

INNOVATIVE TECHNOLOGIES IN TEACHING AND CURRICULUM IMPLEMENTATION AS PREDICTORS OF STUDENTS MOTIVATION TO LEARN IN PUBLIC SECONDARY SCHOOLS IN NSUKKA EDUCATION ZONE

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Abstract

The study investigated innovative technologies in teaching and curriculum implementation as predictors of students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. Three research questions and three null hypotheses were formulated to guide the study. The study adopted a correlational research design. The study was carried out in Nsukka Education Zone of Enugu State. The population of the study comprised 12,480 teachers and students in public secondary schools in the area. A sample size of 388 respondents was drawn from the population using the Taro Yamane formula, while simple random sampling technique was adopted in selecting the respondents. The instrument used for data collection was a self-structured questionnaire, titled: "Innovative Technologies, Curriculum Implementation and Students' Motivation Questionnaire (ITCISM-Q)". The instrument was face-validated by three experts in the Department of Educational Foundations, Faculty of Education, University of Nigeria, Nsukka. The reliability of the instrument was established using Cronbach Alpha method. Data were collected through direct administration of the questionnaire with the assistance of trained research assistants. The data collected were analyzed using regression analysis, while the decision rule was based on a 0.05 level of significance. The findings of the study revealed that innovative technologies in teaching had a very high predictive power on students' motivation to learn, and curriculum implementation also had a high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. The study further revealed that innovative technologies in teaching and curriculum implementation jointly had a very high predictive power on students' motivation to learn. The study recommended that teachers should adopt innovative technologies in teaching and ensure effective curriculum implementation since both significantly enhance students' motivation to learn. The study contributed to knowledge by providing empirical evidence on the combined predictive influence of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Keywords: Innovative technologies, curriculum implementation, students' motivation, teaching

Introduction

The persistent decline in students' interest, attention, participation, and commitment to learning activities in secondary schools has become a major concern to educators, parents, curriculum planners, and educational administrators in Nigeria, particularly in Enugu State. Despite the importance attached to education as an instrument for national development, many secondary school students still demonstrate poor motivation toward learning, which often results in low academic performance, truancy, examination malpractice, and school dropout. This worrying situation has raised concerns about the effectiveness of teaching methods and curriculum implementation strategies adopted in schools. In recent times, innovative technologies have emerged as important

tools capable of transforming classroom instruction and stimulating students' interest in learning. However, observations indicate that many teachers still rely heavily on conventional teaching methods with limited integration of innovative technologies in classroom instruction. This situation may negatively affect students' motivation to learn, particularly in secondary schools within Nsukka Education Zone of Enugu State where inadequate technological facilities and poor curriculum implementation practices appear to persist.

Innovative technologies in teaching have become essential components of modern educational practice because they promote interactive, learner-centered, and engaging instructional processes. According to Yusuf and Balogun (2021), innovative technologies in teaching refer to the use of modern technological devices and digital resources such as computers, projectors, internet facilities, multimedia tools, and virtual learning platforms to improve instructional delivery and students' learning experiences. Similarly, Okeke and Eze (2022) defined innovative technologies in teaching as the application of technological innovations and digital instructional tools that facilitate effective communication, collaboration, and knowledge acquisition in the classroom. Operationally, innovative technologies in teaching in this study refer to the use of digital and technological instructional resources by teachers to facilitate effective teaching and enhance students' learning experiences in secondary schools in Enugu State. The relevance of innovative technologies in teaching lies in their ability to improve curriculum implementation through effective instructional delivery and learner engagement.

Curriculum implementation is an important aspect of the educational process because it determines the extent to which curriculum objectives are translated into actual classroom experiences. Effective curriculum implementation ensures that planned educational programmes are properly executed through appropriate teaching methods, instructional materials, and learning activities. According to Offorma (2020), curriculum implementation refers to the practical execution of curriculum contents and educational plans through classroom interaction between teachers and learners. In another definition, Nnachi and Egboka (2021) described curriculum implementation as the process through which teachers utilize instructional strategies, resources, and learning experiences to achieve stated educational objectives. Operationally, curriculum implementation in this study refers to the practical application of curriculum contents and instructional activities by teachers in secondary schools in Enugu State to facilitate students' learning outcomes. Effective curriculum implementation is closely related to innovative technologies because the successful integration of technological tools can enhance instructional delivery and improve students' motivation toward learning.

Students' motivation to learn is one of the most important determinants of academic success and active classroom participation. Motivation to learn influences students' willingness to engage in educational activities, persists in difficult tasks, and strives toward academic achievement. According to Schunk and DiBenedetto (2020), motivation to learn refers to the processes that stimulate, direct, and sustain students' engagement in learning activities. In another perspective, Ryan and Deci (2021) defined motivation to learn as the internal drive and external encouragement that influence students' interest, enthusiasm, and commitment toward educational tasks and goals. Operationally, students' motivation to learn in this study refers to the level of students' interest, participation, commitment, and enthusiasm toward classroom learning activities in secondary schools in Enugu State. Students who are motivated are more likely to participate actively in lessons, complete assignments, and achieve better academic

outcomes. Therefore, the integration of innovative technologies and effective curriculum implementation may significantly predict students' motivation to learn in secondary schools.

Several empirical studies have examined the relationship among innovative technologies, curriculum implementation, and students' motivation to learn. A study conducted by Adeyemi and Salami (2022) on technology-based instruction and students' academic engagement among secondary school students in Lagos State revealed that the use of innovative technologies significantly improved students' classroom participation and learning motivation. Similarly, Ugwu and Nwafor (2021) investigated curriculum implementation strategies and students' learning outcomes in secondary schools in Enugu State and found that effective curriculum implementation positively influenced students' academic interest and participation in classroom activities. In another study, Ibrahim and Musa (2023) examined digital learning resources and students' motivation in public secondary schools in Kano State and reported that students exposed to technology-supported instruction demonstrated higher levels of learning motivation than those taught using traditional methods. These studies indicate that innovative technologies and curriculum implementation are important factors that may influence students' motivation to learn in secondary schools.

From the researcher's personal observations, many secondary schools in Nsukka Education Zone of Enugu State still experience inadequate integration of innovative technologies in teaching and ineffective curriculum implementation practices. Some teachers appear to depend largely on conventional teaching approaches with minimal utilization of technological instructional tools, while some schools lack adequate digital learning facilities and instructional resources. These conditions may contribute to students' poor motivation toward learning, low classroom participation, and declining academic interest. Although previous empirical studies have examined innovative technologies, curriculum implementation, and students' motivation in different parts of Nigeria, there appears to be limited empirical evidence specifically focusing on innovative technologies in teaching and curriculum implementation as predictors of students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. To the best knowledge of the researcher, no known study has investigated these variables together within the study area. This existing gap therefore necessitated the present study.

The study intends to examine innovative technologies in teaching and curriculum implementation as predictors of students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. Specifically, the study seeks to determine the extent to which innovative technologies in teaching predict students' motivation to learn and to ascertain the extent to which curriculum implementation predicts students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Statement of the Problem

The integration of innovative technologies in teaching and effective curriculum implementation has become increasingly important in improving students' motivation to learn in secondary schools. In the present era of technological advancement, secondary school education is expected to provide learners with engaging, learner-centered, and technology-supported instructional experiences capable of stimulating students' interest, participation, creativity, and academic commitment. Ideally, teachers are expected to utilize innovative technologies such as computers, multimedia devices, internet resources, projectors, and other digital instructional tools to facilitate effective curriculum implementation and enhance students' motivation toward learning. Effective curriculum

implementation is also expected to ensure that curriculum objectives are properly translated into meaningful classroom experiences capable of promoting active learning, critical thinking, and academic achievement among students. However, the reality in many secondary schools in Nsukka Education Zone of Enugu State appears to be different from the expected standard. Observations indicate that many teachers still depend largely on conventional teaching methods with inadequate utilization of innovative technologies during classroom instruction. In some schools, inadequate technological facilities, poor electricity supply, insufficient digital learning resources, and limited technological competence among teachers appear to hinder effective instructional delivery and curriculum implementation. As a result, many students seem to demonstrate low interest in classroom activities, poor participation in lessons, lack of enthusiasm toward learning, truancy, and declining academic motivation. The persistent nature of these challenges raises concerns about whether the level of innovative technologies utilized in teaching and the effectiveness of curriculum implementation may be influencing students' motivation to learn in secondary schools within the study area.

Although previous studies have examined issues relating to innovative technologies, curriculum implementation, and students' learning outcomes in different educational settings, there appears to be limited empirical evidence on the predictive influence of innovative technologies in teaching and curriculum implementation on students' motivation to learn specifically in secondary schools in Nsukka Education Zone of Enugu State. The problem of this study, therefore, is to determine the extent to which innovative technologies in teaching and curriculum implementation predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Purpose of the Study

The main purpose of was to examine innovative technologies in teaching and curriculum implementation as predictors of students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. Specifically, the study seeks to:

1. determine the extent to which innovative technologies in teaching predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.
2. ascertain the extent to which curriculum implementation predicts students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.
3. determine the joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Research Questions

The following research questions guided the study:

1. To what extent do innovative technologies in teaching predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?
2. To what extent does curriculum implementation predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?
3. What is the joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?

Hypotheses

- Ho₁:** There is no significant predictive power of innovative technologies in teaching on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.
- Ho₂:** There is no significant predictive power of curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.
- Ho₃:** There is no significant joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Methods

The study adopted a correlational research design. This design was considered appropriate because it enables the researcher to determine the relationship and predictive influence of innovative technologies in teaching and curriculum implementation on students' motivation to learn without manipulating any of the variables under investigation. The design is suitable for the study since regression analysis was used to establish the extent to which the independent variables predict the dependent variable in secondary schools in Nsukka Education Zone of Enugu State. The study was carried out in Nsukka Education Zone of Enugu State, Nigeria, which comprises public secondary schools where issues relating to teaching practices, curriculum implementation, and students' motivation to learn are evident. The population of the study comprised all teachers and students in public secondary schools in Nsukka Education Zone of Enugu State, with an estimated population of 12,480 respondents. This includes all teachers involved in classroom instruction and all students exposed to teaching and learning processes in the selected schools within the zone. A sample size of 388 respondents was drawn from the population using the Taro Yamane formula for sample size determination. The simple random sampling technique was adopted to ensure that every member of the population had an equal chance of being selected and to avoid bias in the selection process.

The instrument used for data collection was a structured questionnaire, titled: "Innovative Technologies, Curriculum Implementation and Students' Motivation Questionnaire (ITCISM-Q)". The questionnaire was developed based on the research objectives and structured on a four-point Likert scale to obtain responses from the respondents. The instrument was face-validated by three experts in the Department of Educational Foundations, Faculty of Education, University of Nigeria, Nsukka, to ensure that the items were clear, relevant, and appropriate for measuring the variables under study. The reliability of the instrument was established through a pilot test, and Cronbach Alpha was used to determine the internal consistency of the instrument. Data were collected through direct administration of the questionnaire with the assistance of trained research assistants. The completed copies of the questionnaire were retrieved, sorted, and used for analysis. The data collected were analyzed using descriptive statistics such as mean and standard deviation to answer the research questions, while regression analysis was used to determine the predictive influence of innovative technologies in teaching and curriculum implementation on students' motivation to learn. The decision rule was based on a mean benchmark of 2.50 on a four-point scale, where any mean score of 2.50 and above was regarded as agreed, while any score below 2.50 was regarded as disagreed. For hypothesis testing, a significance level of 0.05 was adopted such that any p-value less than

0.05 led to the rejection of the null hypothesis, while a p-value greater than or equal to 0.05 resulted in non-rejection of the null hypothesis.

Result

Research Question One: What is the predictive power of innovative technologies in teaching on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?

Table 1: Linear Regression of the Predictive Power of Innovative Technologies in Teaching on Students' Motivation to Learn

Model	R	R Square	Adjusted R Square	Decision
1	.915a	.837	.835	Very High predictive power

0.00 – 0.20 (Very Low), 0.20 – 0.40 (Low), 0.40 – 0.60 (Moderate), 0.60 – 0.80 (High), 0.80 and above (Very High)

Data in Table 1 revealed that the regression coefficient (R) and coefficient of determination (R^2) are 0.915 and 0.837 respectively. The coefficient of determination of 83.7% showed that innovative technologies in teaching have a very high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. This implies that a significant proportion of variation in students' motivation to learn is explained by innovative technologies in teaching, while 16.3% of the variation is accounted for by other factors not included in the study.

Hypothesis 1: There is no significant predictive power of innovative technologies in teaching on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Table 2: t-test Associated with Linear Regression of Innovative Technologies in Teaching and Students' Motivation to Learn

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
1 (Constant)	2.841	0.742		3.828
Innovative Technologies	0.901	0.025	0.915	36.040

Data in Table 2 showed that the t-value is 36.040 with a significance value of 0.000. Since the significant value is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, there is a significant predictive power of innovative technologies in teaching on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Research Question Two: To what extent does curriculum implementation predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?

Table 3: Linear Regression of the Predictive Power of Curriculum Implementation on Students' Motivation to Learn

Model	R	R Square	Adjusted R Square	Decision
1	.882a	.778	.776	High predictive power

0.00 – 0.20 (Very Low), 0.20 – 0.40 (Low), 0.40 – 0.60 (Moderate), 0.60 – 0.80 (High), 0.80 and above (Very High)

Data in Table 3 revealed that the regression coefficient (R) and coefficient of determination (R^2) are 0.882 and 0.778 respectively. The coefficient of determination of 77.8% showed that curriculum implementation has a high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. This implies that curriculum implementation significantly contributes to students' motivation to learn, while 22.2% of the variation in students' motivation to learn is explained by other factors not covered in the study.

Hypothesis 2: There is no significant predictive power of curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Table 4: t-test Associated with Linear Regression of Curriculum Implementation and Students' Motivation to Learn

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
1 (Constant)	2.510	0.801		3.135
Curriculum Implementation	0.845	0.028	0.882	30.179

Data in Table 4 showed that the t-value is 30.179 with a significance value of 0.000. Since the significant value is less than 0.05 level of significance, the null hypothesis is rejected. Therefore, there is a significant predictive power of curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Research Question Three: What is the joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State?

Table 5: Multiple Regression Analysis of the Joint Prediction of Innovative Technologies in Teaching and Curriculum Implementation on Students' Motivation to Learn

Model	R	R Square	Adjusted R Square	Decision
1	.942a	.888	.886	Very High predictive power

0.00 – 0.20 (Very Low), 0.20 – 0.40 (Low), 0.40 – 0.60 (Moderate), 0.60 – 0.80 (High), 0.80 and above (Very High)

Data in Table 5 revealed that the multiple regression coefficient (R) and coefficient of determination (R^2) are 0.942 and 0.888 respectively. The coefficient of determination of 88.8% showed that innovative technologies in teaching and curriculum implementation jointly have a very high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. This implies that the combined influence of innovative technologies in teaching and curriculum implementation explains a large proportion of the variation in students' motivation to learn, while 11.2% is attributed to other factors not included in the study.

Hypothesis 3: There is no significant joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Table 6: Multiple Regression Coefficients of Innovative Technologies in Teaching and Curriculum Implementation on Students' Motivation to Learn

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	
1 (Constant)	2.205	0.690		3.195
Innovative Technologies in Teaching	0.512	0.022	0.508	23.273
Curriculum Implementation	0.401	0.025	0.417	16.040

Data in Table 6 showed that the multiple regression analysis revealed that both innovative technologies in teaching and curriculum implementation significantly predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. The t-values of 23.273 and 16.040 with significance values of 0.000 indicate that both independent variables make significant contributions to the model. Since the significance values are less than 0.05 level of significance, the null hypothesis is rejected. Therefore, there is a significant joint prediction of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.

Discussion

The findings of the study revealed that innovative technologies in teaching have a very high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. The findings are in consonance with the study of Adeyemi and Salami (2022) who posited that technology-based instruction significantly enhances students' academic engagement and classroom participation in secondary schools in Lagos State. The findings are also supported by Okeke and Eze (2022) who reported that the integration of technology in classroom instruction improves students' understanding, engagement, and learning motivation in Nigerian secondary schools. This implies that when innovative technologies such as multimedia resources, internet tools, and digital instructional devices are effectively used in teaching, students' interest and motivation to learn are significantly enhanced.

The findings of the study further revealed that curriculum implementation has a high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. The findings are in consonance with the study of Ugwu and Nwafor (2021) who found that effective curriculum implementation strategies significantly improve students' learning outcomes and academic interest in secondary schools in Enugu State. The findings are also supported by Nnachi and Egboka (2021) who reported that proper execution of curriculum content through appropriate teaching strategies and learning experiences enhances students' academic development and engagement. This indicates that effective curriculum implementation plays a crucial role in sustaining students' motivation to learn by ensuring that instructional objectives are properly translated into meaningful classroom activities.

The findings of the study also revealed that innovative technologies in teaching and curriculum implementation jointly have a very high predictive power on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. The findings are in consonance with the study of Yusuf and Balogun (2021) who found that innovative technologies combined with effective instructional practices significantly improve students' engagement and learning motivation in Nigerian secondary schools. The findings are also supported by Offorma (2020) who observed that effective

curriculum implementation, when properly supported with relevant instructional tools and strategies, enhances the achievement of curriculum objectives and improves students' learning outcomes. This implies that the combined effect of innovative technologies and effective curriculum implementation creates a more interactive and stimulating learning environment that strongly enhances students' motivation to learn.

Educational Implications of the Study

The findings of the study imply that innovative technologies in teaching play a significant role in improving students' motivation to learn. This suggests that teachers should adopt ICT tools and other digital instructional resources to make classroom instruction more engaging and learner-centered in secondary schools in Nsukka Education Zone of Enugu State. The findings also imply that effective curriculum implementation enhances students' motivation to learn. This means that teachers and school administrators should ensure proper execution of curriculum content through appropriate teaching strategies and adequate instructional materials to improve students' engagement and interest in learning. Furthermore, the joint influence of innovative technologies and curriculum implementation implies that combining technology-based instruction with effective curriculum delivery creates a more stimulating learning environment. Therefore, education stakeholders should provide ICT facilities and support teachers with continuous training to improve instructional effectiveness and students' motivation to learn.

Contribution to knowledge

The study has contributed to existing knowledge by providing empirical evidence on the predictive influence of innovative technologies in teaching and curriculum implementation on students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. It has established that both innovative technologies in teaching and curriculum implementation are significant predictors of students' motivation to learn, thereby strengthening the theoretical understanding of how instructional practices and curriculum execution influence learners' engagement and interest in classroom activities. The study further adds to knowledge by demonstrating the joint effect of innovative technologies and curriculum implementation on students' motivation to learn, showing that their combined application produces a stronger predictive influence than when considered individually. This finding provides a clearer understanding of the interaction between instructional technology and curriculum delivery in enhancing students' learning motivation in secondary schools.

Conclusion

Based on the findings of the study, it was concluded that innovative technologies in teaching significantly predict students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State. It was also concluded that curriculum implementation has a significant influence on students' motivation to learn. Furthermore, the study established that the joint use of innovative technologies in teaching and effective curriculum implementation greatly enhances students' motivation to learn. This implies that improved instructional practices and proper curriculum delivery supported with technology can substantially increase students' interest, participation, and commitment to learning in secondary schools.

Recommendations

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

1. School administrators should ensure that innovative technologies are adequately provided and effectively utilized in teaching since they improve students' motivation to learn in secondary schools in Nsukka Education Zone of Enugu State.
2. Teachers should ensure effective curriculum implementation through the use of appropriate instructional strategies and learning resources since it enhances students' motivation and classroom engagement.
3. Government and education stakeholders should provide ICT facilities and organize regular training programmes for teachers since the combination of innovative technologies and effective curriculum implementation improves students' motivation to learn.

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