

# The use of Artificial Intelligence as a Motivational Factor in Enhancing Teachers' Job Performance in Senior Secondary Schools in Ikpoba-Okha Local Government area, EDO State.

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## ABSTRACT

The pace at which teachers are motivated for greater service is deteriorating in secondary schools is alarming. The fall in performance and productivity of the secondary teachers is of great concern to the stakeholders. Therefore, it examines the practical application of AI in lesson delivery, administrative duties, and student's assessments, as well as the challenges faced by educators in integrating these technologies in senior secondary schools, Ikpoba-Okha Local Government Area, Edo State. The survey research design was adopted. In collecting the data for the research, the study made use of simple percentages parameters to draw up the population sample size for the study which was collected from both primary and secondary source. Research questionnaire was designed for the secondary school teachers in Ikpoba-Okha Local Government, Edo state. The finding of the study revealed that there was a positive and significant relationship between artificial intelligence usage as a motivational factor in enhancing teachers assessment/grading of students, virtual teaching and teacher's performance in Government senior secondary schools. Based on the findings, it was recommended among others that Government through training should encourage teachers to utilise AI- Powered assessment and automated grading systems to navigate and adjust the level of difficulty and workload they face in assessing /grading of students in order to improve individual teacher performance.

**Keywords:** Artificial Intelligence, Teacher Performance, Motivational Factor, AI- Powered assessment, Job Performance

## INTRODUCTION

Education is one of the vital tools for emancipating mankind, such that each society puts alot of capital on it to ensure that the entire generations acquires the necessary skills, knowledge and the desired attitudes critical for future survival. However, owing to its value, the extent to which education is measured greatly anchors on examinations scores, yet academic achievement also corresponds to teachers' performance. Thus, Secondary schools are established to educate students to enable them contribute to the economic, political and social cultural well-being of their country. In Ikpoba-Okha Local Government, Edo State, there appears to a hindrance in the realization of objectives of secondary school. An important factor responsible for the non-attainment of the overall purpose of secondary school is due to inadequate motivation of staff.

Secondary schools teachers are different in sex and status. However sufficient efforts are not made by the Government, proprietors and some parents to motivate the secondary schools teachers in Ikpoba-Okha Local Government area to teach the students. Bulya (2022) asserts that: The Government is not left out in making the teachers feel inferior. One of this is economic depression; the first group to bear the brunt is teacher. In the 1989 Budget, the Government had decreed that car refurbishing loan be given to desiring officers. Deserving education officers teaching in secondary schools also filled form but non-benefited from the loan. This game added to the teachers' frustration. Thus, the Nigeria teachers continue to render essential service to the nation without adequate compensation by the Government.

Thus, there is need to motivate teachers in Edo State to enable them teach their students very well. Therefore, the task of a performing teacher is to create a good classroom atmosphere that promotes effective students learning and stimulate their creativity. In view of this great role, effort can be made by the teacher by adopting any positive means to support the process of delivery quality teaching and learning experience. Such effort can be the adoption of technology like Artificial Intelligence (AI). Artificial Intelligence (AI) refers to the stimulation of intelligent processes in human beings by the computer systems. These systems are designed to perform tasks that normally require human intelligence (Joiner, 2018) such as understanding natural language, solving complex problems, learning, and even recognizing visual and auditory patterns (Chintapati, et al., 2024; Nazarpour, et., 2024), it continues to evolve rapidly, offering both promising opportunities and significant challenges in various fields, including education.

An Artificial Intelligence brings benefits and opportunities to education by facilitating virtual teaching, providing instant feedback and improving efficiency in the teaching and learning process for better teacher performance.

Virtual teaching has been described by Turoff (2021) as a web-based environment that allows an individual to participate in live training events without travelling to any other place. It allows students to sit in the comfort of their environment and listen to lectures. Students can participate in the lab exercises; ask questions with the convenience of artificial Intelligence.

Artificial Intelligence provides such advantages and new ways of communicating, interacting, and assessing information for both teachers and students. More so, it creates tutorials and interactive virtual assistance, systems that can answer students' questions, provide additional explanations, and guide students in real-time through the learning process.

It is line with the above discussion that this study seeks to examine the impact of use AI as a motivational factor in enhancing teachers' job performance in senior secondary schools in Ikpoba-Okha Local Government area, Edo state. Madiha (2023) emphasize that AI system usage in educational management has motivated and increased rapidly due to its effectiveness in improving teachers' Job performance in secondary schools; the main purpose and usage of IA is to improvement teachers' performance in terms of assessment/ grading of students and virtual teaching.

Consequently, the overall literatures review heightened the positive impact of artificial intelligence on teachers' performance for effective school management and administration. However, teachers are the driving force to ensure effective utilization of AI in school. Thus, teachers need to have the necessary skills or competencies to perform this task. Hence, this study was carried out to examine the use of artificial intelligence as a motivational factor in enhancing teachers' job performance in senior secondary schools in Ikpoba-Okha Local Government Area, Edo state.

## **Statement of the Problem**

For an effective and functional secondary educational to be achieved there is need for an artificial intelligence system provides benefits for teachers by offering more flexibility about place, time and pace. That offer more ways for interaction and motivation than traditional teaching and learning settings. Therefore, the need to take cognizance of the performance of the inputs (teachers in this context) is very essential. However, in view of the unhealthy government, private proprietors and school administrators attitude towards making much impact to motivate teachers to perform in secondary schools, it could be rightly asserted that delay in payment of teachers' salaries, poor condition of work, lack of job security, non-payment of entertainment allowance and meal subsidy, grant of car loans among others are responsible for the lack of motivation of teachers.

"The teaching profession in Nigeria has lost its glamour, social status and respect due to lack of incentive for the teachers" Thus, the teaching profession has never been a lucrative one since the teachers neither had the social status nor the money. Hence the poor treatment given to teachers in the society has caused immense concern to the stakeholders. However, using technology such AI to enhance their performance and it would eliminate and minimize the challenges mentioned.

## Purpose of the Study

The purposes of this study are:

1. Examine the use of artificial intelligence as a motivational factor in enhancing teachers' job performance in senior secondary schools.
2. Determine the relationship between artificial intelligence usage in virtual teaching and teachers' performance in secondary at Ikpoba-Okha Local Area.

## Research Questions

The following questions are to be investigated:

1. What is the relationship between use of artificial intelligence and teachers' job performance in secondary schools at Ikpoba-Okha local government, Edo state?
2. What extent do the government and private proprietors use AI to motivate teachers to do their jobs?

## Research Hypothesis

In an attempt to carry out the research work, the following null hypotheses were formulated to guide the researcher in the study.

H01: There is no significant relationship between the level of motivation and high level of performance among teachers in secondary schools.

H02: There is no significant relationship between the level of government and private proprietor to motivate teachers to do their job.

## Significance of the Study

The findings of this study will be of immense benefit to secondary school teachers, principals, Heads of Departments, Government, Policy makers, supervisors, Curriculum planners and tertiary institutions if artificial intelligence system fully implemented. In the same view it will be of great help to various Stakeholders, so as to improve on the use of artificial intelligence to motivate and enhance teachers' performance in secondary.

## Scope of the Study

Some schools were selected through random sampling technique in order to examine the use of artificial intelligence as a motivational factor to enhance impact of teachers' job performance in secondary school, Ikpoba-Okha Local Government, Edo State.

## Population of the Study

The population of this study comprises of the secondary teachers in Ikpoba-Okha Local Government Area, which had staff strength of four hundred and thirty eight (438). The breakdown of teacher's Statistics in Ikpoba-Okha Local Government Area:

1. Permanent Teachers = 248
2. EdoSTAR Teachers = 169
3. Community Teachers = 21
4. Total = 438

## Sample and Sampling Design

This involves taking any portion of a population as representative of a whole. Thus, in understanding a research of this nature where the population is relatively large, sampling becomes imperative. In the distribution of

questionnaires, representativeness is a primary objective; Respondents were selected by the use of simple percentage parameter (%). The researcher used thirty per cent (30%) of the entire population, which is a fair representation of the total population of the study to draw up one hundred and thirty one (131) population sample size:

30% of 438

=  $30/100 \times 438$

= 131.4

Approximately 131 sample size.

Therefore, one hundred and thirty one (131) questionnaires were randomly distributed among teachers in the Local Government Area.

### Data Presentation and Analysis

The presentation and analysis of data collected with regard to the use of artificial intelligence to impacts of motivation on productivity and performance of secondary school teachers in Ikpoba-Okha local government area, Edo State. In collecting the data for the research, the study made use of simple percentage parameter to draw up the population sample size for the study.

Research questionnaire was designed for the secondary school teachers in Ikpoba-Okha Local Government Area of Edo State, this was divided into three (3) sections; section A, was on staff Bio-data, section B, was on hypothesis one, section C, was on hypothesis two. The simple random sampling techniques was used, this is because the technique gives equal opportunity to each teachers of secondary schools in Ikpoba-Okha Local Government Area. The method allows every teaching staff irrespective of the grade level to participate in the data collection process.

Questionnaires was administered to these one hundred and thirty one (131) staff, one hundred and twenty six (126) questionnaires were completed, but about six (06) were not properly filled, and so were rejected. In the final analysis, the research used one hundred and twenty (120) of the properly completed questionnaires for data presentation and analysis.

### Answer to Research Questions

#### Research Question 1

What is the relationship between use of artificial intelligence and teachers' job performance in secondary schools at Ikpoba-Okha local government, Edo state?

This question is analysing in the tables 4.1 below:

**Table 1.1:** The simple random sampling techniques, showing the relationship between use of artificial intelligence and teachers' job performance in some secondary schools at Ikpoba-Okha local government Area

| Response | Total     | Total      |
|----------|-----------|------------|
| Grading  | frequency | Percentage |
|          |           | %          |
|          |           |            |
| Yes      | 60        | 50.0       |
| No       | 45        | 37.5       |

|           |     |      |
|-----------|-----|------|
| Undecided | 15  | 12.5 |
| Total     | 120 | 100  |

**Source: Research survey**

### Summary of Analysis

From table 1.1 above, shows that sixty (60) respondent representing (50%) said yes, that teachers matters relate to technology like AI is adequately taken care of by the managements of schools in Ikpoba-Okha Local Government Area of Edo State, while one forty five (45) respondent representing (37.5%) are with the opinion that, the management of secondary schools in Ikpoba-Okha Local Government Area of Edo State does not encourage artificial intelligence to enhance teachers performance and productivity. And fifty (15) Respondent representing (12.5%) were Undecided about the issue.

**Table 1.2: Artificial intelligence Associate with teachers' performance as the motivational strategies employed in the secondary schools**

| Response  | Total     | Total      |
|-----------|-----------|------------|
| Grading   | Frequency | Percentage |
|           |           | %          |
| Yes       | 50        | 41.7       |
| No        | 60        | 50.0       |
| Undecided | 10        | 8.3        |
| Total     | 120       | 100        |

**Source: Research survey**

### Summary of Analysis

Table 1.2 above, shows that, fifty (50) respondent representing (41.7%) agreed that their performance is associated with the use of artificial intelligence as a motivational strategies employed in their school, while sixty (60) respondent representing (50%) disagreed that, their performance is not associated with the use of AI as a motivational strategies employed in the school, while ten (10) respondent representing (8.3%) make no comment about the issue.

### Research Question 2

What extent do the government and private proprietors use AI to motivate teachers to do their jobs?

The question is analysed in Table 2.1 below:

**Table 2.1 the use of AI system as a motivational factor to enhance teaching and learning more than traditional method.**

| Response  | Total     | Total     |
|-----------|-----------|-----------|
| Grading   | frequency | Frequency |
|           |           | %         |
| Yes       | 98        | 81.6      |
| No        | 20        | 16.7      |
| Undecided | 02        | 1.7       |
|           |           |           |
| Total     | 120       | 100       |

**Source: Research survey**

### Summary of the Analysis

From the above table 2.1 it shows that Ninety eight (98) respondent representing (81.6%) agreed that a full implemented AI system will enhance teaching and learning process than the traditional method, while Twenty three (20) respondent representing sixteen point (16.7%) disagreed that AI has not positive effect in teaching and learning than traditional method. And two (2) respondent representing (1.7%) were indifferent about the assertion.

**Table 2.2: Teachers potential fully utilized in the Schools with the use of artificial intelligence**

| Response  | Total     | Total     |
|-----------|-----------|-----------|
| Grading   | frequency | Frequency |
|           |           | %         |
| Yes       | 48        | 40        |
| No        | 60        | 50        |
| Undecided | 12        | 10        |
|           |           |           |
| Total     | 120       | 100       |

**Source: Research survey**

### Summary of Analysis

From table 4.2.2 above it clearly shows that, Forty eight (48) respondent representing (40%) said that their potential is fully utilized with the use of AI system in their schools where they teach, while Sixty (60) respondents representing (50%) said their potential is not fully utilized and Twelve (12) respondent representing (10%) make no comment about the issue.

### Test of Hypothesis

There is no significant relationship between the use of AI as a motivational factor and high level of performance among teachers” in secondary schools in some of Ikpoba-Okha Local Government Area, Edo State.

Thus, in effect to see the relationship between motivation and teachers' performance and productivity with the idea that motivation is the independent variable while performance and productivity is the dependable variables.

**Table 3.1 Observation Frequencies**

| AI Motivation/ performance and productivity                                                               |             |                   |            | Yes |    | No  | Undecided | Total |
|-----------------------------------------------------------------------------------------------------------|-------------|-------------------|------------|-----|----|-----|-----------|-------|
| the relationship between use of artificial intelligence and teachers' job performance                     |             |                   |            | 60  | 45 | 15  |           | 120   |
| AI system Associate                                                                                       | performance | with motivational | strategies | 50  | 60 | 10  |           | 120   |
| the use of AI system as a motivational factor enhance teaching and learning more than traditional method. |             |                   |            | 98  |    | 20  | 02        | 120   |
| teachers potential fully utilized in the Schools with the use of artificial intelligence                  |             |                   |            | 48  |    | 60  | 12        | 120   |
|                                                                                                           |             |                   |            |     |    |     |           |       |
| Total                                                                                                     |             |                   |            | 256 |    | 185 | 39        | 480   |

**Table 3.2  
Expected Frequencies**

| AI Motivation/ performance and productivity                                                          |             |                   |            | Yes   |  | No    | Undecided | Total |
|------------------------------------------------------------------------------------------------------|-------------|-------------------|------------|-------|--|-------|-----------|-------|
| the relationship between use of artificial intelligence and teachers' job performance                |             |                   |            | 64.00 |  | 46.25 | 19.75     | 120   |
| AI system Associate                                                                                  | performance | with motivational | strategies | 64.00 |  | 46.25 | 19.75     | 120   |
| the use of AI system as a motivational factor enhance teaching and learning than traditional method. |             |                   |            | 64.00 |  | 46.25 | 19.75     | 120   |
|                                                                                                      |             |                   |            |       |  |       |           |       |
| teachers potential fully utilized in the Schools with the use of artificial intelligence             |             |                   |            | 64.00 |  | 46.25 | 19.75     | 120   |
|                                                                                                      |             |                   |            |       |  |       |           |       |
| Total                                                                                                |             |                   |            | 256   |  | 185   | 79        | 480   |
|                                                                                                      |             |                   |            |       |  |       |           |       |

**Formula: for Expected Frequency  $R \times C$**

**G**

$$\frac{256 \times 120}{480} = 64.00 \text{ (Yes)}$$

$$\frac{185 \times 120}{480} = 46.25 \text{ (No)}$$

$$\frac{79 \times 120}{480} = 19.75 \text{ (Undecided)}$$

In computing the degree of freedom, using 0.05 or 5 % level of significance therefore  $V = (\text{Row} - 1) (\text{C} - 1)$

$$(3-1) (4-1) = 6$$

### Summary of Analysis

The value of the cut-off point  $X^2$  for Six (6) degree of freedom from chi- square ( $X^2$ ) table 0.05 or 5% level of significance is **12. 592** Therefore, from the computation above,  $X^2$  statistical calculated value of **131.4** is greater than  $X^2$  critical (tabulated value) if **12.592**.

To this end, the null hypothesis ( $H_0$ ) is “rejected” and the alternative hypothesis ( $H_1$ ) is hereby “Accepted” and this has proven that, there is significant relationship between the use of AI system as a motivational factor and high level of performance and productivity “among teachers” in secondary schools in Ikpoba-Okha Local Government Area of Edo State

### CONCLUSIONS

Based on the findings of this study, it was analysed and concluded that there is significant relationship between the use of AI system as a motivational factor and high level of performance and productivity “among teachers” in secondary schools in Ikpoba-Okha Local Government Area of Edo State

### Recommendations

Based on the findings and conclusion of this study, the followings recommendations are offered.

1. School management through training and retraining policy should encourage teachers to familiarize with AI system in order to enhance their performance and productivity.
2. Teachers should not see AI-powered adaptive system as a challenge, but rather as virtual tools that can boot their performance to deliver instructions through virtual means in order for them and students to complete favourably with their counterparts globally.

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