

Material and human resources management in education in Nigeria and its impact on students' academic performance in secondary schools, in Ebonyi state through artificial intelligence and digital connectivity for the transformation of education.

* UDUMA EMMANUEL OGBONNIA PH.D, DR. OKORO MKPUMA AND DR. JOSEPH NWEKE

*Department of Primary Education, Ebonyi state College of Education, Ikwo

Abstract: *The integration of Artificial Intelligence (AI) and digital connectivity can revolutionize material and human resources management in secondary schools. The study focused on human and material resources management in education in Nigeria and its impact on students' academic performance in Secondary Schools, in Ebonyi State, Nigeria. Subjects for the study were two hundred (200) students and hundred (100) teachers randomly selected from five secondary schools in Afikpo, Ohozara and Ezza South Local Government Areas of Ebonyi State. Questionnaire was used to collect relevant data for the study. Pearson Product Moment Correlation was used to analyse the formulated hypotheses. The findings of the study revealed that there was significant positive relationship between human resources management and students' academic performance ($r=.814$; $p<.05$). Also, significant relationship exist between material resources management and students' academic performance ($r=.629$; $p<.05$). The implication is that effective material resource management may bring about improvement in student's academic performance. While it was recommended that effective practice of both human and material resources is to be well implemented for effective performance of students at any level of educational system in Nigeria*

Keywords: *Human resources, material resources, academic performance.*

Introduction

The integration of Artificial Intelligence (AI) and digital connectivity can revolutionize material and human resources management in secondary schools. This study explores the potential benefits and challenges of implementing AI powered digital solutions in secondary schools in Ebonyi State.

Education is a programme designed to provide learners with a comprehensive set of competencies, encompassing knowledge, skills, work values, and

essential life skills. Nevertheless, it ensures that students genuinely excel in both knowledge and skills, while ensuring that the acquired knowledge as a result of AI and digital connectivity leads to the transformation of Education. The knowledge gained through effective material and human resources management are transferred back to the society for spontaneous development (Charity and Randy, 2024).

One of the most efficient tools for comprehending conditions, analyzing conditions, and getting

involved for the sake of development, advancement, correction, and sustainability is commonly acknowledged and considered to be education as viewed globally. Self awareness and the development of one's abilities, aptitude, values, and standards in line with societal norms are brought about by education due to technological advancement which brought in Ai and digital connectivity. (Adewole, 2023).

In fact, the belief in the effectiveness of education has resulted in increasing commitment of government and various groups to the establishment of educational institution and over excited increase of school enrolment at the various level of Nigeria educational system. It does enables individual to contribute economically [socially and morally] to the families, communities, and the nation at large (Tan, 2021).

Potential benefits from the introduction of Ai and digital connectivity for material and human resources management includes efficient resource allocation, streamlined administrative tasks, improved decision making and enhanced transparency and accountability. The term Human Resource Management (HRM) is the foundation for assisting people in improving their skills, knowledge, and talents, which develops the performance of an organization especially institution of learning. HRM comprises on-boarding new staff, creating opportunities to learn new skills, disseminating resources that are relevant to the staff's job, and any other evolving creativity (Panasonic, 2022).

Orientation programs and retention are: Human and material resources management as correlates of students' academic performance in secondary schools, Ebonyi State, Nigeria dependent on this collection of HR systems. School staff cannot perfectly operate without appropriate training. School staff becomes stale and static if they do not keep improving their personal and professional abilities. People generally at work are endowed with a range of abilities, talents and attitudes, influence productivity, quality and profitability. People set overall strategies and goals, design work systems, produce goods and services, monitor quantity, allocate financial resources, and market the products and services.

Individuals, therefore, become human resources by virtue of the roles they assume in the work organization. Employment roles are defined and described in a manner designed to maximize particular employees' contributions to achieving organizational objectives. Without a doubt, a nation's growth is fundamentally determined by the qualitative and quantitative of the human resources. It is the existing human resources that organize and stimulate other resources (material resource) for sociological, political, economic, scientific and technological development. The development of any society is, therefore dependent on the development of its human resource. Non-human resources; physical material, and financial resources are to be mobilized by the available human resource, to accomplish set organization's goal or a nation's human resource is a

major determinant of the success or level of development of such an organization or nation. The importance of human resource within schools and outward development can never be over emphasized. It guarantees that individual and institutional needs are met. Every functional organizational (school) progress depends on the accessibility and effective operation of both people and material resources. With the fast growth of the educational sector, as well as predicted increases in class sizes and a desire for education, management must focus and concentrate on the functionality and use of human resources in a given educational sector. If this does not happen, the school's mission of establishing a teaching learning process will be undermined (Pagán, 2021).

The human resources differ from other resources the employer uses, partly because individuals are endowed with varying levels of ability (including aptitudes, skills and knowledge), with personality traits, gender, role perception and differences in experience, and partly as a result of differences in motivation and commitment. In other words, employees differ from other resources because of their ability to evaluate and to question management's actions and their commitment and cooperation always has to be won. In addition, employees have the capacity to form groups and trade unions to defend or further their economic interest.

Human resource is often referred to as personnel, staff or workers. Materials resources on the other hand are the component available within an

organization that makes up the equipment, facilities and instrument used in achieving organizational goals. Ogundejiet al. (2024) emphasize that material resources in education can significantly impact students' academic achievement if properly used and applied. It is important to note that none of the above stated types of resources could be neglected or undermined.

Resources from education perspectives connote all things in the school that may be used to help and facilitate teaching or learning. Broadly identified, they include human, financial, physical and material resources. Educational resources are the provisions that are made available directly or indirectly to the educational sector in order to facilitate the transmission of skills, abilities competence, aptitudes and knowledge through Ai and digitized connectivity. In another words, they are the inputs, used for the purpose of accomplishing educational goals and objectives. These resources are vital factors that make a system functional. It is the provision of resources into system and the effective utilization of such resources that determine the success or achievement of the set goals of the system. So, resources are very important in the development of qualitative education. This success depends on the manpower, money and material attributed to it. The human resources of a secondary school like any other formal organizations irrespective of type and size consist of individuals engaged in any

of the school's activities regardless of their levels of placement. They are the academic and the non-academic staff and the students who are necessary ingredients in the achievements of goals and objectives of the schools. This indicates that people are indispensable to any organization and it remains indisputable that no school or organization exists to achieve optimum desired result with human resources management. This of course depends on how well managed the staff are, relative to other resources in the production process.

As corroborative evidence, Katangchol et al. (2023) found that the core responsibilities of human resource management consist of human resource planning, recruitment and selection, training and development, performance appraisal, and benefits and compensation. Therefore, human resource management is the most important activity, which can help the school to gain qualified teachers to work for the progress of the school. It has been used as organizational (school) strategy in managing human knowledge, skill and talent to work for increasing school performance. This includes training and developing unqualified teachers with necessary skill to work for school success (Lee et al; 2024) Essentially, it is to bring together and develop into effective organization the workers and having regards for their well being to enable them contribute efficiently and effectively to the success of the school as laudable

as the aim it is less being positively pursued in our secondary schools.

Before, a planned curriculum can be effectively implemented; some factors must be put in place. Some of these affect the teachers directly while some are beyond them. Teacher is a person who impacts knowledge for living as a profession. The strong influence of teacher's classroom management on student academic achievement cannot be over-emphasized because the kind of teacher and his class room management that is prevalent in any school setting determines the overall achievement of the students. Alliou and Mourdi (2023) asserted that quality education when fully implemented will have direct impact on students' performance which emanated from the performance of the teaching staff. However, the ultimate goal of human resource in the school is to illuminate pathways toward an inclusive, equitable, and quality education for all (Schusler et al 2021). This pathway including changes to curricula, shifts in pedagogical approaches, and efforts to enhance teacher training initiatives aiming at expanding access to education, particularly at the secondary for optimum economic productivity (Barnes, 2024) Human and material resources are both most essential element in ensuring development and growth of any establishment especially education sector. In education, the human resources which represents the administrators and the teaching staff are the required life wire of any educational setting

because they plan, direct, organize, control, formulate and implement the policies with the use of other available resources within their reach to achieve the set goals and objectives of educational industry (Somba and Otieno 2022).

It is observed that most advanced countries in the world do not joke with their human resources because they assert that when the human factor is well trained all other resources with his reach will be meaningfully managed. This in turn will promote industrial and economic growth especially in education sector. Numerous researchers have not yet completely conceptualized the entire idea of human resource. Given that it is a novel idea still in the conceptualization phase, they have described the term from their perspective.

Additionally, numerous intriguing projects are being conducted by experts in HR to support staff learning and professional growth (International Labour Organization et al., 2021). Without effective human resource management even before the advent of Ai and digital connectivity, no organization can run its business to meet up with its set goals and objectives. Therefore, each organization focuses on recruiting and selecting knowledgeable, skillful and competent employees and pay them with fair benefits and compensation to create their organizational commitment so that they work to increase organizational performance. (Lee, 2023). The presence of good human and instructional resources significantly impacts

student performance and is closely related to the attitudes, interests, and motivations of both students and teachers. Hence, the inability to compromise student performance. (Charity and Randy 2024)

To buttress this Ogundeji et al; (2024) asserted that there is positive effect of instructional materials on senior secondary school students' academic achievement. To optimize staff deployment, a systemic balance must be achieved. Key to realizing it is a thorough knowledge of the quantitative and qualitative aspects of the human resource pool, of short- and medium term staffing requirements, and of the supply and demand for needed skills on the teaching task to be implemented in the classroom (Nforbi and Amungwa, 2022).

Knowledge and skill that employees learned and gained from various ends without Ai and digital connectivity may not be sufficient to work in the organization. Therefore, training employees in the necessary skill to work with new job and responsibilities through Artificial intelligence and digital connectivity is required by the organization because the effect of the training would be translated on the students (Katangchol et al., 2023). Oyebimpe & Köprülü. (2022), described the training as the practice of developing a employees existing skills, knowledge, experience, and talents. Training allows instructors and school managers to improve their skills and knowledge to meet the

difficulties posed by societal development. Additionally, it is often said that a good teacher can achieve good results even if he or she has to teach under a tree because what is most important is willingness of the instructor and then other supporting factors such as teaching and learning resources will properly be managed if inadequate. (Somba and Otieno: 2022).

These researchers are of the opinion that teachers and other non-human resources if not adequately supplied to the school could hinder the set goals and objectives and successful implementation of the planned curriculum. As a result of this, Artificial Intelligence and digital connectivity is imperative for the transformation of Education in Nigeria.

Models of human resource management

The early HRM model developed by Fombrum et al. (1984) emphasizes the inter relatedness and the coherence of human resource management activities. The human resources management cycle in their model consists of four Key constituent components selection, appraisal, development and rewards. These four human resource activities aim to increase organizational performance. The weakness of the Fombrum, et al. model is its apparent prescriptive nature with its focus on four key HRM practices.

The HRM cycle is a simple model that serves as a pedagogical framework for explaining the nature significance of key HRM practices and the interactions among the factors making up the

complex fields of human resource management. The strength of the model is that it expresses the coherence of internal HRM policies and practices to the organization external business strategy.

Statement of the Problem

Despite the availability of other resources in Nigeria system of education, human and material resources are very important and necessary to develop and manage effectively towards the achievement of any stated educational goals and objectives. Secondary education produces middle level manpower, which is very crucial to the nation's economic development. In order to achieve the desired objectives of secondary education, quantitative manpower and unquantifiable trained teachers who are human resources as well as other resources in the school are needed to manage all the available resources for optimum benefit of the school. Emphasis was laid on the inadequacies found in both human and materials management practice in the educational system. Studies like Somba and Otieno, (2022) revealed that the ineffective use of human and material resources is responsible for the declining students' performance in education.

Purpose of the study

The main purpose of this paper is to determine the effect of human and material resources management on students' academic performance in Secondary Schools in Ebonyi State, through Artificial Intelligence (AI) and Digital

connectivity for the transformation of Education in Nigeria:

Specifically, the study sets out to:

1. Examine the importance of human, material and records management practices to academic achievement in the secondary schools;
2. Reveal how human and material resources management can improve students' academic performances in the secondary schools;
3. Examine problems associated with lack of human and materials resources in the secondary schools and
4. Establish a link between management practices and academic achievements.

Scope of the study

The study covered the available human, and materials resources management practice in schools and its impacts on student's academic performances in selected secondary schools in Afikpo Local Government Area of Ebonyi State, through Artificial Intelligence(AI) and Digital connectivity for the transformation of Education in Nigeria.

Research questions

The following research questions were formulated to guide the study:

- i. What is the correlation between human resources management and students' academic performance?
- ii. What is the correlation between material resources management and students' academic performance?

Hypotheses

The following hypotheses are stated and tested at alpha level of 0.05 significance in the study:

H01: There is no significant relationship between human resources management and students' academic performance

H02: There is no significant relationship between material resources management and students' academic performance.

Research Methods

The design used in this study was pure descriptive research design. Therefore, the data from this research was taken from primary sources. The target population consisted of 415 secondary schools in Afikpo LGA of Ebonyi State. In all, one hundred (100) staff and two hundred (200) students were selected from sixteen secondary schools. For the purpose of this study, the researcher used simple random sampling technique to select the sample size. The secondary schools were randomly selected from 415 secondary schools in Afikpo LGA of Ebonyi state.. The method chosen in the analysis of data was based on the descriptive nature of the study. Therefore, Pearson Product Moment Correlation was used to analyses the formulated hypotheses.

Instrument for Data Collection

Out of the selected secondary schools, questionnaire was administered to three hundred respondents, the top management, teachers and students which constituted the sample of the

study. The questionnaire was also administered by the researcher to the target respondents while observation was made used to support where the chance abounds. The (Regression Analysis and Pearson product Moment Correlation) was used, with the result of 0.05. This is done in order to

measure the strength of the instrument to ensure high level of reliability.

Results

H01: There is no significant relationship between human resources management and students' academic performance.

Table 1: Relationship Between Human Resources Management And Students' Academic Performance

Group P	N	X	SD	df	R
Human Resource Management	100	41.53	4.534	298	8.14***
Student academic performance	200	40.49	4.22		

Result in Table 1 revealed significant positive relationship between human resources management and students; academic performance ($r=.814$; $p<.05$). Therefore, the postulated null hypothesis is rejected. This means that human resources mean of 41.53 and students' academic performance are positively

related. The implication is that effective human resources management may bring about improvement in students' academic performance. However, ineffective human resource management may cause poor students' academic performance.

H02: There is no significant relationship between material resources management and students' academic performance

Table 2: Relationship Between Human Resources Management And Students' Academic Performance

Group P	N	X	SD	df	R
Material Resource Management	100	40.86	4.921	298	6.29**
Student academic performance	200	40.49	4.22		

Result in Table 2 revealed that there is significant relationship between material resources management and students' academic performance ($r=.629$; $p<.05$). Therefore, the

postulated null hypothesis is rejected. This means that material resources management and students' academic

performance is positively related. The implication is that effective material resources management may bring about improvement in students' academic performance. However, ineffective material resources management may cause poor students' academic performance.

Conclusion

As revealed from the statistical analysis above, the qualities of human and material resources in the selected secondary schools are indeed relatively high. The major challenge is lack of commitment on the part of the teachers and non-chalet attitude toward using the instructional resources as required of them. No one can compromise the role played by teachers in any educational settings to ensure translation and implementation of educational policies especially the curriculum into reality to achieve the desired goal from every learner.

To ensure success in their performance, the required training needed by them should be provided along with the modern technology which will assist in empowering their learners to blend with current development around the globe. The findings of this study correspond with the findings of Ado (2010) who opined that human and material resources are found to be a strategic tool in implementing the policies of educational goals especially through introduction of AI and Digital connectivity for the transformation of Education in Nigeria.

Recommendations

The following recommendations are made based on the results of the study:

1. Human resource of both private and public secondary schools should be effectively remunerated in order to boost that interest in the service delivery
2. Adequate training should be given to manpower in the use of material resource for effective output in public secondary schools.
3. There should be employment of more academic staff by both government and private owners to reduce the student teacher ratios to conform to the recommended standard.
4. Government should invest in infrastructure for reliable internet connectivity and digital infrastructure.
- 5 Government should train both staff and students on capacity building
- 6 Educational institutions should endeavour to introduce Artificial Intelligence and Digital connectivity for data protection which will enhance robust data security and privacy measure.

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*Corresponding Author: Magdalene Uduma Emmanuel Ogbonnia Ph.D

E-mail: ogbonniauduma@gmail.com

Received: 09 September,2025; Accepted: 21 October,2025. Available online: 30 October, 2025

Published by SAFE. (Society for Academic Facilitation and Extension)

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