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Determinants of the Effective Implementation of Common Core Curriculum in Ghanaian Junior High Schools

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Abstract: Over the past two decades, Ghana has been revising its curricula to address the country's existing needs, aspirations, and challenges. However, there is limited understanding of the factors that may contribute to the successful implementation of these curricula. This study aimed to assess the determinants of implementing the Common Core Curriculum (CCP) in junior high schools in Ghana. A quantitative research approach employing a descriptive research design was utilized, and data were collected using a questionnaire from 436 respondents made up of teachers and head teachers. Confirmatory factor analysis was used to validate the questionnaire. Multiple regression and analysis of variance were employed to analyze the data. The major findings reveal that school-based, learners-based, and teachers-based factors are predictors of effective implementation of the CCP in public junior high schools in Ghana. It was recommended that adequate instructional materials, monitoring, and supervision be provided to facilitate the effective implementation of the CCP in junior high schools. These results have implications for both policy and practice concerning teacher recruitment and curriculum implementation in educational institutions.

Keywords: Common Core Curriculum (CCP), implementation, determinants of curriculum

1. Introduction

Education is a fundamental cornerstone of any nation's economy, serving as a means to instill moral values in its citizens [1]. Given its dual role as the foundation of the economy and a vehicle for moral education, periodic overhauls of the education system are necessary. Since the colonial era, Ghana has undergone various curricular revisions and educational policy changes to develop a system that produces graduates with essential competencies. The nation's philosophy and ideology guide the creation of curriculum policies. In Ghana, the Ministry of Education is responsible for developing and framing pre-tertiary curriculum policies based on the directives of the national government. The first educational policy reform after British rule was the Accelerated Development Plan (ADP) for education formulated in 1951 and implemented in 1952 to fast-track educational development in Ghana. Additionally, the Education Act of 1961 was passed after the ADP had run for 10 years to introduce innovations into education to meet the philosophy and aspirations of the government and the citizens [2]. According to Nkansah [2], several committees and reforms were commissioned by successive governments in Ghana to sustain globalization. The committees and reforms commissioned by successive governments in Ghana include the Dzobo Education Committee of 1972, which aimed to shorten pre-tertiary education and introduce more practical content in school programs; the Justice Evans Anform Committee of Education Reforms in 1987, which reduced the duration of pre-tertiary education from 17 to 12 years and introduced vocational education in junior high schools; the Free Compulsory Universal Basic Education of 1995; the Professor Josephus Anamuah-Mensah Committee of Educational Reform in 2002; and the 2007 educational reform, which extended free and compulsory education to cover two years of kindergarten for children aged 4.

Despite these efforts, stakeholders continue to express concerns about the performance of Ghana's educational system. Some critics argue that these institutions focus on producing job seekers rather than innovators or job creators, sparking questions about whether the root cause lies in curriculum design flaws or inadequate implementation [3]. Asante et al. [4] argue that the Ghanaian educational system is inherently artificial and knowledge-based, failing to prepare students to meet societal goals and objectives due to a lack of social training. They advocate for a shift from a theory-based to a practical-based curriculum to better prepare students for both society and the workplace and to ensure their future employability. The junior high school curriculum, created in 2007 and updated in 2012, failed to address the fundamental issues preventing students from accessing educational practices and programs that would enable them to contribute to Ghanaian society [5]. For example, the previous curriculum was objective-based, focusing on helping students acquire knowledge to pass exams rather than emphasizing proficiency through reasoning and application. These concerns led to the implementation of a standard-based curriculum in kindergarten and primary schools in

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2019 and the subsequent introduction of the Common Core Curriculum (CCP) in junior high schools. Implementation of any curriculum reform often encounters various challenges, including resource constraints, teacher preparedness, and administrative support. This study aims to uncover specific obstacles that schools face in adopting the CCP, providing insights into how these challenges can be mitigated to improve implementation success.

The curriculum is developed and utilized within the educational system to address current needs, aspirations, and challenges, adapting to the evolving demands of society. As the foundation of every educational experience [6], the curriculum encompasses all learning experiences and intended outcomes offered to learners in a school. Therefore, a curriculum must evolve alongside advancements in science, art, technology, and the competencies required to achieve educational objectives. This evolution is crucial for building a well-rounded human resource base that aligns with a country's educational aspirations for the future. However, implementing curriculum reforms, as seen in Hong Kong and other nations, often encounters significant challenges such as excessive teacher workloads and insufficient understanding of the curriculum [7]. Consequently, teachers must be equipped with the necessary managerial skills and knowledge to effectively implement new curricula [8].

Teachers play a pivotal role in executing curriculum activities and bringing curriculum documents to life, meaning that discussions about the curriculum inherently involve the role of the teacher. Hence, as curriculum implementers, teachers translate the curriculum into practical learning experiences through instructional materials. However, a study by Addai-Mununkum and Setordzi [9] finds that pre-primary and primary instructors lack the instructional materials and have insufficient training to effectively translate the new curriculum. Similarly, Asante et al. [4] note that the standard-based curriculum for kindergarten and primary schools required more teaching and learning materials for the realization of the objectives. Mathias et al. [10] also highlight inadequate in-service training, teaching aids, overcrowded classrooms, and poor student literacy as core challenges in Tanzania's curriculum implementation. These findings suggest that adequate classroom space, instructional materials, and teacher training are essential for successful curriculum implementation. Mahama [11] further supports this by asserting that Ghanaian teachers needed more resources and in-service training to implement the 2019 standard-based curriculum at the kindergarten and primary school levels.

The concerns outlined above indicate that inadequate learning facilities, teaching materials, teacher training, and a sufficient number of teachers, along with large class sizes, parental ignorance, and lack of cooperation, can hinder the successful implementation of new curricula in Ghanaian basic schools. However, most existing studies focus on the objective-based curriculum and are conducted in other African and Western countries that have different educational contexts than those of Ghana. There is a need to gauge these factors regarding the implementation of the CCP in Ghanaian junior high schools. Therefore, the researchers believe that the paucity of literature in the Ghanaian context justifies the need for the current study on the determinants of the implementation of the CCP in junior high schools in Ghana.

The objective of the study is to:

1) Examine the relationship between school-based factors and the effective implementation of the CCP in public junior high schools in Ghana.
2) Investigate the relationship between teacher-related factors and the effective implementation of the CCP in public junior high schools in Ghana.
3) Explore the relationship between pupil-related factors and the effective implementation of the CCP in public junior high schools in Ghana.

The following research hypotheses guided the study:

Ho 1: There is no statistically significant relationship between school-based factors and the effective implementation of the CCP in public junior high schools in Ghana.
Ho 2: There is no statistically significant relationship between teacher-related factors and the effective implementation of the CCP in public junior high schools in Ghana.
Ho 3: There is no statistically significant relationship between pupils-related factors and the effective implementation of the CCP in public junior high schools in Ghana.

2. Literature Review

The theoretical framework of this study is grounded in Lewin's [12] force-field theory of change, Edwards' [13] model of policy implementation, and Gross et al.'s [14] model of curriculum implementation. Lewin's force-field theory posits that change can be effectively implemented by balancing driving and restraining forces. Driving forces, which promote positive change or effective implementation, include the adequacy of instructional materials, physical facilities (school factors), teacher motivation, and attendance (teacher factors) as well as learner attendance and proficiency in the medium of instruction (pupil-related factors) as factors that facilitate curriculum implementation as a change process. Conversely, restraining forces hinder positive change or effective implementation. These include pupil factors (lateness and absenteeism), lack of resources, and teacher-related issues (unpreparedness and irregular attendance). The presence of these negative elements impedes the implementation process of the curriculum. Lewin's theory consists of three stages: unfreezing, moving, and refreezing. Unfreezing involves dismantling old practices and recognizing the need for change. This stage requires motivating implementers through proper communication and practical training [15]. The moving stage occurs when driving forces exceed restraining forces, encouraging implementers to move away from the status quo for successful implementation. The refreezing stage ensures the permanence of new practices by institutionalizing new behaviors, attitudes, knowledge, skills, and norms into daily practices, balancing motivating and restrictive forces for effective curriculum implementation [16].

According to Edwards' [13] model of policy implementation, successful implementation hinges on four key factors: communication, resources, behavior, and bureaucratic structure. Communication involves the process of transferring information or ideas from one place to another. In the context of curriculum implementation, Narsico and Narsico [17] emphasize the crucial role of communication in transmitting curriculum policies or decisions to stakeholders through in-service training programs. Without effective communication of curriculum decisions or policies to classroom teachers for further dissemination to learners, the new curriculum becomes ineffective and meaningless. Aina and Abdulwasiu [18] defines educational resources as any available materials in the tutorial space that facilitate the teaching process, making lesson delivery easier and more convenient. These resources include teacher's manuals, textbooks, human resources, Information and Communication Technology (ICT) tools, community resources, financial resources, and time resources.

Gross et al.'s [14] model posits that implementing educational activities relies on four elements: clarity of the innovation to the teacher, the teacher's aptitude, resource availability, and

management support. Teachers need to understand the purpose of innovation and the best way to implement it. Therefore, successful implementation of the curriculum requires teachers to be aware of any changes or innovations in the curriculum. Based on these theories, it is evident that effective curriculum implementation depends on elements such as the clarity of the innovation to the teacher, the capability of the teacher, management support, and the availability of resources. Thus, these elements should be readily available to ensure the effective delivery of a new educational program or curriculum.

The study conceptualizes school-based factors, teacher-related factors, and pupil-related factors and their effects on effectively executing the CCP in junior high schools in Ghana. School-based factors include instructional materials, physical facilities, monitoring and supervision, and class size. Teacher-related factors encompass teacher attendance, preparedness, and motivation, while pupil-related factors include learner attendance, proficiency in the medium of instruction, and time management.

Figure 1 illustrates the interactions between the variables involved in effectively implementing a curriculum. The study's independent variables include school, teacher, and pupil factors, while the dependent variable is the effective implementation of the curriculum.

The curriculum serves as a fundamental guide for achieving educational objectives and is a crucial element in measuring the quality and impact of education [19, 20]. Sepadi and Molapo [21] support this view, stating that the curriculum guides teachers in preparing, delivering lessons, and assessing learning outcomes. It includes intentionally planned activities to help learners acquire specific knowledge, habits, and emotional responses [22]. Essentially, the curriculum encompasses what teachers plan and teach to prepare learners to be responsible members of society [23]. Aneke et al. [23] define the curriculum as a program of learning experiences and objectives developed and facilitated by educational institutions, using information about students' mental, emotional, and psychomotor development. It acts as a directive document for educational operations. These definitions imply that the curriculum includes all experiences a learner undergoes under the guidance of an educator, aiming to make the learner a valuable member of society and contribute to societal growth.

Curriculum implementation involves a facilitator guiding students to acquire the necessary experiences, knowledge, skills, and attitudes [24]. It essentially means putting a curriculum program into practice. Aneke et al. [23] explain that this involves delivering a structured set of learning experiences using

appropriate resources in interactions between the facilitator and the learner, aiming to reshape the learner's behavior in line with the nation's philosophy. The Common Core Curriculum (CCP), also known as the Common Core Program, is a standards-based curriculum designed to equip students with the ability to critically analyze information and solve problems. Intended for students from JHS1 to SHS1, it addresses shortcomings of the previous curriculum in terms of learning and assessment. The primary objective of the CCP is to provide students with the skills and knowledge needed to creatively tackle social challenges, emphasizing reading, writing, arithmetic, and creativity. The curriculum consists of nine learning categories [25].
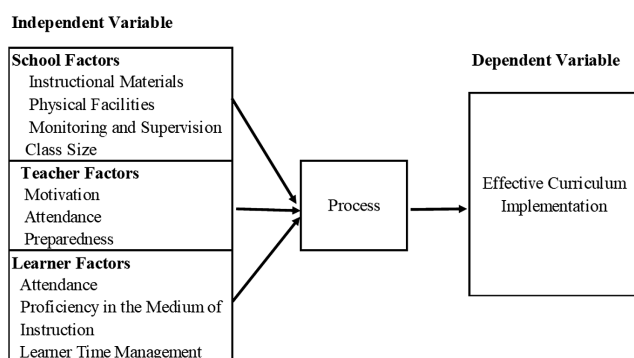
School-based factors, such as instructional materials, physical facilities, class size, and monitoring and supervision, influence the teaching and learning process and, consequently, curriculum implementation [26–28]. Christopher et al. [26], Asamoah et al. [27], and Amadioha [28] indicate that instructional materials are channels of communication used by instructors to convey information to learners. They argue that these materials capture students' interest and focus during the learning process. For instance, concrete teaching aids help create a mental picture of the subject being taught. Engaging learners with teaching materials motivates them and sustains their attention, ensuring educational outcomes are achieved [29]. The accessibility and efficient use of educational resources significantly affect the effectiveness of lesson delivery [30]. Effective educational program implementation relies on effective lesson delivery, which depends on the use of appropriate teaching resources. Ogaga et al. [31] examine the impact of instructional materials on social studies teaching in Oju secondary schools. Using a survey design and questionnaires, they found that educational materials significantly affect lesson delivery effectiveness. Similarly, Isaboke et al. [32] assess the challenges of implementing the competency-based curriculum in Kenya and found that inadequate instructional materials hindered smooth implementation. Teachers reported shortages of textbooks and activity workbooks, posing significant challenges. Changwe and Mulenga [33] study the availability of teaching resources for the Computer Studies curriculum in Ndola, Zambia, concluding that insufficient teaching materials hindered successful implementation. Ndori [34] concurs and finds that poor physical infrastructure in Kenya's public day secondary schools made effective curriculum implementation difficult.

Monitoring and supervision are key tools for achieving effective educational program implementation. Monitoring involves measuring and appraising an activity's effectiveness to identify strengths and weaknesses and suggest improvements [35]. Ampofo et al. [36] examine the impact of direct supervision from school heads on teacher performance in Ghana, finding that lesson planning and delivery monitoring by school leaders significantly improved teacher performance. Similarly, Iroegbu and Etudor-Eyo [37] find that teachers with adequate instructional supervision were more effective. Class size significantly influences educational program implementation. Wadesango et al. [38] find that a high teacher-to-student ratio hindered effective curriculum practice in Zimbabwe. Osai et al. [39] also find that large class sizes in basic schools in Ghana made it difficult for tutors to use varied assessment methods and manage classroom behavior effectively.

Teacher motivation, described as both external and internal drive to achieve desirable outcomes, is crucial for effective curriculum implementation [40]. Motivated teachers inspire students to engage actively, enhancing educational innovations [41, 42]. However, poor motivation negatively affects teacher performance and hinders educational program implementation

Figure 1
A conceptual framework illustrating variables of the study

[43, 44]. Al-Said [41] as well as Kromthamma and Supakicco [42] find that motivational packages significantly and positively enable teachers to develop students' learning skills in schools. Teacher attendance significantly influences students' academic achievement. The presence at work yields positive results, while the absence leads to negative outcomes. According to Játiva et al. [45], teacher absenteeism, including absence from school, punctuality issues, classroom absence, and reduced time on task, negatively affects curriculum implementation. Kearney et al. [46] and Fairman et al. [47] assert that teacher absenteeism hinders educational system reform, leading to inconsistent learning and skill development. Mgema [48] notes that absenteeism reduces instructional hours, preventing syllabus completion and making curriculum implementation ineffective. Teacher preparedness involves planning and making oneself ready to carry out tasks effectively. Effective lesson delivery requires thorough planning, including pre-lesson activities [49, 50]. Ushie and Daniel [49] assert that planning is essential for achieving teaching and learning outcomes. Studies by Isaboke et al. [32], Chemagosi [51], and Specia et al. [52] highlight the importance of adequate teacher training for effective curriculum implementation.

Class attendance is a key factor affecting students' academic achievement. Ancheta et al. [53] find a strong correlation between class attendance and academic performance, emphasizing the importance of regular attendance by learners for academic progress. Regular class attendance leads to better academic performance and effective curriculum implementation. Studies by Sekiwu et al. [54] and Karnik et al. [55] confirm the significant impact of attendance on academic achievement. The medium of instruction, the language used by facilitators to guide learners, plays a vital role in the learning environment. Proficiency in the medium of instruction is crucial for effective educational program implementation. Studies by Wilkinson and Silliman [56], Web Editor [57], and Tom-Lawyer et al. [58] highlight the importance of language proficiency for effective communication and curriculum implementation. Time management is another critical factor for effective curriculum implementation. Alyami et al. [59] find that proper time management leads to positive study habits and better academic performance, enhancing curriculum implementation.

In conclusion, the literature underscores the critical role of various factors in the successful implementation of curricula in educational institutions. Theories by Lewin, Edwards, and Gross provide a comprehensive framework for understanding the dynamics of curriculum implementation, highlighting the importance of balancing driving and restraining forces, effective communication, resource availability, and management support. Empirical studies further emphasize the significance of school-based factors such as instructional materials, physical facilities, and class size; teacher-related factors including motivation, attendance, and preparedness; and pupil-related factors like class attendance and proficiency in the medium of instruction. Addressing these elements is essential for achieving the desired educational outcomes and ensuring that the curriculum effectively prepares learners to meet societal needs and contribute to national development. This study aims to fill the existing literature gap by focusing on the determinants of the implementation of the CCP in Ghanaian junior high schools, thereby providing valuable insights for policymakers and educational practitioners.

3. Methodology

The study employed a quantitative research approach, which involves the collection and analysis of numerical data to address research questions and find solutions to identified issues [60]. The population for this study comprised headteachers and teachers from public junior high schools across Ghana. For the purpose of this research, the country was divided into three distinct strata: North, Central, and South. This stratification facilitated the use of both stratified and simple random sampling techniques to select a representative sample for the study.

The final sample consisted of 436 participants, including 102 headteachers and 334 teachers, drawn from 102 different schools in Ghana. The determination of this sample size was based on the guidelines provided by Krejcie and Morgan [61]. According to their sample size determination table, for a population exceeding 100,000, a sample size of 400 is deemed sufficient to ensure representativeness and statistical reliability. Data collection was carried out using a structured questionnaire designed to capture relevant information from the participants. The data gathered were then subjected to analysis of variance (ANOVA), correlation, and multiple regression analysis, which were used to test all the research hypotheses to determine the predictive strength of the various factors influencing the implementation of the CCP in Ghanaian junior high schools. This methodological approach ensured a robust and comprehensive analysis, enabling the researchers to draw meaningful conclusions and make informed recommendations based on empirical evidence.

4. Findings

4.1. Hypothesis 1

Ho 1: There is no statistically significant relationship between school-based factors and the teacher's effective implementation of the CCP in public junior high schools in Ghana.

Multiple regression was used to establish the magnitude of the relationship and influence between the independent variable (school-based factors) and the dependent variable (effective curriculum implementation). This analysis showed the contribution of each independent variable to the dependent variable and the overall contribution of the model.

The findings in Table 1 supports Pallant's [62] assertion that the values for tolerance were not less than 0.10. The degree to which the other independent variables may explain the specified independent variable's variability is referred to as tolerance. The variance inflation factor (VIF) results equally met the required cutoff point, which revealed that VIF values must be less than 10. It is concluded that multicollinearity was not a problem since tolerance and VIF met the required standard. After all of these assumptions were confirmed, multiple regression analysis was performed to examine the influence of the independent factors on the dependent variable.

Table 1
Multicollinearity test

Variable	Correlation customer satisfaction	Multicollinearity	
		Tolerance	VIF
Instructional materials	0.472	0.946	1.05
Physical facilities	0.095	0.924	1.08
Monitoring and supervision	0.106	0.900	1.11
Class size	0.460	0.922	1.08

Table 2
Multiple regression analysis of school-based factors on effective curriculum implementation

Model	Unstandardized coefficients		Standardized coefficients		
	B	Std. error	Beta	T	Sig.
(Constant)	1.045	3.694		0.283	0.779
Instructional materials	0.256	0.100	0.388	2.556	0.017
Physical facilities	0.037	0.118	0.048	0.315	0.756
Monitoring and supervision	0.540	0.191	0.435	2.829	0.009
Class size	0.235	0.177	0.207	1.329	0.195

From Table 2, it can be shown that, out of the four variables that make up school-based factors, only instructional materials and monitoring and supervision are statistically significant at the 0.05 level of confidence. The results demonstrated that the magnitude of prediction of the independent factors on the dependent variable is grouped according to the standardized beta values of the independent variables in terms of their strength of prediction: monitoring and supervision (beta = 0.435), instructional materials (beta = 0.388, $p < 0.05$), class size (beta = 0.207, $p < 0.05$), and physical facilities (beta = 0.048).

Table 3 shows how each independent variable (school-based factors) contributes to the dependent variable (effective curriculum implementation). The instructional materials contributed R2 results of 0.222, representing 22.2%, which has the highest contribution to effective curriculum implementation. The rest follows in that order monitoring and supervision contributed R2 results of .211 representing 21.1%, class size also contributed R2 results of .011 representing 1.1%, and physical facilities only contributed R2 results of 0.009 representing 0.90%.

4.2. Hypothesis 2

Ho 2: There is no statistically significant relationship between pupils-related factors and the effective implementation of the CCP in public junior high schools in Ghana.

This objective was intended to assess the relationship between pupil-related factors (independent variable) and effective curriculum implementation (dependent variable) and was measured using six items on the questionnaire. The standard p-p plot of regression was diagonal, implying that the predictive variable was strongly related to the dependent variable. The multicollinearity assumption was checked, as presented in Table 4.

Table 3
Contribution of each independent variable on the criterion variable

Variables	R	R square	Percent (%)	Ranks
Instructional materials	0.472	0.222	22.2	1st
Monitoring and supervision	0.460	0.211	21.1	2nd
Class size	0.106	0.011	1.1	3rd
Physical facilities	0.095	0.009	0.90	4th

Table 4
Multicollinearity test

Variable	Correlation curriculum implementation	Multicollinearity	
		Tolerance	VIF
Learners time management	0.482	0.789	1.267
Pupil class attendance	0.316	0.960	1.041
Learners medium of instruction	0.312	0.881	1.135

The results in Table 4 shows that the correlation between the independent variables (learners' time management, pupil class attendance, medium of instruction) and the dependent variable (effective curriculum implementation) was established to be greater than 0.3. This means that the independent variables correlated with the dependent variable. It was also revealed in Table 4 that the values for tolerance were above 0.10. As opined by Pallant [62], tolerance is a measure of the proportion of the variability of a given independent variable that the other independent variables have elucidated. The VIF findings equally satisfied the necessary cutoff point, revealing that VIF values must be fewer than 10. It can, therefore, be maintained from the analysis that the multicollinearity assumption was not violated since Tolerance and VIF met the required standard. After checking all these assumptions, multiple regression analysis was conducted to evaluate the contribution of the independent variables to the dependent variable.

In Table 5, the F-statistics were determined to ascertain the model's strength. The values of the F-statistics 7.055 and the sig value (0.001) indicate that the model significantly influences the dependent variable.

Table 6 indicates the independent variable's contribution to the dependent variable (effective curriculum implementation), as revealed in the model summary. Learners' time management is one of the categories of pupil factors that contributed to R2 results of 0.232, representing 23.2%, and it was placed as the highest contributor to effective curriculum implementation. Pupil class attendance contributed R2 results of 0.099, representing 9.9%, which placed it as the second contributor. Proficiency in the

Table 5
ANOVA dependent variable (effective curriculum implementation) and predictor variables (student-related factors)

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	110.339	4	27.585	7.055	0.001
	Residual	105.574	27	3.910		
	Total	215.913	31			

Table 6
Analysis of results of contribution of each independent variable

Variable	R	R square	Percent (%)	Ranks
Learners time management	0.482	0.232	23.2	1st
Pupil class attendance	0.316	0.099	9.9	2nd
Medium of instruction	0.312	0.097	9.7	3rd

Table 7
Standard multiple regression of pupil-related factors
that influence effective curriculum implementation

Model	Unstandardized coefficients		Standardized coefficients		
	B	Std. error	Beta	*T*	Sig.
(Constant)	2.560	2.420		1.058	0.299
Pupil class attendance	0.176	0.064	0.381	2.776	0.010
Learner proficiency in the medium of instruction	0.886	0.291	0.436	3.040	0.005
Learner time management	0.819	0.213	0.523	3.855	0.001

medium of instruction also contributed to R2 results of 0.097, representing 9.7%, indicating the third contributing factor. The study indicated that learners' time management, pupil class attendance, and proficiency in the medium of instruction are the variables that contribute to effective curriculum implementation.

It is observed in Table 7 that all the pupil-related factors are statistically significant at a 0.05 level of confidence. For the standardized beta values of the predictors, the results disclosed that the magnitude of prediction that the independent variables have on the dependent variable is arranged based on their level of strength of prediction: learners' time management (beta = 0.523), learner proficiency in the medium of instruction (beta = 0.436), and pupil class attendance (beta = 0.381).

4.3. Hypothesis 3

Ho 3: There is no statistically significant relationship between teacher-related factors and the effective implementation of the CCP in public junior high schools in Ghana.

The variables that constitute teacher-related factors are teacher motivation, teacher school attendance, and teacher preparedness. To explore this research hypothesis, the researcher used standard multiple regression. It was used because multiple regression helps demonstrate the strength of the relationship and correlation between the independent and dependent variables. However, before the researcher did the analysis, the underlying assumptions of multiple regression were checked. The assumptions that were checked included normality, multicollinearity, and homoscedasticity.

Table 8 shows that all variables had correlations that were more than 0.3. This indicates that the dependent and independent variables are correlated. The findings in Table 8 shows that the tolerance values were not less than 0.10. Tolerance measures the level of variability in a given independent variable that the other independent variables have not explicated. The VIF results equally met the required cutoff point, which revealed that VIF values must be less than 10. It can, therefore, be maintained from the analysis that the multicollinearity assumption was not violated since tolerance and VIF met the required standard. Multiple regression analysis was used to investigate the impact of the independent variables on the dependent variable after verifying all of these presumptions.

The *F*-statistic from Table 9 is used to evaluate the model's general robustness. The values of the *F*-statistic 5.096 and the sig value (0.006) indicate that the model is highly significant and influential on the dependent variable.

Table 8
Multicollinearity test

Variable	Correlation curriculum implementation	Multicollinearity	
		Tolerance	VIF
Teacher preparedness	0.581	0.789	1.267
Teacher motivation	0.335	0.794	1.259
Teacher school attendance	0.283	0.819	1.221

Table 9
ANOVA dependent variable (effective curriculum
implementation) and predictor variables
(teacher-related factors)

Model		Some of squares	*Df*	Mean square	*F*	Sig.
1	Regression	76.254	3	25.418	5.096	.006
	Residual	139.659	28	4.988		
	Total	215.913	31			

From Table 10, it can be realized from the analysis that, except for teacher preparedness, the rest of the teacher factors used in the study are not statistically significant at a 0.05 confidence level. For the unstandardized and standardized B values of the independent variables, the results showed the magnitude of prediction that every independent variable has on the dependent variable. These are arranged in terms of their strength of prediction as follows: teacher preparedness (beta = 0.695), teacher motivation (beta = 0.120), and teacher school attendance (beta = 0.074). Table 10 illustrates each independent variable's role in the criterion variable.

Table 11 specifies the contribution of the three independent variables to the dependent variable (effective curriculum implementation), as revealed in the model summary. Teacher preparedness is one of the levels of teacher factors, and it obtained a contributed R2 result of 0.337, representing 33.7%, and it was the highest contributor to effective curriculum implementation. Teacher motivation recorded a contributed R2 result of 0.112, representing 11.2%, which placed it as the second contributor. Teacher school attendance obtained a contributed R2 result of 0.080, representing 8.00%, indicating the third contributed factor. The study indicated that teacher preparedness is the variable that contributed to effective curriculum implementation, and the magnitude of the relationship and influence it has on the dependent variable (effective curriculum implementation) is moderate.

5. Discussion

A multiple regression analysis was conducted to examine the relationships between various independent variables, specifically school-based, teacher-based, and learner-based factors, and the dependent variable, which is curriculum implementation. The findings of the analysis revealed that out of the several school-based factors considered, only instructional materials and the quality of monitoring and supervision emerged as statistically significant predictors of curriculum implementation, achieving significance at the 0.05 confidence level. This indicates that these two factors play a crucial role in the successful implementation of the curriculum in educational institutions. The strength of the predictive relationship between the independent and dependent variables was evaluated using standardized beta coefficients, which provided a clear measure of the impact that each independent variable had on the

Table 10
Standard multiple regression of teacher-related factors that influence effective curriculum implementation

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. error	Beta	*T*	Sig.
1	(Constant)	5.495	3.030		1.813	0.080
	Teacher motivation	0.120	0.184	0.111	0.649	0.521
	Teacher school attendance	0.074	0.212	0.059	0.349	0.730
	Teacher preparedness	0.695	0.230	0.516	3.015	0.005

Table 11
Analysis of results of contribution of each independent variable

Variables	*R*	*R* square	Percent (%)	Ranks
Teacher preparedness	0.581	0.337	33.7	1st
Teacher motivation	0.335	0.112	11.2	2nd
Teacher school attendance	0.283	0.080	8.0	3rd

curriculum implementation process. These results are in alignment with previous studies conducted by Ampofo et al. [36], Iroegbu and Etudor-Eyo [37], as well as Christopher et al. [26], all of which have similarly highlighted the importance of the availability of instructional materials and the effectiveness of monitoring and supervision in ensuring the successful implementation of curricula. Their findings reinforce the notion that these factors are critical to achieving desired educational outcomes.

Through correlation analysis, it was determined that all teacher-related variables had correlations exceeding 0.3, and their tolerance values were above the minimum threshold of 0.1, thereby affirming that there was no issue of multicollinearity within the dataset. This is an important consideration as it ensures that the variables can be reliably analyzed without distortion of the results. The subsequent multiple regression analysis revealed that teacher preparedness, teacher motivation, and teacher school attendance were significant contributors to effective curriculum implementation. Notably, teacher preparedness was identified as the most influential factor, accounting for 33.7% of the variance in curriculum implementation. Teacher motivation contributed 11.2%, and teacher school attendance accounted for 8.0%. This finding underscores the importance of ensuring that teachers are adequately prepared, motivated, and consistently present in school as these factors collectively enhance the effectiveness of curriculum implementation. Consistent with this finding are the studies by Isaboke et al. [32], Chemagosi [51], as well as Okeyo and Mokua [50], which highlight the importance of adequate teacher training for effective curriculum implementation.

Moreover, the study extended its scope to assess the impact of pupil-related factors on the practical implementation of the CCP in public junior high schools. Utilizing multiple linear regression analysis, the study examined the correlation between independent variables, such as learners' time management, pupil class attendance, and proficiency in the medium of instruction, and the dependent variable, effective curriculum implementation. The analysis revealed a strong and statistically significant relationship between these pupil-related factors and effective curriculum implementation, with each independent variable achieving significance at the 0.05 confidence level. The findings highlighted that learners' time management, consistent class attendance, and proficiency in the medium of instruction are pivotal to the successful implementation of the curriculum. This study corroborates those of Osai et al. [39], Alyami et al. [59], Chemagosi [51], and Hadisaputra et al. [8], who find that

proper time management leads to positive study habits and better academic performance, enhancing curriculum implementation The predictive strength of these factors was systematically organized, providing a clear understanding of their relative importance in influencing curriculum outcomes.

6. Conclusions and Recommendations

This study highlights the critical factors influencing the effective implementation of the CCP in public junior high schools in the Ghanaian context. The findings reveal that school-based factors such as instructional materials and monitoring and supervision, along with teacher-related factors like motivation, school attendance, and preparedness, play significant roles in curriculum implementation. Additionally, pupil-related factors, including learner time management, class attendance, and proficiency in the medium of instruction, are crucial for successful curriculum delivery. The study underscores the importance of addressing these elements to enhance the educational outcomes in Ghanaian junior high schools.

The government and educational stakeholders should ensure that schools are adequately supplied with instructional materials to facilitate effective teaching and learning processes.

Regular in-service training programs should be provided to enhance teachers' preparedness and motivation. This will equip them with the necessary skills and knowledge for effective curriculum implementation.

Strengthening the monitoring and supervision mechanisms within schools can help ensure that curriculum guidelines are followed and that any challenges are promptly addressed.

Programs aimed at improving learners' time management skills and proficiency in the medium of instruction should be implemented. Additionally, strategies to combat substance abuse among students should be developed and enforced.

Educational policies should be reviewed and updated regularly to reflect the current needs and challenges of the educational system. Adequate support should be provided to schools to ensure the effective implementation of these policies.

Conflicts of Interest

The authors declare that they have no conflicts of interest to this work.

Data Availability Statement

The data that support this work are available upon reasonable request to the corresponding author.

Author Contribution Statement

Ibrahim Abubakari: Conceptualization, Software, Validation, Formal analysis, Investigation, Writing – review & editing,

Visualization, Project administration. **Amadu Musah Abudu:** Methodology, Validation, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration. **Joseph Yaw Dwamena Quansah:** Methodology, Validation, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Project administration.

References

[1] Rowe, S. C. (2017). Liberal education: Cornerstone of democracy. *The American Journal of Economics and Sociology*, *76*(3), 579–617. https://doi.org/10.1111/ajes.12188

[2] Nkansah, J. N. (2021). The future of education in Ghana: Critical education for socio-economic development. *Journal of Interdisciplinary Studies in Education*, *10*(SI), 57–78.

[3] Adams, A.-Z., Intsiful, E., & Zagoon-Sayeed, H. (2024). Exploring public knowledge on technical vocational education in Ghana. *SN Social Sciences*, *4*(5), 98. https://doi.org/10.1007/s43545-024-00898-6

[4] Asante, G., Arhin, D., Essien, N., Bentil, S., & Asibey, G. (2024). Implementation of the standard-based curriculum: An overview of pre-tertiary curriculum in Ghana (1951–2019). *Open Access Library Journal*, *11*, e11125.

[5] Davis, E. K., Ntow, F. D., & Beccles, C. (2022). Factors influencing Ghanaian public junior high school students' performance in English language, mathematics and science and its implications on the national policy on progression. *Sage Open*, *12*(3), 21582440221123912. https://doi.org/10.1177/21582440221123912

[6] Mulenga, I. M. (2018). Conceptualization and definition of a curriculum. *Journal of Lexicography and Terminology*, *2*(2), 1–23.

[7] Cheung, A. C., & Man Wong, P. (2012). Factors affecting the implementation of curriculum reform in Hong Kong: Key findings from a large-scale survey study. *International Journal of Educational Management*, *26*(1), 39–54. https://doi.org/10.1108/09513541211194374

[8] Hadisaputra, P., Haryadi, L. F., Zuhri, M., Thohri, M., & Zulkifli, M. (2024). The role of teachers in curriculum management implementation: A narrative literature review on challenges, best practices, and professional development. *Asian Journal of Education and Social Studies*, *50*(5), 18–27. https://doi.org/10.9734/ajess/2024/v50i51338

[9] Addai-Mununkum, R., & Setordzi, S. (2023). Implementing curriculum change in Ghana: Exploring teachers' experiences with enacting 21st-century pedagogies. *American Journal of Qualitative Research*, *7*(4), 119–139. https://doi.org/10.29333/ajqr/13660

[10] Mathias, L., Mwamakula, F., & Mhagama, M. (2023). Challenges facing public secondary school teachers on implementing competence-based curriculum in Magu District, Mwanza: Tanzania. *International Journal of Social and Development Concerns*, *18*, 160–172. https://doi.org/10.5281/zenodo.10317583

[11] Mahama, I. (2022). Creative teaching as a component of the new standard-based curriculum in Ghana: Curriculum rushed or curriculum planned? *Mediterranean Journal of Social & Behavioral Research*, *6*(1), 27–33. https://doi.org/10.30935/mjosbr/11569

[12] Lewin, K. (1936). *Principles of topological psychology*. USA: McGraw-Hill. https://doi.org/10.1037/10019-000

[13] Edwards III, G. C. (1980). *Implementing public policy*. USA: Congressional Quarterly Press.

[14] Gross, N. C., Giacquinta, J. B., & Bernstein, M. (1971). *Implementing organizational Innovations: A sociological analysis of planned educational changes*. USA: Basic Books.

[15] Agormedah, E. K., Ankomah, F., Frimpong, J. B., Quansah, F., Srem-Sai, M., Hagan Jr, J. E., & Schack, T. (2022). Investigating teachers' experience and self-efficacy beliefs across gender in implementing the new standards-based curriculum in Ghana. *Frontiers in Education*, *7*, 932447. https://doi.org/10.3389/feduc.2022.932447

[16] Bediako, S. (2019). Models and concepts of curriculum implementation, some definitions and influence of implementation. In *Conference on Curriculum Change and Evaluation*. https://doi.org/10.13140/RG.2.2.17850.24009

[17] Narsico, L. O., & Narsico, P. G. (2023). Technical curriculum implementation and evaluation framework. *International Journal of Multidisciplinary: Applied Business and Education Research*, *4*(12), 4168–4181. https://doi.org/10.11594/ijmaber.04.12.02

[18] Aina, J. K., & Abdulwasiu, A. A. (2023). Teachers' effective use of educational resources and their effect on students' learning. *Universitepark Bulletin*, *12*(2), 83–98. https://doi.org/10.22521/unibulletin.2023.122.4

[19] Muttar, S. S., & Harbi Al-Arnoosy, D. U. (2021). Evaluating the curriculum of teaching methods of basic education colleges from the points of view of the teachers. *International Journal of Early Childhood Special Education*, *13*(2), 559–567. https://doi.org/10.9756/int-jecse/v13i2.211093

[20] Karakus, G. (2021). A literary review on curriculum implementation problems. *Shanlax International Journal of Education*, *9*(3), 201–220. https://doi.org/10.34293/education.v9i3.3983

[21] Sepadi, M., & Molapo, K. (2024). Exploring teacher understanding of curriculum and assessment policy statement document implementation in South African schools. *Frontiers in Education*, *9*, 1354959. https://doi.org/10.3389/feduc.2024.1354959

[22] Yidana, M., & Aboagye, K. G. (2018). Management of curriculum change: A mechanism for ensuring continuous academic improvement in Ghanaian universities. *International Journal for Innovation Education and Research*, *6*(2), 41–60. https://doi.org/10.31686/ijier.vol6.iss2.941

[23] Aneke, M. N., Nnabuike, E. K., & Otegbulu, R. I. (2016). Responsive curriculum development: A panacea to the problems of Nigerian educational system and national development. *International Journal of Advanced Research in Management and Social Sciences*, *5*(7), 134–142.

[24] Chaudhary, G. K. (2015). Factors affecting curriculum implementation for students. *International Journal of Applied Research*, *1*(12), 984–986.

[25] Ministry of Education. (2018). *National pre-tertiary education curriculum framework for developing subject curricula*. https://nacca.gov.gh/wp-content/uploads/2019/04/National-Pre-tertiary-Education-Curriculum-Framework-final.pdf

[26] Christopher, F., Komunda, T. R., & Milton, N. (2022). The impact of supervision on the quality-of-service delivery at Kirima Community Secondary School in Kanungu District, South Western Uganda. *International Journal of Academic and Applied Research*, *6*(5), 157–162.

[27] Asamoah, D., Sundeme, B., Quainoo, E. A., Adom-Fynn, D., Yalley, C. E., & Afrane, R. (2020). School environment, teacher-related and student related factors: Critical causes of low academic performance of senior high school students in core mathematics in the Kumasi Metropolis of Ghana. *Journal of Educational and Psychological Research*, *2*(1), 3–15.

[28] Amadioha, S. W. (2009). The importance of instructional materials in our schools an overview. *New Era Research Journal of Human, Educational and Sustainable Development*, 2(3-4), 61–63.

[29] Filgona, J., Sakiyo, J., Gwany, D. M., & Okoronka, A. U. (2020). Motivation in learning. *Asian Journal of Education and Social Studies*, 10(4), 16–37. https://doi.org/10.9734/ajess/2020/v10i430273

[30] Patrick, R. (2019). Comprehensible input and Krashen's theory. *Journal of Classics Teaching*, 20(39), 37–44. https://doi.org/10.1017/S2058631019000060

[31] Ogaga, G. A., Wallace, I., & Egbodo Benson, A. (2016). Effects of instructional materials on the teaching and learning of social studies in secondary schools in Oju local government area of Benue state. *International Journal of Current Research*, 8(7), 33859–33863.

[32] Isaboke, H., Wambiri, G., & Mweru, M. (2021). Challenges facing implementation of the competency-based curriculum in Kenya: An urban view. *International Journal of Education and Research*, 9(9), 71–84.

[33] Changwe, R., & Mulenga, C. L. (2020). Teaching and learning resources and teachers for the implementation of computer studies curriculum in selected public primary schools in Ndola District of Zambia. *European Journal of Education Studies*, 7(10), 97–118.

[34] Ndori, M. M. D. (2021). Teachers challenge of physical facilities on curriculum implementation in public day secondary schools in Hamisi Sub-County, Kenya. *International Journal of Research and Innovation in Social Science*, 5(2), 419–426.

[35] Egana del Sol, P. A. (2020). Education for sustainable development: Strategies and key issues. In W. L. Filho, A. M. Azul, L. Brandli, P. G. Özuyar, & T. Wall (Eds.), *Quality education* (pp. 258–272). Springer. https://doi.org/10.1007/978-3-319-95870-5_3

[36] Ampofo, S. Y., Onyango, G. A., & Ogola, M. (2019). Influence of school heads' direct supervision on teacher role performance in public senior high schools, Central Region, Ghana. *IAFOR Journal of Education*, 7(2), 9–26. https://doi.org/10.22492/ije.7.2.01

[37] Iroegbu, E. E., & Etudor-Eyo, E. (2018). Teacher's participation in quality assurance in private and public secondary schools in Uyo Local Education Committee, Akwa Ibom State, Nigeria: Administrators' perspective. *International Journal of Managerial Studies and Research*, 6(2), 1–9. https://doi.org/10.20431/2349-0349.0602001

[38] Wadesango, N., Hove, J., & Kurebwa, M. (2016). Effects of a large class size on effective curriculum implementation. *International Journal of Educational Sciences*, 12(2), 173–183.

[39] Osai, J. A., Amponsah, K. D., Ampadu, E., & Commey-Mintah, P. (2021). Teachers' experiences with overcrowded classrooms in a basic school in Ghana. *International Online Journal of Primary Education*, 10(1), 73–88.

[40] Oguejiofor, C. N., Anyakora, D. C., & Obiakor, M. I. (2021). Teachers 'motivation as a factor for classroom effectiveness and students' academic performance in secondary schools in educational zones in Enugu State. *British International Journal of Education and Social Sciences*, 8(6), 31–46.

[41] Al-Said, K. (2023). Influence of teacher on student motivation: Opportunities to increase motivational factors during mobile learning. *Education and Information Technologies*, 28(10), 13439–13457. https://doi.org/10.1007/s10639-023-11720-w

[42] Kromthamma, M., & Supakicco, P. S. (2023). Empowering teachers' learning to develop student' inspirational skills. *World Journal of Education*, 13(2), 31–40. https://doi.org/10.5430/wje.v13n2p31

[43] Comighud, S. M. T., & Arevalo, M. J. (2020). Motivation in relation to teachers' performance. *International Journal of Scientific and Research Publications*, 10(4), 641–653.

[44] Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

[45] Játiva, X., Karamperidou, D., Mills, M., Vindrola, S., Wedajo, H., Dsouza, A., & Bergmann, J. (2022). *Time to teach: Teacher attendance and time on task in West and Central Africa*. UNICEF Office of Research-Innocenti. https://files.eric.ed.gov/fulltext/ED624431.pdf

[46] Kearney, C. A., Benoit, L., Gonzálvez, C., & Keppens, G. (2022). School attendance and school absenteeism: A primer for the past, present, and theory of change for the future. *Frontiers in Education*, 7, 1144608. https://doi.org/10.3389/feduc.2022.1044608

[47] Fairman, J. C., Smith, D. J., Pullen, P. C., & Lebel, S. J. (2022). The challenge of keeping teacher professional development relevant. In S. Swaffield & P. E. Poekert (Eds.), *Leadership for professional learning: Perspectives, constructs and connections* (pp. 251–263). Routledge.

[48] Mgema, B. (2022). Teacher absenteeism and curriculum implementation in primary schools in Nyamagana District in Mwanza Region of Tanzania. *East African Journal of Education Studies*, 5(2), 116–124. https://doi.org/10.37284/eajes.5.2.679

[49] Ushie, E. I., & Daniel, K. G. (2022). Effective lesson delivery: The impact of planning and preparation. *Prestige Journal of Education*, 5(2), 113–118.

[50] Okeyo, S. M., & Mokua, Z. O. (2023). Preparedness of teachers for implementing competency-based curriculum system of education in public secondary schools in Nyamira South Sub-County. *East African Journal of Education Studies*, 6(2), 406–418. https://doi.org/10.37284/eajes.6.2.1387

[51] Chemagosi, J. M. (2020). Teachers preparedness on implementation of competence based curriculum in lower public primary schools in Kilifi and Nandi Counties, Kenya. *International Journal of Scientific Research and Management*, 8(4), 1292–1303. https://doi.org/10.18535/ijsrm/v8i04.el04

[52] Specia, A., Barasa, P. L., & Omulando, C. (2022). Influence of teachers' level of preparedness on the implementation of the language activity curriculum at preprimary level in Busia County. *International Journal of Education and Research*, 10(5), 13–22.

[53] Ancheta, R. F., Daniel, D., & Ahmad, R. (2021). Effect of class attendance on academic performance. *European Journal of Education Studies*, 8(9), 115–131. https://doi.org/10.46827/ejes.v8i9.3887

[54] Sekiwu, D., Ssempala, F., & Frances, N. (2020). Investigating the relationship between school attendance and academic performance in universal primary education: The case of Uganda. *African Educational Research Journal*, 8(2), 152–160. https://doi.org/10.30918/AERJ.82.20.017

[55] Karnik, A., Kishore, P., & Meraj, M. (2020). Examining the linkage between class attendance at university and academic performance in an International Branch Campus setting. *Research in Comparative and International Education*, 15(4), 371–390. https://doi.org/10.1177/1745499920958855

[56] Wilkinson, L. C., & Silliman, E. R. (2000). Classroom language and literacy learning. In M. L. Kamil, P. B.

Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3) (pp. 337–360). Lawrence Erlbaum Associates.

[57] Web Editor. (2021). *Medium of instruction at the different levels of education in Bangladesh: Social, cultural and economic division, and inequality.* Bangladesh Education Article. https://bdeduarticle.com/medium-of-instruction/

[58] Tom-Lawyer, O., Thomas, M., & Kalane, M. (2021). Examining the status of English as a medium of instruction in sub-Saharan Africa: A comparative study of Botswana and Nigeria. *European Scientific Journal*, *17*(36), 51–75. https://doi.org/10.19044/esj.2021.v17n36p51

[59] Alyami, A., Abdulwahed, A., Azhar, A., Binsaddik, A., & Bafaraj, S. M. (2021). Impact of time-management on the student's academic performance: A cross-sectional study.

Creative Education, *12*(3), 471–485. https://doi.org/10.4236/ce.2021.123033

[60] Creswell, J. W. (2021). *A concise introduction to mixed methods research*. USA: SAGE Publications.

[61] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*(3), 607–610. https://doi.org/10.1177/001316447003000308

[62] Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. UK: Routledge. https://doi.org/10.4324/9781003117452