



## PRINCIPALS' LEADERSHIP EXPECTATIONS AND ARTIFICIAL INTELLIGENCE AS PREDICTORS OF PEACEFUL LEARNING ENVIRONMENT IN SECONDARY SCHOOLS IN ENUGU STATE, NIGERIA

**Dr. Ezenwagu Stephen Abuchi**  
sa.ezenwagu@unizik.edu.ng

**Dr. Umeozor Juliana Uzonna**  
julzyiana@yahoo.com

&

**Nathaniel C Umeh**  
nu.umeh@unizik.edu.ng

### **Abstract**

*This study investigated principals' leadership expectations and artificial intelligence as predictors of peaceful learning environment in secondary schools in Enugu State, Nigeria. Two research questions and two hypotheses guided the study. This study adopted a correlational survey design. The population of this study comprised 7,074 teachers in 287 public secondary schools in Enugu State, Nigeria. A sample size of 204 teachers was drawn through multi-stage sampling procedure. The instruments used for data collection were Questionnaire titled: Principals' Leadership Expectations Questionnaire (PLEQ); Artificial Intelligence Questionnaire (AIQ); and Peaceful Learning Environment Questionnaire (PLEQ) developed by the researchers. The instruments were validated and the reliability ascertained using Chronbach alpha statistics, which yielded 0.84 for PLEQ; 0.92 for AIQ; and 0.88 for PLEQ. In analyzing the data, linear regression was used to answer the research questions, while t-test associated with linear regression was used to test the hypotheses at a 0.05 level of significance. The findings revealed that, principals' leadership expectations predict a peaceful learning environment in secondary schools in Abia State to a very high extent. Also, artificial intelligence predict peaceful learning environment in secondary schools in Enugu State to a very high extent. Based on the findings, recommendations were made.*

**Keywords:** *Principals' Leadership Expectations, Artificial Intelligence, Peaceful Learning Environment, Secondary Schools*

### **Introduction**

The principal is an administrative head of secondary school that ensures proper teaching and learning are managed for individual growth and school development. The *principal* as the leader of a secondary school is responsible for managing the administrative practices to enhance sustainable and peaceful learning environment. Principals provide good leadership principles, proper direction of school programmes and effective co-ordination of educational services within the school to promote sustainable and peaceful learning environment (Nwabueze, 2014). According to Nwabueze and Onyekaba (2017), principals are secondary school leaders who control and direct both the academic and administrative activities to sustain peaceful and secured learning environments. Secondary school principals equally have the responsibility for the development of instructional programme, delegation of duties to staff members, general management of school facilities, whole school supervision and evaluation (Edikpa, Nwabueze & Chukwuma, 2018). Principal as a building administrator is responsible for the daily management of the school, students, teachers, facilities, and administrative practices. Kalu



(2016) sees the principal as the executive head of secondary school, a sole administrator that controls and directs the finance, facilities and human skills in the system. Being important staff in the school system, the principal has the overall task of managing the school by ensuring balanced academic programmes, student- teacher progress and proper supervision of work as well as effective leadership.

Leadership is a systematic process of guiding and managing a group by a leader for enhanced productivity and societal progress. Leaders can be seen in a families, communities, local governments, states, nations, or even in educational institutions (Nakpodia, 2012). Educational leaders play a pivotal role in enhancing the climate, attitude and reputation of their schools through quality academic and administrative activities for improved productivity. They are the cornerstone on which learning communities function and grow, and as well become effective incubators of learning (places where students are not only educated but challenged, nurtured and encouraged). Ukala, Nwabueze and Madumere-Obike (2018) define leadership in education as the systematic process of influencing the attitude, behaviour, work effort of staff and students by administrative heads for the achievement of institutional goals and objectives. Okeke (2006) defines leadership as an act or practice of guiding, supporting, facilitating, initiating, giving feedback, suggesting, protecting, commanding, linking, interpreting actions and modeling.

Leadership is equally the process of influencing the activities of a group of people by a leader who puts more efforts towards the achievement of organizational goals (Nworgu, 2010). It involves a force that initiates actions in people and the leader for organizational productivity (Nwadiani, 2011). It could be described as the ability to get things done with the assistance and cooperation of other people within the organization (Aghenta, 2001). Leadership expectations of principals provide key attributes and competences expected of educational managers and administrators to perform their roles in a peaceful learning environment (Ukala, Nwabueze & Madumere-Obike, 2018). Also, the authors indicated that the needed leadership expectations of administrative heads include: clarity of leadership functions, keeping leadership commitments, being consistent in decision making processes, being honest, according respects to other staff members, and using praise as motivational technique facilitate sustainable and peaceful learning environment. Others include managing time appropriately for academic/administrative building, being constructive in sending feedbacks, making effective use of educational resources for institutional development, having good communication skills, serving as an administrative resource, and being visible or accessible for peaceful learning and institutional sustainability (Ukaigwe, Nwabueze & Nwokedi, 2019). These expectations, when properly handled by secondary school principals strengthen their skills and abilities for effective functional performance to sustain peaceful learning environments.

The leadership expectations of principals may also include: principals communication skills, problem-solving skills, decision making skills, and supervisory skills. Communication skill is a leadership skill expected of principal to communicate information properly and clearly to sustain a peaceful learning environment. The principal of a school is expected to possess communication skill to influence the staff improve on instructional transfer and sustain a peaceful learning environment. Communication skill entails acquiring the expected skill of speaking appropriately to staff and students while maintaining good eye contact, eloquent speech with tailored language, listening effectively, writing clearly with concise language, being confident, friendly, empathy, use of question, open mindedness and presenting ideas appropriately (Manafa, 2016). Improper use of communication skills by a secondary school principal pose a lot of negative effect on school management, which could lead to the misplacement of educational goals and creates impediment in teaching and learning processes (Nwabueze, Chukwuji & Ugwoezuonu, 2018). Most of the time, improper use of communication skills by a secondary school principal may lead to poor and violent learning environment in secondary schools, which do not support successful academic growth. It also brings about conflicts within the school system (Okechukwu, Nwabueze & Ogbonnaya, 2023). Therefore, principals must be logical in communicating ideas to both the staff and students to sustain a peaceful learning environment and



proffer solutions to problems that may accrue. This implies that secondary school principals with communication skill sustain a peaceful learning environment by solving problems of staff and students within the school.

Problem-solving skill by a principal could be seen as the ability to handle difficult or unexpected situations in a school system to resolve conflicts and sustain a peaceful learning environment. Maciej (2020) views problem-solving skill as a skill consisting of several interrelated abilities including: analytical, collaboration, communication, creativity, decision-making and research abilities that can minimise conflicts and violence to sustain a peaceful learning environment. Hence, problem-solving skill consists of two main components and they include: identifying the problem and deciding on the best solution to sustain a peaceful learning environment (Madumere-Obike, Okeke & Nwabueze, 2014). According to Uche, Nwabueze and Ememe (2009), problem-solving skill among principals enable them to acquire practical skills to manage staff and students and sustain peaceful learning environments. Therefore, problem-solving skill helps to build-up creative and innovative minds among secondary school principals to make proper decisions on ways of sustaining peaceful learning environments.

Decision making skill is expected of every secondary school principal to achieve the set educational goal and objectives through a peaceful learning environment. Decision making creates a room for interaction and gives the principals the confidence to stand firm on the decisions that will influence the learning environment positively. Therefore, principals ought to be wise in making decisions that will help the students to adapt to a peaceful learning environment and ensures that conflicts or disagreement do not affect the performances during instructions (Nwabueze, 2014). Duze (2011) states that, effective and peaceful learning environment can only be achieved when the principal possesses a high level of imagination, initiative, vision and techniques in making decisions concerning the school. Thus, decision making is essential in principal's administrative practices as these will enable proper supervision of teachers' instructional practices in a peaceful learning environment.

However, supervisory skill when acquired by school principals helps to motivate the teachers to perform their duties as expected which will in turn; enhance students' study habits in a peaceful learning environment. David-West and Kaegon (2017) state that principals are expected to be instructional supervisors, motivators, coordinators and above all, instructional leaders to sustain peaceful learning environments for institutional growth and productivity. Principals' supervisory skills are expected to provide effective supervision of instruction services by motivating and stimulating the teachers in order to sustain a peaceful learning environment and improve student's academic achievement. Principals' supervisory skill could be seen as expected leadership key to the improvement of peaceful learning environment in schools to enable students perform well in their academic endeavours. All these leadership expectations, when acquired by secondary school principals would help them to apply and use artificial intelligence in the sustenance of peaceful learning environments.

Artificial intelligence has become a recent study and topic of interest that has raised curiosity in various disciplines of which education is one of the prime spaces of its applications and utilization in sustaining a peaceful learning environment. Artificial intelligence (AI) is described as the systematic process of designing and building of intelligent agents which depend on recognition by the senses from the environment and acts in a way that affects the environment (Aballa, Ojo & Eneh, 2024). Artificial intelligence (AI) is a set of technologies that can enable computers and other information and communication technology devices to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, and make recommendations needed to sustain a peaceful learning environment in secondary schools. Artificial intelligence (AI) could equally be described as an advanced technology that simulates human intelligence processes using machine learning algorithms, neural networks, and natural language processing (NLP) for academic building (AlGhamdi, 2022). AI is the backbone of innovation in modern computing, unlocking value for individuals, businesses, educational institutions and the society.



Artificial intelligence is a field of science concerned with building computers and machines that can reason, learn, and act in such a way that would normally require human intelligence or that involves data whose scale exceeds what humans can analyze. AI is a broad field that encompasses many different disciplines, including computer science, data analytics and statistics, hardware and software engineering, linguistics, neuroscience, and even philosophy and psychology (Aldosari, 2020). On an operational level for educational use and sustaining a peaceful learning environment, AI is a set of technologies that are based primarily on machine learning and deep learning, used for data analytics, predictions and forecasting, object categorization, natural language processing, recommendations, intelligent data retrieval, and leadership practices. Artificial intelligence (AI) refers to the ability of machines and computer systems to perform tasks that would normally require human intelligence, such as voice recognition, natural language processing, decision-making, and machine learning as well as sustain a peaceful learning environment. AI also utilizes complex algorithms and mathematical models to analyze large amounts of data and extract patterns, enabling machines to learn and improve over time (Chiu & Chai, 2020). Virtual assistants and chatbots can provide instant and accurate information on any topic, enabling students to access updated knowledge in real time. AI can also analyze and organize large amounts of data to create interactive and personalized learning materials, enriching the educational experience. As AI-driven educational technologies continue to evolve, there is growing apprehension about the potential displacement of educators in sustaining peaceful learning environment. While AI can automate certain administrative tasks and offer supplemental support, it cannot replace the invaluable role of teachers in fostering critical thinking, emotional intelligence, and creativity in students, as well as sustaining peaceful learning environment.

Learning environment includes the classrooms, libraries, technical workshops, laboratories, teachers' quality, school management, teaching methods, peers, etc., which are the variables that may affect students' academic achievement. Hence, the learning environment remains an important area that must be well managed to enhance students' academic performance. Learning environment encompasses learning resources and technology, means of teaching, modes of learning, and connections to societal and global contexts (Balog, 2018). Learning environments vary from classroom to classroom and context to context each with unique elements (Orlu, 2013). However, principals provide teachers and students with the needed administrative tools to effectively and efficiently perform and sustain a peaceful learning environment. It is the duty of secondary school principals to bring about the needed change in people through the sustenance of peaceful learning environment. Nwabueze and Onyekaba (2017) define sustainable peaceful learning environment as educational environment that contribute to a continually evolving healthy learning ecosystem in which knowledge is co-created and shared in a community. Sustainable peaceful learning environment refers to the social, academic and emotional contexts of a school that can boost the academic performance of students for global competitiveness. A sustainable peaceful school environment is a product of collective effort between the school, community and government (Ofojebe, 2014). Principles of a peaceful learning environment include love, respect, honesty, courage, empathy, compassion, and kindness (Nwabueze, 2014). Hence, in order to have any kind of school success, students and teachers must first have a peaceful teaching and learning environment for instructional competitiveness (Yvonne, 2018).

A sustainable peaceful learning environment is a warm and welcoming environment where conflict resolution is fostered to improve students' academic activities. A sustainable peaceful learning environment is very necessary and essential in educational investment for academic improvement, sustainability and productivity. A clear link between a peaceful learning environment and educational performance include: production of graduates with qualitative education, sharpened attitudes among students and teachers, and future outcomes of individuals and society as a whole (Nwabueze & Onyekaba, 2017). Sustainable peaceful learning environment attract positive effect on both the attitudes and achievement of students, and as well enhances school effectiveness (Ofojebe, 2014). Sustainable peaceful learning environment created through positive relationships among staff, students and



community members as well as maintaining safety and participatory learning programme (Cohen, 2010). An unhealthy learning environment could be seen as one in which rules are unclear or arbitrary, bullying is accepted if not condoned, and teacher attitudes are indifferent, hostility or unnecessarily punitive for high absenteeism, misbehaviour and interpersonal aggression among staff and students (Madumere-Obike, Ukala & Nwabueze, 2013). This implies that, a peaceful school climate is a key ingredient in academic success and institutional development. Sustainable peaceful learning environment does not only engage students academically, but strongly associated with a range of positive health and behavioural outcomes. Hence, peaceful learning environment could positively or negatively influence teaching and learning effectiveness depending on the management principles involved (Glantz, 2008).

### **Statement of the Problem**

The learning environments of secondary schools in Enugu State, Nigeria seem not to be peaceful as expected due to poor leadership skills and non-application of artificial intelligence, communal clashes between the schools and host communities, as well as regular fire outbreaks as a result of hunting practices taking place within the school environments. The environments are very bushy and have become hideouts for wild animals and bad gangs, which have made the school environment very unhealthy, inharmonious, agitated, turbulent and non-peaceful for the application of artificial intelligence and leadership practices. This had made it impossible for secondary school principals to exercise their leadership practice in sustaining a peaceful learning environment, as well as provide and maintain technology devices such as artificial intelligence. Some Local Government Areas in the state are faced with religious violence, intra-communal and inter-communal clashes, armed robbery, series of assassinations, kidnappings, encroachments into the land belonging to the institutions, as well as attacking the institutions with weapons and other deadly tools. All these ill human practices in the school environments have negatively kept the learning environment un-peaceful. However, when secondary school learning environments are not peaceful, students become very uncomfortable in their learning attitudes, confused in their learning habits, unsupported in the acquisition of knowledge, and become afraid to manage their learning abilities, which eventually affect their general academic performance negatively.

### **Purpose of the Study**

The aim of this study is to investigate principals' leadership expectations and artificial intelligence as predictors of peaceful learning environment in secondary schools in Enugu State, Nigeria. Specifically, the objectives of the study are to:

1. find out the predictive power of principals' leadership expectations on peaceful learning environment in secondary schools; and
2. ascertain the predictive power of artificial intelligence on peaceful learning environment in secondary schools.

### **Research Questions**

The following research questions guided the study.

1. What is the predictive power of principals' leadership expectations on peaceful learning environment in secondary schools?
2. What is the predictive power of artificial intelligence on peaceful learning environment in secondary schools?

### **Hypotheses**

The following hypotheses were tested at a 0.05 level of significance.

1. There is no significant predictive power of principals' leadership expectations on peaceful



- learning environment in secondary schools.
- There is no significant predictive power of artificial intelligence on peaceful learning environment in secondary schools.

### Methodology

This study adopted a correlational survey design. The study was carried out in Enugu State, Nigeria. The population of this study comprised 7,074 teachers in 287 public secondary schools in Enugu State, Nigeria. A sample size of 240 teachers was drawn through multi-stage sampling procedure. Firstly, stratified random sampling technique was used to draw 80 secondary schools in the state representing 28% of the entire schools. Secondly, three (3) teachers were drawn from each of the selected schools using stratified random sampling technique. The instruments used for data collection were Questionnaire titled: Principals' Leadership Expectations Questionnaire (PLEQ); Artificial Intelligence Questionnaire (AIQ); and Peaceful Learning Environment Questionnaire (PLEQ) developed by the researchers. The items of the instruments were structured using the Modified Likart four-point rating scale of: Strongly Agree, Agree, Disagree, and Strongly Disagree. The instruments were validated by three experts in the Faculty of Education, Nnamdi Azikiwe University, Awka. The reliability of the instruments were ascertained using Chronbach alpha statistics, which yielded reliability indexes of 0.84 for PLEQ; 0.92 for AIQ; and 0.88 for PLEQ. In analyzing the data, linear regression was used to answer the research questions, while t-test associated with linear regression was used to test the hypotheses at a 0.05 level of significance.

### Results

**Research Question One:** What is the predictive power of principals' leadership expectations on peaceful learning environment in secondary schools?

**Table 1:** Linear regression analysis on the predictive power of principals' leadership expectations on peaceful learning environment in secondary schools

Model	R	R Square	Adjusted Square (R <sup>2</sup> )	R Standard Error of the Estimate	Decision
1	.935 <sup>a</sup>	.874	.873	2.85340	Very High Predictive Power

**Predictors: (Constant),** principals' leadership expectations

**Note:** R = regression, 0.001-0.249 = Very Low Predictive Power; 0.250-0.499 = Low Predictive Power; 0.500-0.749 = High Predictive Power; 0.750-1.00 = Very High Predictive Power

Table 1 revealed that there is a very-high predictive power of principals' leadership expectations on peaceful learning environment in secondary schools. The regression coefficient (R) is 0.935 while the adjusted regression square R<sup>2</sup> is given as 0.873. It is then predicted that, the regression coefficient of 0.935 had a coefficient of determination of 0.873, which indicated that, there is a very high predictive power of principals' leadership expectations on peaceful learning environment in secondary schools. However, principals leadership expectations such as clarity of leadership functions, keeping leadership commitments, being consistent in decision making processes, being honest, according respects to other staff members, using praise as motivational technique, managing time appropriately for academic/administrative building, being constructive in sending feedbacks, making effective use of educational resources for institutional development, having good communication skills, serving as an administrative resource, and being visible/accessible to staff and students sustain peaceful learning environment. Hence, the coefficient of determination of 0.87 indicates that 87% variation on principals' leadership expectations could lead to peaceful learning environment in secondary schools. This means



that, the predictive power of principals' leadership expectations in sustaining peaceful learning environment in secondary schools in South East, Nigeria is 87%.

**Hypothesis One:** There is no significant predictive power of principals' leadership expectations on peaceful learning environment in secondary schools.

**Table 2:** t-test associated with linear regression on the predictive power of principals' leadership expectations on sustaining peaceful learning environment in secondary schools

Coefficients <sup>a</sup>		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.122	.627		3.384	.005
	principals' leadership expectations	.935	.019	.935	49.900	.001

a. **Dependent Variable:** peaceful learning environment

t = t-test score

Table 2 revealed that, the t-test value associated with linear regression is 49.90. The analysis showed that, the t-value of 49.90 is greater than the p-value of 3.38 indicating that the hypothesis is significant with a significant value of 0.01, which is less than the alpha value of 0.05. Hence, the null hypothesis was rejected. Therefore, there is a significant predictive power of principals' leadership expectations on peaceful learning environment in secondary schools in South East, Nigeria.

**Research question Two:** What is the predictive power of artificial intelligence on peaceful learning environment in secondary schools?

**Table 3:** Linear regression analysis on the predictive power of artificial intelligence on peaceful learning environment in secondary schools

Model	R	R Square	Adjusted Square (R <sup>2</sup> )	Standard Error of the Estimate	Decision
1	.891 <sup>a</sup>	.794	.793	4.20196	Very High Predictive Power

**Predictors:** (Constant), artificial intelligence

Table 3 revealed that, there is a very-high predictive power of artificial intelligence on peaceful learning environment in secondary schools in Enugu State, Nigeria. The regression coefficient (R) is 0.891 while the adjusted regression square R<sup>2</sup> is given as 0.793. It is then predicted that, the regression coefficient of 0.891 had a coefficient of determination of 0.793, which indicated that, there is a very high predictive power of artificial intelligence on peaceful learning environment in secondary schools. However, the application of artificial intelligence on peaceful learning environment helps in planning academic activities, management of school resources, organizing academic and capacity building programmes, coordinating school programmes, directing the subjects towards goal achievement, evaluating the academic and administrative activities, building communication network within the school, supervising every activity carried out in the school. Hence, the coefficient of determination of 0.79 indicates that 79% variation on the application of artificial intelligence would sustain a peaceful



learning environment. This means that, the predictive power of artificial intelligence on peaceful learning environment in secondary schools in South East, Nigeria is 79%.

**Hypothesis Two:** There is no significant predictive power of artificial intelligence on peaceful learning environment in secondary schools.

**Table 4:** t-test associated with linear regression on the predictive power of artificial intelligence on peaceful learning environment in secondary schools

Coefficients <sup>a</sup>		Unstandardized Coefficients		Standardized t	Sig.
Model		B	Std. Error	Beta	
1	(Constant)	12.563	.876		14.335 .005
	Artificial intelligence	.675	.028	.891	24.547 .000

a. Dependent Variable: peaceful learning environment

Table 4 revealed that, the t-test value associated with linear regression is 24.55. The analysis showed that, the t-value of 24.55 is greater than the p-value of 14.34 indicating that the hypothesis is significant with a p-value of 0.00, which is less than the alpha value of 0.05. Hence, the null hypothesis was rejected. Therefore, there is a significant predictive power of artificial intelligence on peaceful learning environment in secondary schools in Enugu State, Nigeria.

### Discussion of Findings

The findings of the study revealed that, there is a very-high predictive power of principals' leadership expectations on sustaining peaceful learning environment in secondary schools in South East, Nigeria. It is predicted that, principals leadership expectations such as clarity of leadership functions, keeping leadership commitments, being consistent in decision making processes, being honest, according respects to other staff members, using praise as motivational technique, managing time appropriately for academic/administrative building, being constructive in sending feedbacks, making effective use of educational resources for institutional development, having good communication skills, serving as an administrative resource, and being visible/accessible to staff and students sustain peaceful learning environment. Hence, the coefficient of determination indicated that, 87% variation on principals' leadership expectations could lead to sustainable peaceful learning environment in secondary schools. The test of hypothesis one showed that, there is a significant predictive power of principals' leadership expectations on sustaining peaceful learning environment in secondary schools in South East, Nigeria. In line with the findings, Adegbemile (2011) states that, the best leadership practices expected of principals include: good communication network, decision making capabilities, motivating spirit, as well as proper supervisory abilities; and these help to sustain a peaceful learning environment. Also, Ukala, Nwabueze and Madumere-Obike (2018) are of the opinion that, leadership expectations are those qualities expected of a leader for proper achievement of institutional set goals in a peaceful learning environment. Leadership expectations provide key attributes and competences expected of educational managers and administrators to perform their roles in a peaceful learning environment.

The findings revealed that, there is a very high predictive power of artificial intelligence on peaceful learning environment in secondary schools. However, the application of artificial intelligence on peaceful learning environment helps in planning academic activities, management of school resources, organizing academic and capacity building programmes, coordinating school programmes, directing the subjects towards goal achievement, evaluating the academic and administrative activities, building communication network within the school, supervising every activity carried out in the school. The test of hypothesis two had shown that, there is a significant predictive power of artificial intelligence



on peaceful learning environment in secondary schools in Enugu State, Nigeria. In line with the findings, Aballa, Ojo and Eneh (2024) had shown that, artificial intelligence (AI) is the systematic process of designing and building of intelligent agents, which depend on recognition by the senses from the environment and acts in a way that affects the environment. AlGhamdi (2022) had equally shown that artificial intelligence (AI) is an advanced technology that simulates human intelligence processes using machine learning algorithms, neural networks, and natural language processing (NLP) for academic building.

## Conclusion

The study had shown that principals' leadership expectations can be carried out proper with the application and utilization of artificial intelligence to improve and sustain peaceful learning environment in secondary schools in Enugu State, Nigeria. This is because, artificial intelligence (AI) enable computers and other information and communication technology devices to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, perform the leadership practices and make recommendations needed to sustain a peaceful learning environment in secondary schools.

## Recommendations

Based on the findings, the following recommendations were made.

1. Principals of secondary schools should properly handle the leadership expected of them to sustain peaceful learning environment.
2. Government should provide and promote the application and utilization of artificial intelligence by principals in leadership practices to sustain a peaceful learning environment.

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