at 0.05 level of significance and 278 degree of freedom. Hence, the null hypothesis is rejected. This implies that there was no significant relationship between Artificial Intelligence and Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

### Summary of finding

This study investigated Influence of Artificial Intelligence on Adolescents' Behaviour and Academic Performance in Secondary Schools Dutsin-ma, Katsina State. Thus, the finding of this study was summarized as follows;

1. The study indicated that artificial intelligence (mean score 32,03)) has no influence on Adolescents' Behaviour (mean score was 19.42) in Secondary Schools Dutsin-Ma, Katsina State
2. The study revealed that artificial intelligence (mean score 31.16)) has no influence adolescents' Academic Performance (mean score was 13.09) in Secondary Schools Dutsin-Ma, Katsina State
3. There was no significant relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State (calculated r-value is 0.4) < the Critical r-value (0.15) at 0.05 level of significance
4. There was no significant relationship between artificial intelligence and adolescents' Academic Performance in Secondary Schools Dutsin-Ma, Katsina State (the calculated r-value 0.3) < the Critical r-value (0.19) at 0.05 level of significance

### Discussions

Research question one indicated that artificial intelligence has no influence on Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State. The finding of this study corroborates with Yazigi and Faten (2019) who found that the appropriate uses of artificial intelligence (AI) do not encourage deviant behaviours among the learners.

Research question two revealed that artificial intelligence has no influence on adolescents' academic performance in Secondary Schools Dutsin-Ma, Katsina State. The finding of this study agrees with Duraibi, Ohood and Oquaili, Abdulaziz (2017) who found that the uses of artificial intelligence influences and enhances students' retention skills and learning outcome.

The result of hypothesis one revealed that there was no significant relationship between Artificial Intelligence and Adolescents' Behaviour in Secondary Schools in Dutsin-Ma, Katsina State. The finding of this study agrees with Yazigi (2019) found that there was no significant relationship between Artificial Intelligence and Students' deviant behaviours and the moderate uses of artificial intelligence (AI) enhances anti-social behaviours.

The result of hypothesis two showed that there was no significant relationship between artificial intelligence and adolescents' academic performance in Secondary Schools Dutsin-Ma, Katsina State. The finding of this study corroborate with the study carried out by Mujahid (2020) who found that there exist no significant relationship between artificial intelligence and students' learning outcome. It further found that the uses of artificial intelligence and other supportive factors influence and enhances students' performance

## Conclusions

Based on the findings of this study, the followings were the conclusions. The findings of this study concluded that artificial intelligence has no influence on Adolescents' Behaviour and their academic performance. There was no significant relationship between Artificial Intelligence and Adolescents' Behaviour and there was no significant relationship between artificial intelligence and adolescents' Academic Performance in Secondary Schools Dutsin-Ma, Katsina State

## Recommendations

Based on the findings of the study, the following recommendations were made.

1. There should be adequate provision of artificial intelligence applications to public secondary schools by the state ministry of education.
2. The ministry of education and school authority should ensure to make proper awareness to the public secondary school students on the usage and importance of artificial intelligence for both teaching and learning
3. The school authority should ensure that AI usage by the students if provided not abuse in such a way that could affect their behaviours negatively.
4. There should be proper and adequate enlightenment for both teachers and learners on how to use the artificial intelligence to support the academic purpose

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