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PRINCIPALS' CHANGE MANAGEMENT PRACTICES AND TEACHERS' ADOPTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE.

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Abstract
The purpose of the study was to ascertain the relationship between principals' change management practices and teachers' adoption of Artificial Intelligence technologies in public secondary schools in Anambra State. Correlation research design was adopted for the study. The population of the study comprised 267 public secondary school principals in Anambra State. Census technique was used. Principals' Change Management Practices Questionnaire (PCMPQ) and ''Teachers' Adoption of AI Technologies Questionnaire (TAAITQ)'' were used for data collection. The reliability of face-validated PCMPQ and TAAITQ was ascertained using Cronbach alpha method to obtain reliability coefficient values of 0.77 and 0.71 respectively. Data were analyzed using Pearson Product Moment Correlation coefficient. The findings of the study revealed that a very high positive and significant relationship existed between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State. Based on the findings of the study, it was recommended among others that principals should be more strategic in their resistance management process so as to sustain teachers' adoption of AI technologies in public secondary schools in Anambra State.

Keywords: Principal, Change Management Practices, Artificial Intelligence, Public Secondary Schools.

Introduction

The evolution of technology has necessitated the need for teachers to consider Artificial Intelligence technologies for curriculum implementation in line with the global trend. There are various AI technologies for educational purposes. AI tools, such as intelligent tutoring systems, adaptive learning platforms, and automated feedback systems, have been credited with enhancing personalized learning experiences and improving academic performance (Cela, Fonkam and Potluri, 2024). Artificial intelligence (AI) technologies, such as ChatGPT, have transformed the higher education landscape by providing personalized learning experiences, virtual assistants, automated assessments, content creation, material recommendations, time management tools, research assistance, translation support, and virtual laboratory simulations (Nikolopoulou, 2024). The emergence of ChatGPT has enhanced learner engagement, simplified administrative tasks, and facilitated interdisciplinary collaboration (Dempere et al., 2023). By understanding AI's influence, teachers can adapt their curricula and teaching methods to remain relevant in an AI-driven future (Vashista et al.,

2023). Teachers can adopt ChatGPT to select appropriate information, adapt it to given instructions, provide reasonable arguments, and define limitations; thus, enhancing critical thinking rather than diminishing it.

The adoption of artificial intelligence (AI) technologies in education comes across as a key focus for digitalizing learning experiences and engendering effectiveness in the teaching-learning process to improve educational results. AI has exponentially begun to transform the ways teachers teach, students learn, and schools function (Kamalov et al., 2023), which has obvious implications for principals' change management in the new age. This understandably has proven that modern day students are digital natives who have become so used to the application of technology. Thus, it is expected of teachers in public secondary schools to adopt AI technologies with a view to providing individualized instruction while adapting the curriculum to meet the specific needs of each student. Teachers' adoption of AI contributes to the creation of a more immersive and efficient learning environment (Olatunde-Aiyedun, 2024). Despite the relevance to AI technologies to the teaching-learning process, the observation of Anachuna (2022) and Uche (2024) in public secondary schools revealed that teachers still adopt the 'chalk and talk' method for instructional delivery without recourse to technology. Suffice it to say the afore-mentioned trend could be attributed to principals' change management practices.

Change management practice captures the structured approach of transitioning individual, teams, and organizations from where they are to where they ought to be while minimizing disruptions and maximizing gains. It refers to the method of identifying necessary adjustments within an organization and its implementation (Reyna-Vargas, 2025). Within the context of the present study, change management practices refer to the systematic approach adopted by principals in bringing about structural and infrastructural transitions in the school in line with global trend. Change management practice provides the process and tools to support transitions to the future state of an organization. This is expedient because it influences the way tasks are undertaken in organizations. Change management is a critical aspect of any successful AI adoption, especially on a large scale within an organization especially in public secondary schools. As organizations seek to modernize their operations and embrace digital transformation, effective change management practice becomes vital towards ensuring that these transformations are not only technologically sound but culturally and strategically aligned with the organization's long-term objectives (Martins, 2023). Martins added that the transition from traditional information technology (IT) systems to AI and other advanced technologies necessitates a comprehensive approach to change management, stressing communication, training, and phased implementation. It is interesting to note that principals, in the course of change management, can manage AI adoptions by teachers through clear communication and resistance management.

Change management process **is** so complex that it requires making strategic decisions; and artificial intelligence (AI) plays a pivotal role in enhancing resistance management. Resistance to change is natural and managing it proactively helps minimize obstacles. Resistance to change management requires the analysis of various factors viz: employee participation and engagement; negotiation and agreeability as well as manipulation and co-optation (Sirisha, 2024). AI technologies possess the potential to support principals by providing data-driven insights that facilitate effective resistance management. Similarly, Isa et al. (2020) found that a significant relationship existed between principals' change management practices and secondary school teachers' level of technology integration in Peninsular, Malaysia. In addition, Zhang et al. (2022) confirmed the key role of transformational leadership in promoting teacher professional development and activating organizational learning mechanisms, which is particularly applicable to the new context of AI-oriented teaching reform. AI can be employed by the principals in clear communication to the benefit of the teachers in public secondary schools.

Clear communication strategies that can be adopted by principals in a school include active listening, open dialogue and tailored messaging to resonate with diverse audiences. They are key components of successful change management initiatives, as it can considerably impact employee attitudes toward change and overall acceptance of new processes (Syafwan and Fathia, 2023). The principal is expected to exude the capacity to foresee future developments and effective communicate to the teachers while defining institutional objectives. According to Yue et al. (2019), effective internal communication plays a pivotal role in providing employees with a clear understanding of the

content and rationale behind organizational change. By principals' communication of the goals and objectives of the school to the teachers, AI can be used by the teachers to predict future educational needs and trends. The use of AI technologies can bring to the fore the change management practices of principals in public secondary schools. In view of the foregoing, it will be interesting to establish the relationship between principals' change management practices and teachers' adoption of AI technologies in public secondary schools in Anambra State.

Purpose of the Study

The purpose of the study was to ascertain the relationship between principals' change management practices and teachers' adoption of AI technologies in public secondary schools in Anambra State. Specifically, the study sought to determine:

1. the relationship between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State; and
2. the relationship between principals' clear communication and teachers' adoption of AI technologies in public secondary schools in Anambra State.

Research Questions

The following research questions guided the study:

1. What is the relationship between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State?
2. What is the relationship between principals' clear communication and teachers' adoption of AI technologies in public secondary schools in Anambra State?

Hypothesis

1. There is no significant relationship between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State.
2. There is no significant relationship between principals' clear communication and teachers' adoption of AI technologies in public secondary schools in Anambra State.

Methods

Correlation research design which is tailored towards finding out the relationship between variables (Nworgu, 2015) was adopted to give direction to the present study. The population of the study was made up of 267 principals in the 267 public secondary schools in Anambra State. Census technique was used to draw the sample size due to the fact that the population is of manageable size. ''Principals' Change Management Practices Questionnaire (PCMPQ) and ''Teachers' Adoption of AI Technologies Questionnaire (TAAITQ)'' were utilized for data collection. PCMPQ and TAAITQ were constructed by the researchers from available literature with 10 items apiece. PCMPQ was divided into two clusters, cluster A and B. Cluster A sought information on principals' resistance management in public secondary schools while cluster B sought information on principals' clear communication in public secondary schools. PCMPQ and TAAITQ were constructed in such a manner that the participants for the study responded by choosing one of the four response categories viz: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The face-validation of PCMPQ and TAAITQ was carried out by three experts who were lecturers in Faculty of Education, Nnamdi Azikiwe University, Awka. The reliability of PCMPQ and TAAITQ was ascertained using Cronbach alpha method. This was undertaken by administering copies of PCMPQ and TAAITQ to 10 principals who share similar characteristics in Enugu State which is outside the study area. The internal consistencies of the items in PCMPQ and TAAITQ gave reliability coefficient values of 0.77 and 0.71 respectively. These values were deemed adequate to confirm PCMPQ and TAAITQ as reliable as they were in consonance with the recommendation of Shrestha (2021) who posited that the adequate threshold value for Cronbach alpha should be >0.70. Collection of data was facilitated with the help of seven research assistants who were co-postgraduate students in Anambra State. The justification for their choice was premised on their presumed depth of research knowledge. Out of the 267 copies of PCMPQ and TAAITQ administered, 218 were retrieved; depicting 81.6% return rate. The afore-mentioned was utilized for data analysis.

Data related to the research questions were analyzed using Pearson Product Moment Correlation coefficient by finding the relationship between each pair of variables. Following the recommendations of Nwana (as cited in Nworgu, 2015), the interpretation is thus stated:

±0.00 – 0.19 = Very low relationship
±0.20 – 0.39 = Low relationship
±0.40 – 0.59 = Moderate relationship
±0.60 – 0.79 = High relationship
±0.80 – 0.10 = Very high relationship.

In determining the significance of the hypotheses, p-value was used. Where the calculated p-value is less than the stipulated level of significance (0.05), the null hypothesis was not upheld. In contrast, the null hypothesis was accepted where the calculated p-value is greater than or equal to the stipulated level of significance (0.05). All analyses were done with the aid of the Statistical Package for Social Sciences (SPSS) version 22.

Results

Table 1: Pearson r on Relationship between Principals' Resistance Mnagament and Teachers' Adoption of AI Technologies in Public Secondary Schools in Anambra State

Source of Variation	N	r	p-value	Remark
Principals' Resistance Management	218	0.804		
			0.01	Very High Positive Relationship
Teachers' Adoption of AI Technologies				

Data in Table 1 show that there is a very high positive relationship between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State. This is evident by the size of Pearson's Correlation Coefficient r, which is 0.804. In addition, the analysis shows that there is a significant relationship between principals' resistance management and teachers' adoption of AI technologies in public secondary schools. The calculated r (0.804, p = 0.01) has p-value <0.05. The null hypothesis one is therefore rejected.

Table 2: Pearson r on Relationship between Principals' Clear Communication and Teachers' Adoption of AI Technologies in Public Secondary Schools in Anambra State

Source of Variation	N	r	p-value	Remark
Principals' Clear Communication	218	0.615		
			0.04	High Positive Relationship
Teachers' Adoption of AI Technologies				

Data in Table 2 show that there is a high positive relationship between principals' clear communication and teachers' adoption of AI technologies in public secondary schools in Anambra State. This is evident by the size of Pearson's Correlation Coefficient r, which is 0.615. In addition, the analysis shows that there is a significant relationship between principals' clear communication and teachers' adoption of AI technologies in public secondary schools. The calculated r (0.615, p = 0.04) has p-value <0.05. The null hypothesis two is therefore not accepted.

Discussion

Relationship between Principals' Resistance Management and Teachers' Adoption of AI Technologies in Public Secondary Schools in Anambra State

The finding of this study revealed that a very high positive and significant relationship existed between principals' resistance management and teachers' adoption of AI technologies in public secondary schools in Anambra State. This goes to show that the more effective principals' resistance management is, the higher the tendency for teachers to adopt AI technologies. This highlights the critical role that principals play in shaping the adoption and integration of AI technologies in education. In other words, the relationship highlights of effective leadership in facilitating teachers' integration of AI technologies in matters of curriculum implementation. Much as there is paucity of research works on principals' resistance management and teachers' adoption of AI technologies, Isa et al. (2020) found that a significant relationship existed between principals' change management practices and secondary school teachers' level of technology integration in Peninsular, Malaysia. This highlights the place of change management practice (resistance management) on the facilitation of teachers' use of AI technologies.

Relationship between Principals' Clear Communication and Teachers' Adoption of AI Technologies in Public Secondary Schools in Anambra State

The finding of this study showed that a high positive and significant relationship existed between principals' clear communication and teachers' adoption of AI technologies in public secondary schools in Anambra State. Thus, the clearer principals' communication is, the greater the tendency for teachers to adopt AI technologies. This points to the fact that principals are alive to their responsibility in ensuring clear communication and bringing about teachers' adoption of AI technologies. This brings to the fore the fact that teachers' motivation for the use of AI technologies is anchored on principals' clear communication. Although there is paucity of research works on principals' clear communication and teachers' adoption of AI technologies, Zhang et al. (2022) confirmed the key role of transformational leadership in the promotion of teacher professional development and activating organizational learning mechanisms, which is particularly applicable to the new context of AI-oriented teaching reform. This is an attestation of principals' clear communication in engendering teachers' adoption of AI technologies.

Conclusion

It is obvious that principals play a key role in teachers' job effectiveness. Thus, it was concluded that there was a positive relationship between principals' change management practices and teachers' adoption of AI technologies in public secondary schools in Anambra State.

Recommendations

In line with the findings of the study, the following recommendations were made:

1. Principals should be more strategic in their resistance management process so as to sustain teachers' adoption of AI technologies in public secondary schools.
2. Ministry of Education should organize seminars and workshops for principals on the need to improve on their clear communication with a view to enhancing teachers' adoption of AI technologies in public secondary schools.

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