

An Empirical Study of Teachers' Perspectives of Quality Education in The Northern Region of Ghana

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ABSTRACT :This study explored pre-tertiary school teachers' perceptions of quality education in the Northern Region of Ghana, guided by the framework of the Input-Process-Output (IPO) Model of education quality. Using a descriptive survey design, data were collected from 250 teachers across primary, junior high, and senior high schools through a structured questionnaire. Respondents were selected using a multi-stage stratified random sampling technique. Quantitative data were analyzed using descriptive statistics, t-tests, ANOVA, and Pearson correlation coefficient. Findings revealed that teachers strongly associate quality education with teacher qualifications ($M = 4.40$), effective teaching methodologies ($M = 4.35$), and sound assessment practices ($M = 4.30$). Key factors which positively correlated with perceived quality included teacher training ($r = 0.62$) and student engagement ($r = 0.68$). Statistically significant differences emerged based on gender ($p = 0.045$) and teaching experience ($p = 0.020$), with more experienced teachers expressing stronger perceptions of quality education. Major challenges identified included an overloaded curriculum (78%), inadequate infrastructure (70%), limited teaching resources (65%), and insufficient continuous teacher training (64%). These barriers hinder the realization of educational quality despite teachers' clear understanding of its key components. The study concluded that bridging the gap between educational policy and classroom realities requires prioritizing infrastructure development, curriculum reform, resource provision, and professional development. The findings provide empirical insights for policymakers and stakeholders aiming to improve education quality in Ghana. The study recommended intensifying in-service training at all levels, revising curricula to reduce work overload on teachers, and improving school facilities.

KEYWORDS: Quality Education, Teachers' Perception, Curriculum, Teaching Methodologies, Student Engagement, Ghana

INTRODUCTION

Quality education is a fundamental pillar of societal development, as it equips individuals with the knowledge, skills, and competencies necessary to thrive in an ever-evolving world. It is widely regarded as a catalyst for social mobility, economic growth, and democratic participation (UNESCO, 2015). The global emphasis on quality education is underscored by the United Nations Sustainable Development Goal 4 (SDG 4), which seeks to ensure inclusive and equitable education as well as promote lifelong learning opportunities for all. Despite this broad global commitment, the definition of quality education remains complex and varies across different stakeholders, including educators, policymakers, and researchers (Bainton et al., 2016).

Teachers, as frontline educators, play a crucial role in the interpretation and delivery of quality education. Their perceptions and beliefs significantly shape instructional strategies, curriculum implementation, and overall student engagement (Berry et al., 2021). While policymakers often emphasize measurable outcomes such as standardized test scores and institutional efficiency, teachers may prioritize classroom dynamics, student motivation, and contextual teaching resources (Wilcox & Lawson, 2018). The disconnect between policy prescriptions and classroom realities necessitates an exploration of teachers' perspectives to ensure that educational reforms align with practical teaching conditions and improve educational outcomes sustainably.

The perception of quality education is influenced by multiple factors, including curriculum design, instructional materials, teacher competence, infrastructure, and assessment methodologies (Ayeni & Adelabu, 2012). For instance, an urban-based teacher with access to digital resources may have a different understanding of quality education than a rural teacher working with limited facilities. Additionally, disparities in teacher training, availability of teaching aids, and classroom sizes can influence how quality is perceived and implemented (Hennessy et al., 2010).

Despite numerous studies that address educational quality from policy or student achievement perspectives (Takyiet al., 2021), limited attention has been given to how teachers themselves conceptualize and assess quality education, especially within the Ghanaian context. Understanding teachers' views is essential, as they are the key implementers of educational reforms and the main

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actors in the teaching-learning process. In Ghana, particularly in the Northern region, challenges such as infrastructural deficits, curriculum overload, and limited teacher support persist and may shape how teachers perceive educational quality.

Again, given the ongoing shifts towards competency-based curricula and the increasing integration of technology in education, it is essential to understand how teachers define and perceive quality education. Therefore, this study seeks to bridge the knowledge gap by examining pre-tertiary teachers' perceptions of quality education in the Northern region of Ghana. The findings will contribute to aligning education policy and teacher development initiatives with the practical realities of teaching and learning, ultimately enhancing the quality of education delivered in the region.

RESEARCH OBJECTIVES

The study was guided by the following objectives which included to:

1. explore how pre-tertiary teachers perceive quality education in the Northern region of Ghana.
2. identify and analyze the key factors that teachers consider critical in determining the quality of education.
3. examine whether significant differences exist in teachers' perceptions of quality education based on demographic characteristics such as gender and years of teaching experience.

Research Questions

The study posed the following research questions:

1. How do pre-tertiary teachers perceive quality education?
2. What factors do teachers consider most critical in determining quality education?
3. Are there significant differences in teachers' perceptions of quality education based on gender and years of experience?

Significance of the Study

By addressing these questions, this study sought to contribute to the discourse on education quality and to provide empirical evidence to inform policy decisions. The findings aimed to bridge the gap between policy expectations and classroom experiences, ensuring that teacher perspectives are considered and admitted in the pursuit of quality education. Findings of this study should also inform the formation of policies intended to promote quality education at all levels of education in Ghana.

LITERATURE REVIEW

Global Perspectives on Quality Education

Globally, quality education is viewed as an essential driver of economic growth and social development. The World Bank (2020) defines quality education as education that ensures all students acquire the knowledge and skills needed for productive citizenship. In developed countries, quality education is often measured through standardized testing, teacher qualifications, and curriculum effectiveness (Islam et al., 2024). In contrast, in developing nations, factors such as school infrastructure, student engagement, and teacher training significantly impact educational quality (Izuchukwu & Zino, 2025).

Studies by Kram (2025) and Durrani et al., (2023), emphasize that effective teaching methodologies, continuous professional development, and formative assessment practices are key determinants of quality education. In Ghana, Oduro (2024), highlights challenges such as resource constraints and curriculum rigidity as barriers to achieving quality education.

African Perspectives on Quality Education

The African context of quality education is shaped by diverse economic, social, and political factors. Many African countries, including Ghana, Nigeria, and Kenya, have implemented various education reforms to improve learning outcomes. However, challenges such as inadequate funding, teacher shortages, and outdated curricula persist (Cheruiyot, 2024). African scholars like Angwaomadoko (2023), argue that beyond infrastructural development, quality education in Africa requires a focus on teacher training, curriculum relevance, and inclusive education policies.

Educational initiatives such as the African Union's Agenda 2063 highlight the need for innovation, digital literacy, and improved teacher competencies to enhance educational quality. Studies indicate that countries that have prioritized these aspects, such as Rwanda and South Africa, have witnessed improvements in student performance and education equity (Addae-Kyeremeh & Boateng, 2024).

Ghanaian Perspectives on Quality Education

In Ghana, quality education has been a central focus of national policy, particularly with the introduction of the Free Senior High School (FSHS) policy. While this initiative has expanded access, concerns remain regarding classroom overcrowding, teacher preparedness, and resource allocation (Tseer et al., 2024). According to Acquah et al (2024), quality education in Ghana hinges on teacher competence, curriculum adaptability, and student-centered learning approaches. Also, research by Edusei, (2022), emphasizes that teacher motivation, professional development, and continuous assessment practices are critical in improving education quality. However, disparities exist between urban and rural schools, with rural areas facing significant challenges in infrastructure and resource availability (Edusei, 2022). These findings highlight the need for policy interventions to ensure equitable access to quality education across all regions in Ghana.

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Theoretical Framework: Input-Process-Outcome (IPO) Model

The Input-Process-Outcome (IPO) Model, developed within systems theory, offers a comprehensive lens for understanding how educational quality is shaped by interconnected factors. Originally introduced to conceptualize performance in organizational and educational settings, the IPO model posits that the quality of outcomes is a function of both the resources invested (inputs) and the processes applied (Chen et al., 2022). In the context of education, this model facilitates a structured approach to examining the multifaceted elements that contribute to student learning and institutional effectiveness.

In the IPO model, **inputs** refer to the foundational resources necessary for effective teaching and learning. These include qualified teachers, relevant curriculum, adequate school infrastructure, and prepared learners. In the context of Ghana's pre-tertiary education system, inputs such as teacher professional development and curriculum relevance are especially critical given existing disparities in resource allocation between urban and rural schools.

Processes describe the methods and interactions involved in teaching and learning. This encompasses classroom instruction, assessment practices, student-teacher engagement, and the integration of technology. Effective processes are essential in translating inputs into meaningful educational experiences. For instance, when well-trained teachers use student-centered teaching strategies, the likelihood of achieving positive learning outcomes is increased (Ghahremani et al., 2022).

Outcomes represent the final component of the model, which includes measurable achievements such as student academic performance, cognitive development, and skill acquisition. The IPO Model aligns well with efforts to assess and improve education quality because it considers not only the end results but also the conditions and mechanisms that lead to those results (Khan et al., 2022).

A conceptual diagram of the IPO model is provided below to illustrate its application in educational research:

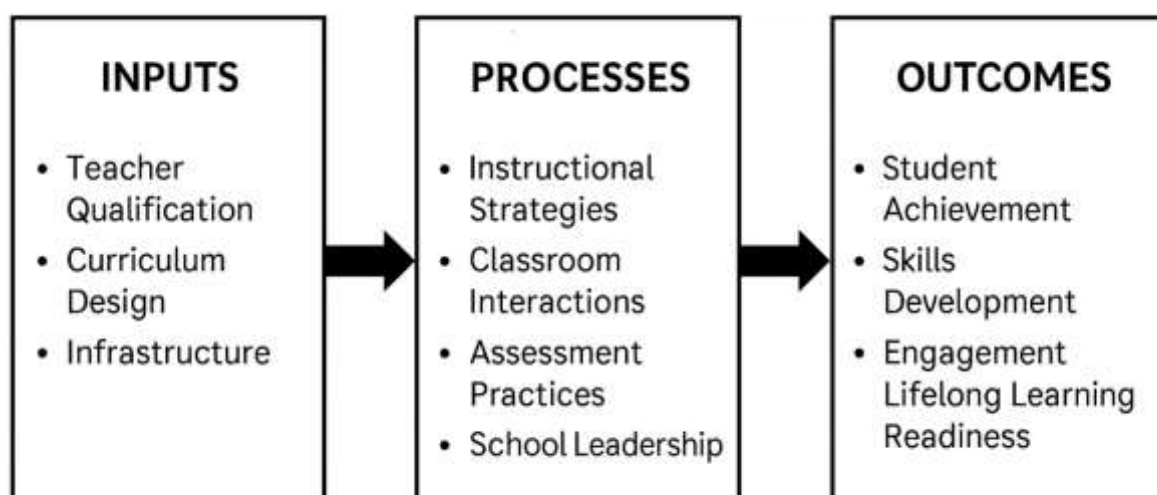


Figure 1: Diagram of the Input-Process-Outcome (IPO) Model

Source:Adapted from the Input-Process-Outcome (IPO) model in educational contexts (Sheerens, 2004)

This model is particularly relevant in examining teachers' perceptions of quality education, as it highlights the dynamic interplay between the resources available in schools, the instructional methods employed, and the results achieved. By analyzing these dimensions, researchers and policymakers can identify strengths and gaps within the education system and implement targeted interventions to enhance overall quality. The IPO model thus provides a valuable theoretical foundation for exploring how teachers perceive, interpret and experience the components of quality education in their schools.

METHODOLOGY

Research Design

This study employed a descriptive survey research design to examine teachers' perceptions of quality education. The descriptive survey method is appropriate for gathering quantitative data on participants' attitudes, beliefs, and experiences in a systematic manner. This design allowed for the collection of numerical data that can be analyzed statistically to identify trends, relationships, and variations in perceptions among different groups of teachers(Alordiah & Ossai, 2023).

Population and Sample

The target population for this study included all pre-tertiary school teachers in the Northern region of Ghana, comprising teachers from public and private primary, junior high, and senior high schools. Due to the unavailability of a comprehensive sampling frame

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detailing the total number of teachers across the region, a multi-stage sampling technique combining purposive, stratified, and random methods was employed to ensure diversity and representativeness within a manageable sample size.

- **Stage 1: Stratified Sampling of School Levels**

Schools in the region were first stratified into three educational levels—primary, junior high, and senior high to reflect the structure of pre-tertiary education in Ghana(Meng, 2013).

- **Stage 2: Purposive Selection of Districts and Schools**

A purposive sampling method was used to select a representative set of districts across the region, considering geographical balance and accessibility(Neyman, 1992). Within each district, a balanced number of schools (both public and private) from each educational stratum were selected to ensure coverage.

- **Stage 3: Simple Random Sampling of Teachers**

From each selected school, teachers were selected through simple random sampling to eliminate bias in respondent selection(Neyman, 1992).

A total of 250 teachers were selected as the final sample size. This number was deemed adequate based on recommendations for survey research involving inferential statistical analyses (Creswell, 2014). Additionally, the sample size exceeded the minimum threshold for generalizability in social science research and aligned with prior similar studies on educational perceptions.

Table 1: Multi-Stage Sampling Framework and Distribution of Sampled Teachers

Stage	Sampling Technique	Details	Selected Units
Stage 1	Stratified Sampling	Schools categorized into Primary, Junior High, and Senior High levels	All school levels included
Stage 2	Purposive Sampling	Selection of 10 districts based on geographical balance and accessibility	10 1. Tamale Metropolitan 2. Sagnarigu Municipal 3. Savelugu Municipality 4. Yendi Municipality 5. Kumbungu District 6. Gushegu District 7. Karaga District 8. Saboba District 9. Nankarala North Municipal 10. Tolon District
Stage 2 (cont'd)	2 Stratified within districts by school level	Selection of 25 schools per district: 13 Primary, 11 JHS, 1 SHS (due to SHS availability)	Total Schools: 10 districts × 25 schools = 250 Schools
Stage 3	Simple Random Sampling	1 teacher randomly selected from each school	Total Teachers: 250 schools × 1 teacher = 250 Teachers

Data Collection Instrument

A structured questionnaire was used as the primary data collection instrument. The questionnaire consisted of closed-ended questions to facilitate quantitative analysis. The instrument was divided into the following sections:

1. **Demographic Information** (e.g., gender, years of teaching experience, educational qualification).

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2. **Teachers' Perceptions of Quality Education** (e.g., curriculum relevance, teaching methodologies, assessment practices, school infrastructure, teacher qualification, student engagement).
3. **Factors Influencing Perceptions** (e.g., Infrastructure, Teacher training, Student engagement, policy awareness).
4. **Challenges and Recommendations** (e.g., barriers to quality education, suggested improvements).

Questionnaire Validation

The questionnaire was pilot-tested on a sample of 30 teachers to assess its reliability and validity before full-scale data collection. Cronbach's alpha coefficient was used to measure the internal consistency of the instrument, yielding a reliability coefficient of 0.85, indicating a high level of reliability.

Data Collection Procedure

Data collection was conducted over a four-week period using both online and face-to-face methods to maximize response rates. Questionnaires were distributed in hard copies to selected schools, while an online version (Google Forms) was shared via email and WhatsApp groups of teachers. Participants were assured of confidentiality and anonymity to encourage honest responses.

Data Analysis Techniques

The collected data were analyzed using Statistical Package for the Social Sciences (SPSS) version 26. The following statistical techniques were employed: Descriptive statistics (i.e. frequencies, percentages, means, and standard deviations were computed to summarize responses and Inferential statistics involving Independent Samples t-test were used to examine differences in perceptions based on gender. Again, One-Way ANOVA technique was used to compare perceptions across different teaching experience levels, while the Pearson Correlation Analysis was also used to assess relationships between teachers' perceptions and other key factors influencing their views on quality education.

Ethical Considerations

This study adhered to ethical research guidelines to ensure the rights and welfare of participants were protected. Ethical approval was obtained from the relevant institutional review board. Key ethical considerations included:

- **Informed Consent:** Participants were provided with details about the study, and their voluntary participation was sought.
- **Confidentiality and Anonymity:** No personally identifiable information was collected, and responses were kept confidential.
- **Right to Withdraw:** Participants had the right to withdraw from the study at any stage without penalty.

RESULTS

This section presents the data from the survey conducted among teachers regarding their perceptions of quality education. Data were analyzed using descriptive statistics (frequencies, means, and standard deviations) and inferential statistics (t-tests, ANOVA, and Pearson correlation analysis). The results are organized according to the research questions.

4.1 Demographic Characteristics of Respondents

A total of 250 teachers participated in the study. Table 1 presents their demographic distribution.

Table 1: Demographic Profile of Respondents

Variable	Categories	Frequency (N)	Percentage (%)
Gender	Male	140	56.0
	Female	110	44.0
Teaching Level	Primary	130	52.0
	Junior High School (JHS)	110	44.0
	Senior High School (SHS/SHTS)	10	4.0
Years of Experience	1 - 5 years	85	34.0
	6 - 10 years	90	36.0
	Above 10 years	75	30.0

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Variable	Categories	Frequency (N)	Percentage (%)
Educational Qualification	Diploma	70	28.0
	Bachelor's Degree	130	52.0
	Master's Degree	50	20.0

From Table 1, the demographic distribution of the respondents reveals a diverse sample of teachers with varying backgrounds. The data indicate that male teachers (56%) outnumber female teachers (44%), suggesting possible gender imbalances in the teaching profession. Most respondents (52%) hold a Bachelor's degree, indicating that the majority of teachers have received higher education, which is crucial for maintaining teaching quality. The distribution of teaching levels in the pre-tertiary level thus, primary, junior high, and senior high school teachers were all captured in the study. Additionally, a considerable proportion (36%) of respondents had between 6 and 10 years of teaching experience, highlighting the presence of moderately experienced educators in the sample.

4.2 Teachers' Perception of Quality Education

The first research question sought to examine how teachers perceive quality education. Respondents were asked to rate various factors on a **5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree)**. Table 2 summarizes the mean responses.

Table 2: Teachers' Perception of Quality Education

Indicator	Mean	SD	Interpretation
Curriculum relevance	4.21	0.78	Strongly Agree
Teaching methodologies	4.35	0.69	Strongly Agree
Teacher qualifications	4.40	0.71	Strongly Agree
Student engagement	4.12	0.84	Agree
School infrastructure	3.98	0.92	Agree
Assessment practices	4.30	0.75	Strongly Agree

The data from Table 2 suggest that teachers strongly associate quality education with teacher qualifications ($M = 4.40$), teaching methodologies ($M = 4.35$), and assessment practices ($M = 4.30$), emphasizing the importance of professional competence and evaluation techniques in improving learning outcomes. However, the relatively lower rating for school infrastructure ($M = 3.98$) indicated concerns about the adequacy of physical learning environments. The results aligned with global discussions on education quality, where factors such as teacher expertise and assessment strategies play significant roles in shaping students' academic success.

Factors Influencing Teachers' Perception of Quality Education

A Pearson correlation analysis was conducted to examine the relationship between key factors influencing teachers' perceptions. Results of the respective coefficients are reported in Table 3.

Table 3: Correlation Matrix

Variable	Teacher Training	Infrastructure	Student Engagement	Policy Awareness
Perceived Quality	0.62	0.51	0.68	0.49

The correlation analysis in Table 3 revealed strong positive relationships between teacher training ($r = 0.62$) and student engagement ($r = 0.68$) with teachers' perceived quality of education, suggesting that well-trained teachers and active student participation are

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moderately crucial determinants of educational success. While infrastructure ($r = 0.51$) and policy awareness ($r = 0.49$) also showed moderate positive correlations, their relatively lower coefficients suggested that they are important but not as influential as pedagogical and student-centered factors. These findings reinforce the need for policies that prioritize teacher training and classroom engagement strategies.

Differences in Perception Based on Demographics

Gender Differences in Perceptions

An independent samples t-test was conducted to compare the perceptions of male and female teachers on quality education. Results of their mean responses are contained in Table 4.

Table 4: Comparison of perception of male and female teachers

Variable	Gender	Mean	SD	t-value	p-value
Perceived Quality	Male	4.22	0.76	2.01	0.045*
	Female	4.08	0.81		

The independent samples t-test results in Table 5 indicate a statistically significant difference ($p = 0.045$) in how male and female teachers perceive quality education, with male teachers reporting slightly higher positive mean perceptions ($M = 4.22$) compared to female teachers ($M = 4.08$). This variation could be attributed to differences in access to professional development, workload distribution, or gender-based experiences in the education system. While the difference is statistically significant, it is relatively small, suggesting that both male and female teachers generally share similar views on what constitutes quality education.

Differences by Teaching Experience

A one-way ANOVA was conducted to examine differences based on years of teaching experience. Data on the number of years of teaching experience is shown in Table 5.

Table 5: Comparison of Perception by Teaching Experience

Experience Level	Mean	SD	F-value	p-value
1-5 years	4.10	0.79	3.89	0.020*
6-10 years	4.22	0.73		
Above 10 years	4.35	0.68		

Table 5 is an ANOVA results conducted to examine the differences in perception of teachers based on their teaching experience. The results revealed significant differences in perceptions of quality education based on years of teaching experience ($p = 0.020 < 0.05$). Teachers with over 10 years of experience had the most positive mean perceptions ($M = 4.35$), while those with 1-5 years of experience rated quality education slightly lower ($M = 4.10$). This suggests that more experienced teachers may have a broader understanding of education quality due to their prolonged exposure to different teaching methodologies, assessment practices, and classroom challenges. This finding underscores the importance of continuous training and mentoring programmes for early-career teachers to enhance their perceptions and effectiveness.

Challenges Affecting Quality Education

Teachers identified the following major challenges affecting quality education as captured in Table 6.

Table 6: Challenges Affecting Quality Education

Challenge	Percentage of Respondents
Overloaded curriculum	78%
Inadequate infrastructure	70%

Challenge	Percentage of Respondents
Overloaded curriculum	78%
Limited access to teaching resources	65%
Lack of continuous teacher training	64%
Ineffective assessment practices	60%

The results presented in Table 7 highlight the major challenges perceived by teachers as affecting the delivery of quality education in pre-tertiary institutions. The most commonly reported challenge was an overloaded curriculum, cited by 78% of respondents, suggesting that excessive and rigid content hampers effective teaching and student understanding. This was followed by inadequate infrastructure (70%), reflecting concerns over poor classroom conditions and lack of essential facilities. Limited access to teaching resources was identified by 65% of teachers, indicating a shortage of instructional materials necessary for engaging lessons. Additionally, 64% of respondents pointed to a lack of continuous teacher training, emphasizing the need for regular professional development to improve instructional practices. Lastly, ineffective assessment practices were reported by 60% of teachers, underscoring the need to revise evaluation methods to better support student learning. These findings underscore the multifaceted barriers to achieving quality education in the region.

DISCUSSION

This study investigated teachers' perceptions of quality education in pre-tertiary institutions by examining key components such as curriculum relevance, teaching methodologies, assessment practices, school infrastructure, teacher qualifications, and student engagement. Using the Input-Process-Outcome (IPO) model as a theoretical lens, the study explored how various inputs (e.g., teacher training, curriculum, infrastructure), educational processes (e.g., teaching strategies, assessments), and outcomes (e.g., student performance, engagement) interact to shape teachers' definitions and evaluations of educational quality.

The findings of this study affirm that teachers perceive quality education as a multidimensional construct encompassing a combination of effective instruction, relevant curricula, adequate infrastructure, continuous assessment, and active student engagement. These perceptions are consistent with the literature, which posits that quality education goes beyond student outcomes to include the conditions that support learning (Trigwell & Prosser, 1991). Lizzio et al (2002), emphasized the critical role of teacher competence and availability of learning resources, both of which emerged as significant concerns in the present study. Teachers' understanding of quality education thus reflects a holistic perspective that incorporates both tangible inputs and pedagogical processes.

The study also highlighted that, curriculum relevance and pedagogical flexibility are essential in promoting student-centered learning. Many respondents expressed dissatisfaction with rigid, exam-oriented curricula, arguing that they limit creativity and fail to prepare students for real-world challenges. This supports Edusei (2022), findings which asserted that curricula in many African countries are outdated and disconnected from current societal and technological needs. Furthermore, the emphasis on interactive teaching methods aligns with Cheng (2019), meta-analyses, which demonstrated that instructional strategies such as feedback, cooperative learning, and problem-solving significantly improve student learning outcomes.

Assessment practices and student engagement issues were another focal point of teachers' perceptions. While acknowledging the importance of summative evaluation, teachers advocated for a more balanced system that incorporates formative assessments. This viewpoint echoed the position espoused by Black and Wiliam (2018), who argued that formative assessments provide continuous feedback that enhances teaching and learning. Teachers also stressed the need for assessments to be aligned with learning objectives as well as cater for diversified student needs. Student engagement was equally emphasized, with many respondents linking it directly to teaching quality and curriculum flexibility. According to Ampofo (2020), student engagement fosters intrinsic motivation and leads to better academic performance, a finding mirrored in this study.

The analysis revealed statistically significant mean differences in perceptions based on gender and teaching experience. Experienced teachers exhibited deeper appreciation of the systemic and contextual factors influencing educational quality. This revelation resonates with that of Darling-Hammond (2016), who noted that experienced educators are more likely to adopt reflective practices and advocate for systemic reforms. Gender differences, while less pronounced, highlighted possible variations in professional development exposure, workload distribution, or school environment that may shape perceptions differently among male and female teachers.

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Challenges to Achieving Quality Education

Despite understanding the components of quality education, teachers reported substantial barriers, including insufficient infrastructure, inadequate professional development, large class sizes, and lack of teaching resources. These challenges aligned with UNESCO's (2021) report on sub-Saharan Africa, which identified resource constraints and teacher shortages as major obstacles to achieving SDG 4. The disparity between urban and rural schools was also evident, with rural teachers reporting more significant challenges and confirming the concerns raised by Kwame and Abeka (2021) regarding educational inequities in Ghana.

Relevance of the IPO Model

The Input-Process-Outcome model provided a coherent framework for interpreting these findings. Inputs such as curriculum and infrastructure were shown to directly influence classroom processes like teaching and assessment, which in turn affected perceived student outcomes such as engagement and academic progress. This system-oriented approach is supported by Toh (2016), who emphasized that sustainable educational reforms must address the interconnectedness of inputs, processes, and outcomes to produce lasting impact. The IPO framework thus proved useful in understanding how teachers conceptualize and evaluate educational quality within their specific contexts.

CONCLUSIONS

This study set out to explore teachers' perceptions of quality education in pre-tertiary institutions within the Northern region of Ghana, guided by the Input-Process-Outcome (IPO) model. The investigation focused on core indicators such as curriculum relevance, teaching methodologies, assessment practices, school infrastructure, teacher qualifications, and student engagement. Using a quantitative approach, the study gathered and analyzed data from 250 teachers across selected schools to understand how these factors influence perceptions of educational quality.

The study revealed that teachers view quality education as a multidimensional construct grounded in well-trained educators, flexible and relevant curricula, interactive teaching methods, continuous assessment, and supportive school environments. The application of the Input-Process-Outcome (IPO) model provided a structured lens through which teachers' perspectives were analyzed, showing how educational inputs and processes influence perceived outcomes. Significant mean differences in teacher perceptions were found relative to gender and teaching experience, suggesting the need for differentiated professional development and support strategies. Ultimately, the study highlighted that, enhancing education quality requires both systemic reforms and targeted investments in teacher capacity, infrastructure, and student engagement strategies.

RECOMMENDATIONS

Based on the conclusions on the findings of this study, the following recommendations were proposed to enhance the delivery of quality of education in pre-tertiary institutions in the Northern region of Ghana and beyond:

1. Strengthen Teacher Professional Development

School authorities should institute and strengthen continuing in-service training, and professional development programmes be prioritized to equip teachers with modern pedagogical skills, curriculum adaptation strategies, and innovative assessment techniques. Emphasis should be placed on participatory and student-centered instructional methods that foster engagement and critical thinking.

2. Revise and Modernize the Curriculum

It is also recommended that, the Ministry of Education and Ghana Education Service should collaborate with curriculum experts and frontline teachers to revise existing curricula to reflect the evolving needs of 21st-century learners. Curriculum flexibility must be promoted to allow contextual adaptation to local realities, especially in under-resourced schools.

3. Invest in Educational Infrastructure and Resources

The study further recommends that the government of Ghana and other stakeholders should allocate adequate funding to improve the physical infrastructure of schools, particularly in rural areas. This includes the provision of teaching and learning materials, ICT tools, libraries, and laboratories to create conducive learning environments.

4. Promote Balanced Assessment Practices

The study recommends that school authority adopt more holistic assessment approaches that combines formative and summative assessments. This will help teachers track student progress continuously and make timely instructional adjustments to support diverse learners.

POLICY IMPLICATIONS

The findings from this study provide several key implications for educational policy in Ghana:

1. Integration of Teacher Perceptions into Policy Formulation

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Policymakers should systematically incorporate teachers' insights when designing education policies and reforms. Since teachers are directly involved in classroom implementation, their perspectives can enhance the practicality and relevance of educational initiatives.

2. Strengthening Teacher Training Standards

National education policies should mandate regular and structured professional development programmes focused on contemporary teaching methods, curriculum delivery, and assessment practices to ensure consistent education quality across regions.

3. Equity-Based Resource Distribution

Policies must address regional disparities by allocating educational resources equitably, with a focus on rural and underserved schools. This includes investment in infrastructure, learning materials, and digital tools to bridge the quality gap between urban and rural institutions.

4. Curriculum Reforms Aligned with Global Trends:

The national curriculum should be periodically reviewed and updated to reflect modern pedagogical trends, technological integration, and the competencies required for 21st-century learning. This would ensure that teaching content remains relevant and forward-looking.

REFERENCES

- 1) Acquah, A., Attila, F. L., & Yalley, C. E. (2024). A critical review of the Free Senior High School policy in Ghana within the framework of development of curriculum. *Journal of Advance Research in Social Science & Humanities* ISSN, 2208, 2387.
- 2) Addae-Kyeremeh, E., & Boateng, F. (2024). New national teacher education curriculum in Ghana: Successes and challenges. In *Practitioner Research in College-Based Education* (pp. 233–266). IGI Global.
- 3) Alordiah, C. O., & Ossai, J. N. (2023). Enhancing Questionnaire Design: Theoretical Perspectives on Capturing Attitudes and Beliefs in Social Studies Research. *International Journal of Innovative Science and Research Technology*, 8(10).
- 4) Ampofo, R. E. (2020). Integrating the teaching of social studies with science in the colleges of education in the central region of Ghana. University of Cape Coast.
- 5) Angwaomadoko, E. A. (2023). A Comparative Study of Education Systems in Nigeria and Other Developing Countries. Available at SSRN 4853871.
- 6) Ayeni, A. J., & Adelabu, M. A. (2012). Improving learning infrastructure and environment for sustainable quality assurance practice in secondary schools in Ondo State, South-West, Nigeria. *International Journal of Research Studies in Education*, 1(1), 61–68.
- 7) Bainton, D., Barrett, A. M., & Tikly, L. (2016). Improving secondary school teacher quality in sub-Saharan Africa. University of Bristol: Bristol, UK.
- 8) Berry, B., Darling-Hammond, L., & Mackay, A. (2021). Teacher leadership for whole child education: A global perspective. SC-TEACHER of the University of South Carolina, Columbia SC.
- 9) Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice*, 25(6), 551–575.
- 10) Chen, Z., Bao, Y., & Zhu, T. (2022). An empirical study on IPO model construction of undergraduate education quality evaluation in China from the statistical pattern recognition approach in NLP. *ACM Transactions on Asian and Low-Resource Language Information Processing*, 21(6), 1–18.
- 11) Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2019). Effects of the flipped classroom instructional strategy on students' learning outcomes: A meta-analysis. *Educational Technology Research and Development*, 67, 793–824.
- 12) Cheruiyot, B. (2024). Evaluating teaching practice in Kenya: Successes and failures. *East African Journal of Education Studies*, 7(4), 735–741.
- 13) Darling-Hammond, L. (2016). Research on teaching and teacher education and its influences on policy and practice. *Educational Researcher*, 45(2), 83–91.
- 14) Durrani, N., Qanay, G., Mir, G., Helmer, J., Polat, F., Karimova, N., & Temirbekova, A. (2023). Achieving SDG 4, Equitable quality education after COVID-19: Global evidence and a case study of Kazakhstan. *Sustainability*, 15(20), 14725.
- 15) Edusei, B. (2022). Towards achieving the sustainable development goal four (4) in Ghana: The role of the free senior high school programme. University of Windsor (Canada).
- 16) Ghahremani, M., Pereira, N., Desmet, O. A., & Gentry, M. (2022). Students' experiences in summer enrichment engineering courses: an input–process–outcome model of collaborative creativity. *Journal of Advanced Academics*, 33(1), 69–103.
- 17) Hennessy, S., Harrison, D., & Wamakote, L. (2010). Teacher factors influencing classroom use of ICT in Sub-Saharan Africa. *Itupale Online Journal of African Studies*, 2(1), 39–54.

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- 18) Ikram, M., Saleem, S. M. U., & Mehmood, W. (2025). The impact of education quality indicators on students' satisfaction. *Journal of Applied Research in Higher Education*.
- 19) Islam, M. H., Nayeem, M. A., Liton, M. I. A., Sizan, J. J., & Sadik, S. (2024). The role of educational technology in enhancing learning in developing countries. *Journal of Scientific Reports*, 7(1), 197–212.
- 20) Izuchukwu Precious, O., & Zino, I.-O. (2025). Global Education Policies and Their Influence on Environmental Sustainability. *Journal of Integrity Ecosystems and Environment*, 3(2), 1–24.
- 21) Khan, P. A., Johl, S. K., Akhtar, S., Asif, M., Salameh, A. A., & Kanesan, T. (2022). Open innovation of institutional investors and higher education system in creating open approach for SDG-4 quality education: a conceptual review. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1), 49.
- 22) Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: implications for theory and practice. *Studies in Higher Education*, 27(1), 27–52.
- 23) Meng, X. (2013). Scalable simple random sampling and stratified sampling. *International Conference on Machine Learning*, 531–539. PMLR.
- 24) Neyman, J. (1992). On the two different aspects of the representative method: the method of stratified sampling and the method of purposive selection. In *Breakthroughs in statistics: Methodology and distribution* (pp. 123–150). Springer.
- 25) Oduro, H. (2024). Factors influencing implementation of early childhood new curriculum in public schools at Bia-West District. University of Education, Winneba.
- 26) Scheerens, J. (2004). An input-process-output framework for assessing quality education. UNESCO.
- 27) Takyi, S. A., Amponsah, O., Asibey, M. O., & Ayambire, R. A. (2021). An overview of Ghana's educational system and its implication for educational equity. *International Journal of Leadership in Education*, 24(2), 157–182.
- 28) Toh, Y. (2016). Leading sustainable pedagogical reform with technology for student-centred learning: A complexity perspective. *Journal of Educational Change*, 17(2), 145–169.
- 29) Trigwell, K., & Prosser, M. (1991). Improving the quality of student learning: the influence of learning context and student approaches to learning on learning outcomes. *Higher Education*, 22(3), 251–266.
- 30) Tseer, T., Ngmenkpiewo, F., & Damwah, A. K. (2024). Unpacking the dynamics of educational access and teacher wellbeing in Ghana's free senior high school policy. *Social Sciences & Humanities Open*, 10, 100984.
- 31) Wilcox, K. C., & Lawson, H. A. (2018). Teachers' agency, efficacy, engagement, and emotional resilience during policy innovation implementation. *Journal of Educational Change*, 19, 181–204.



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