International Journal of Education and Teaching Zone
Volume 5, Issue 2, 2026, pp. 418-437

https://doi.org/10.57092/ijetz.v5i2.806
p-ISSN: 2963-7899 | e-ISSN: 2830-7925

Original Article

Quality Assurance Systems and Student Academic Learning Outcomes among Private Universities: An Ordinal Orbit Regression Analysis

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Abstract: This study examines the relationship between quality assurance (QA) systems and student academic performance and satisfaction in Ghana's private universities. Guided by total quality management theory, QA is seen as a continuous improvement framework that integrates stakeholder satisfaction, process optimisation, and institutional learning. The study used ordinal probit regression to analyse how students perceive QA in shaping their learning experiences and to evaluate the effects of QA practices on academic performance and satisfaction. Surveys were used to collect data from 281 students in selected private universities. Key QA dimensions included teaching quality improvement, curriculum review, institutional self-assessment, and resource adequacy. Findings show that QA systems are widely institutionalised, but their impact on student outcomes is uneven. Teaching quality improvement is the strongest predictor of academic performance and satisfaction. The findings verify the significance of TQM in higher education institutions. They offer practical guidance for university leaders and regulators to prioritise QA investments that directly enhance teaching, evaluation, assessment, and resource allocation. This alignment can improve student performance, satisfaction, and institutional credibility in competitive higher education environments·

Keywords :
Academic satisfaction; Academic performance; Total quality management; Student perception

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Article History:
Received 17 April 2026; Revised 8 May 2026; Accepted 8 June 2026
Available online 30 June 2026

INTRODUCTION

In sub-Saharan Africa, the expansion of higher education has been accompanied by diversification in providers, including a significant rise in private universities and university colleges (Matovu, 2018; UNESCO, 2018). Similarly, higher education has been expanding phenomenally in Ghana, emulating these continental trends. Public universities alone have not been able to admit all the increasing number of qualified applicants, leading

to the expansion of private universities, which constitute a significant share of the tertiary sector over the past two decades (Alabi *et al*., 2018; Esseh *et al*., 2024). According to recent data, Ghana's tertiary landscape is mixed, comprising public universities, technical universities, and an increasing number of chartered and affiliated private institutions, all operating under an integrated national regulatory framework (Esseh *et al*., 2024; Ghana Tertiary Education Commission [GTEC], 2024a).

The growth of higher education has created opportunities for a broader approach and programme variety, but it has also heightened concerns about academic values, staffing, physical infrastructure, and safeguarding students from inferior or unlicensed providers (Alabi *et al*., 2018; Arthur & Kuranchie, 2022). Empirical studies from Ghana highlight concerns such as dependence on part-time faculty, limited teaching and learning resources, uneven implementation of internal QA mechanisms, and variable levels of student involvement in quality processes across both public and private institutions (Atsu, 2015; Aweso, 2023; Dei, 2019). At the same time, student-level outcomes such as satisfaction with teaching and services, perceived learning gains, and employability are increasingly used as indicators of quality and competitiveness in higher education (Esseh *et al*., 2024).

To address these challenges, Ghana has increasingly enhanced its national QA architecture. The Ghana Tertiary Education Commission, formed by the consolidation of the former National Accreditation Board and the National Council for Tertiary Education, now functions as the single regulator responsible for accreditation, programme approval, institutional categorisation, and ongoing monitoring of both private and public providers (GTEC, 2024a; GTEC, 2024b). Beyond external QA, policy and research emphasize the importance of robust internal quality assurance (IQA) systems at the institutional level, including QA units, systematic course and lecturer evaluations, self-assessment, and feedback mechanisms that actively involve students (Alabi *et al*., 2018; Arthur & Kuranchie, 2022; Aweso, 2023). These structures are intended to foster a quality culture that shapes students' academic and non-academic experiences.

The current Ghanaian literature on QA has primarily focused on regulatory frameworks, institutional structures, and the views of administrators and faculty, with relatively little attention to how students, particularly in private universities, experience QA practices (Atsu, 2015; Dei, 2019; Odjidja, 2023). Where students' views are recognised, the emphasis often falls on the value of service and approval rather than on the specific effects of QA mechanisms on instruction, learning and assistance programmes in private institutions (Esseh *et al*., 2024). This scenario develops a significant empirical and policy gap, given that private universities play a vital role in meeting demand for higher education and are comprehensively reliant on their reputation for excellence in recruiting and retaining students.

Against this backdrop, this study examines the impact of quality assurance practices on students in Ghana’s private universities. Specifically, it investigates how quality assurance policies, structures, and practices influence students’ academic performance, academic satisfaction, and overall learning experiences, while exploring students’ perceptions of the role of quality assurance in shaping their engagement, confidence, and satisfaction with the educational environment. By foregrounding students’ perspectives, the study contributes to strengthening quality assurance practices and quality culture in Ghana’s private higher education sector. The findings are expected to provide empirical

evidence to inform institutional leaders, policymakers, regulators, and other stakeholders in enhancing educational quality and protecting students' interests.

THEORETICAL SUPPORT

Quality assurance (QA) in higher education has been conceptualised through several theoretical perspectives, including the command-and-control model, the self-regulation model, the market regulation model, stakeholder theory, and Total Quality Management (TQM) theory (Deming, 1986; Freeman, 1984; Hallinger & Walker, 2017). These theories provide different explanations of how quality is regulated and enhanced through accountability, institutional autonomy, stakeholder engagement, and continuous improvement. The command-and-control model promotes regulatory compliance but may reduce QA to bureaucratic processes, while the self-regulation and market regulation models emphasise institutional autonomy and competition, although neither fully guarantees improvements in teaching quality or student outcomes. Stakeholder theory highlights the importance of students, employers, governments, and society in defining educational quality (Freeman, 1984), yet offers limited guidance on the operational mechanisms needed for sustained quality enhancement, particularly in the context of Ghana's private higher education sector.

Given the objectives of this study, analysing how students perceive the role of QA in shaping learning experiences and examining the effect of QA practices on academic performance and satisfaction, TQM provides a more comprehensive and operationally grounded framework. TQM conceptualises quality as a dynamic, organisation-wide commitment to continuous improvement rather than a static outcome or external obligation. Emerging from the work of Deming, Juran, Crosby, Feigenbaum, and Ishikawa, TQM emphasises process optimisation, defect prevention, participatory responsibility, and responsiveness to stakeholder needs. The shift from "total quality control" to "total quality management" signified a move from inspection-based control to an integrated organisational culture and leadership commitment (Dale *et al*., 2007; Feigenbaum, 1983). This evolution is particularly relevant in Ghana's higher education system. Additionally, implementation and internalization of QA practices remain uneven. Theoretically, quality in HE is integrally defined, encompassing notions of excellence, fitness for purpose, value for money, and transformation (Harvey & Green, 1993; Harvey & Williams, 2010). These numerous explanations emphasise the importance of a framework capable of combining diverse expectations. TQM examines this complexity by positioning stakeholder satisfaction, mostly student experience, at the centre of institutional processes, while maintaining accountability and systematic evaluation. Its focus on continuous improvement, institutional learning, and collective responsibility aligns directly with this study's examination of teaching quality enhancement, faculty evaluation, curriculum review, and evaluation practices as mechanisms that affect student outcomes.

By combining responsibility, autonomy, and stakeholder engagement within a continuous improvement paradigm, TQM offers an all-inclusive explanatory lens for understanding how QA systems translate into academic performance and satisfaction. This study moves beyond compliance-based interpretations of QA and analyses how

internalised quality practices shape students' learning experiences in Ghana's private universities. Figure 1 shows four levels of TQM evolution.

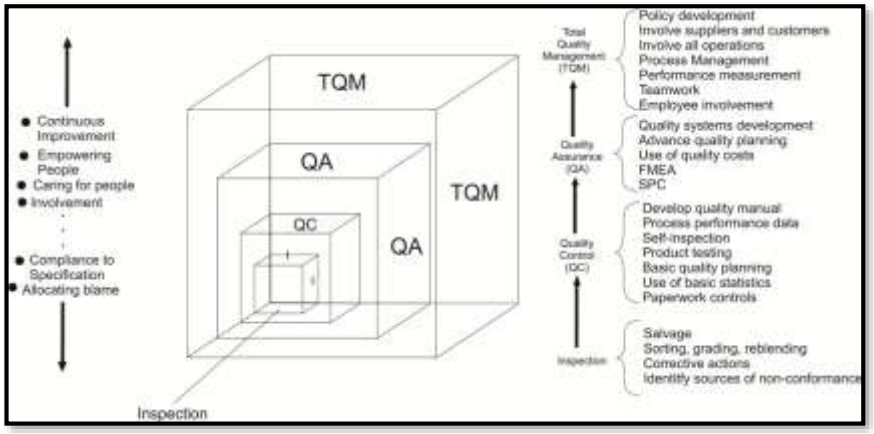

Figure 1. The four levels in the evolution of TQM (Source: Dale et al. 2016)

Quality assurance and student academic outcomes

The relationship between quality assurance (QA) and student academic performance is commonly explained through the perspectives of learning outcomes and quality culture. QA aligns curriculum, teaching, assessment, and student support to achieve intended learning outcomes while promoting effective teaching, relevant curricula, continuous assessment, feedback, and institutional accountability, all of which enhance students' knowledge, competencies, and academic performance (Harvey, 2018). Contemporary QA systems increasingly regard student learning outcomes as the primary indicator of educational quality by linking programme objectives with measurable student achievement (Asamoah et al., 2022). In the African context, the African Quality Rating Mechanism (AQRM) and the African Standards and Guidelines for Quality Assurance in Higher Education (ASG-QA) emphasise the use of student achievement data for continuous quality improvement, recognising QA as a key driver of improved teaching, learning, and research outcomes (African Union & HAQAA Initiative, 2018; HAQAA3, 2024). Consistent with the principles of Total Quality Management (TQM), effective QA practices including quality planning, monitoring, aligned assessments, lecturer evaluation, and timely feedback create a quality culture that strengthens student engagement, supports at-risk learners, and ultimately improves academic performance (Asamoah et al., 2025; Pramono & Widiyanto, 2024; Asamoah et al., 2022; Odjidja, 2023).

Collectively, contemporary theory recommends that QA impacts educational outcomes indirectly, but effectively by shaping how teaching is developed and executed, how learning is evaluated, and how institutions respond to performance data. QA generates or regulates the conditions under which students thrive. Empirical evidence from diverse fields confirms that certain QA practices are associated with student academic performance, such as assessment feedback loops, curriculum alignment and internal review systems. At the international level, studies on learning-outcome evaluation show that universities that integrate efficient assessment and use the outcomes to improve curriculum and teaching often report improvements in student achievement and retention

(de Freitas *et al*., 2025). Despite the overarching benefits of QA systems and practices, critiques of QA dynamics also focus on the effectiveness of internal QA systems in improving student performance indicators (CHEA, 2022; Pramono & Widiyanto, 2024).

METHOD

The study adopted a positivist paradigm to objectively examine the relationships between quality assurance practices and students' academic outcomes, consistent with the empirical orientation of positivist philosophy (Ali, 2024). Accordingly, a quantitative approach employing a descriptive cross-sectional survey design was used to investigate the effects of quality assurance practices on students' academic performance and satisfaction in private universities in Ghana. The study involved 10 chartered private universities that had operated for at least 10 years and were undergoing reaccreditation in accordance with the NAB LI 1984 requirement for executive recognition as fully developed private universities. A sample of 300 students was determined using the Krejcie and Morgan (1970) sample size table, of which 281 valid responses were obtained for analysis. Stratified random sampling was employed to ensure equal selection opportunities, minimise sampling bias, and enhance the representativeness of the sample (Noor et al., 2022).

Data were collected using a structured questionnaire adapted from validated instruments (Atsu, 2015; Ginns et al., 2007; Kember & Leung, 2009; Van Damme, 2004). The questionnaire employed a four-point Likert scale (1 = strongly disagree to 4 = strongly agree) to measure students' perceptions of quality assurance (QA) practices, compliance with Ghana Tertiary Education Commission (GTEC) standards, academic performance, academic satisfaction, and QA implementation challenges. A pilot study conducted at a private university in the Ashanti Region confirmed the instrument's reliability and validity. Following informed consent, data were collected from students across 10 private universities in Ghana, yielding 281 valid responses. Data were analysed using SPSS, with descriptive statistics (frequencies, percentages, means, and standard deviations) and ordinal probit regression to examine the effects of QA practices on students' academic performance and satisfaction. Ethical approval was obtained from the University of South Africa's College of Education Ethics Review Committee (Ref: 2023/11/08/19291655/42/AM), and all participants voluntarily consented to participate with assurances of anonymity and confidentiality.

RESULTS AND DISCUSSION

This section addresses the research question: *What is the effect of quality assurance on students' academic performance and satisfaction?* The analysis employed ordinal probit regression to examine the effects of quality assurance practices on students' academic performance and satisfaction. The results are presented in two parts. First, descriptive statistics and correlation analysis provide an overview of the data, including the mean, standard deviation, and minimum and maximum values of the study variables (Table 1). Second, the econometric results of the ordinal probit regression are presented to

assess the relationships between quality assurance practices and students' academic outcomes.

Table 1. A summary statistics of the variables used in the empirical models

Variables	N	Minimum	Maximum	Mean	Std Dev	Skewness	Kurtosis
Teaching Quality Improvement	281	1.00	4.00	3.1957	.44815	.554	1.925
Curriculum Review	281	2.00	4.00	3.1210	.47767	.340	.986
Assessment Transparency and Fairness	281	1.00	4.00	2.9466	.71264	-.340	.041
Learning Resources Accessibility	281	2.00	4.00	3.1388	.55930	.037	.017
Faculty Evaluation and Development	281	2.00	4.00	2.9253	.42858	-.427	2.210
Compliance with Accreditation Standards	281	2.00	4.00	3.1281	.57130	.005	-.060
Incorporation of Student Feedback	281	2.00	4.00	2.9609	.41649	-.263	2.755
Academic Performance	281	2.00	4.00	3.2722	.45874	.553	-.804
Satisfaction	281	1.00	4.00	2.9698	.59008	-.224	-.193
Valid N (listwise)	281						

Source: Researcher's Computation (2024)

Table 1 presents the descriptive statistics for the quality assurance variables based on 281 respondents, with all variables measured on a four-point Likert scale. Overall, respondents reported favourable perceptions of quality assurance practices. Teaching Quality Improvement recorded the highest mean score (M = 3.20, SD = 0.45), followed by Learning Resources Accessibility (M = 3.14, SD = 0.56), Adherence to Accreditation Standards (M = 3.13, SD = 0.57), and Curriculum Review (M = 3.12, SD = 0.48). Assessment Transparency and Fairness (M = 2.95, SD = 0.71), Faculty Evaluation and Development (M = 2.93, SD = 0.43), and Incorporation of Student Feedback (M = 2.96, SD = 0.42) received comparatively lower, though still positive, ratings. Students also reported positive academic performance (M = 3.27, SD = 0.46) and academic satisfaction (M = 2.97, SD = 0.59). The skewness and kurtosis values for all variables were within acceptable ranges, indicating no substantial deviation from normality and confirming the suitability of the data for subsequent ordinal probit regression analysis.

Multicollinearity testing

The correlation matrix for all variables used in the regression models is computed and presented in Table 2. The correlation coefficient provides an index of direction, indicated by the sign of the coefficient, which indicates whether the relationship is positively or negatively related, as well as the strength of the relationship. To determine whether there is a clear relationship or no connection among the variables, a multicollinearity test is performed. This suggests that a certain degree of correlation is appropriate, but it should not be perfect. Therefore, either -1 or 1 is appropriate. As an element of the Gauss-Markov principles, this test is necessary in regression analysis to ensure that the variables do not already have a significant impact on one another before the regression analysis is performed (Wooldridge, 2015). Also, it suggests the value of the

coefficient between the set of variables but does not imply any form of causality. The essence of the correlation matrix is to identify highly correlated variables, which are then excluded from the model. In other words, highly correlated variables lead to multicollinearity. This situation makes it very difficult to estimate the actual effect of the regressors on the dependent variable. The correlation matrices for the variables are displayed in Table 2 below.

Table 2. Correlation matrix

Variable	Teaching Quality Improvement	Curriculum Review	Assessment Transparency and Fairness	Learning Resources Accessibility	Faculty Evaluation and Development	Compliance with Accreditation Standards	Incorporation of Student Feedback
Teaching Quality Improvement	1						
Curriculum Review	.194**	1					
Assessment Transparency and Fairness	.185**	.637**	1				
Learning Resources Accessibility	.047	.325**	.377**	1			
Faculty Evaluation and Development	.381**	.503**	.347**	.295**	1		
Compliance with Accreditation Standards	.049	.261**	.541**	.159**	.239**	1	
Incorporation of Student Feedback	.336**	.386**	.573**	.361**	.345**	.228**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 presents the correlation matrix among the quality assurance variables. Teaching Quality Improvement was positively associated with Curriculum Review (r = .194, $p < .01$) and Faculty Evaluation and Development (r = .381, $p < .01$). Curriculum Review also showed a strong positive relationship with Assessment Transparency and Fairness (r = .637, $p < .01$), while Assessment Transparency and Fairness was positively correlated with Learning Resources Accessibility (r = .377, $p < .01$) and Adherence to Accreditation Standards (r = .541, $p < .01$). Faculty Evaluation and Development was significantly associated with Curriculum Review (r = .503, $p < .01$), and Incorporation of Student Feedback demonstrated significant positive correlations with Teaching Quality

Improvement (r = .336, $p < .01$) and Assessment Transparency and Fairness (r = .573, $p < .01$). Overall, the variables exhibited significant positive relationships without evidence of perfect correlations, indicating that multicollinearity was not a major concern. To further minimise potential multicollinearity, highly correlated variables w

Variance inflation factor (VIF)

The VIF was also used to assess multicollinearity in an ordinal probit regression model with two dependent variables: Academic Performance and Satisfaction. The VIF was used in addition to the correlation matrix because it provides a reliable measure, allowing us to understand the degree to which multicollinearity might affect the stability and interpretability of regression coefficients. The VIF values obtained for the independent variables are presented in Table 3.

Table 3. Variance inflation factor

Model	Collinearity Statistics VIF	Tolerance
(Constant)		
Teaching Quality Improvement	1.293	.773
Curriculum Review	2.101	.476
Assessment Transparency and Fairness	2.946	.339
Learning Resources Accessibility	1.279	.782
Faculty Evaluation and Development	1.650	.606
Compliance with Accreditation Standards	1.494	.670
Incorporation of Student Feedback	1.761	.568

a. Dependent Variables: Academic Performance & Satisfaction

The results indicate that the VIF values range from 1.279 to 2.946. Thus, all values fall below the critical threshold of 3, which indicates the presence of multicollinearity. This finding suggests that there is no multicollinearity among the independent variables in the model. It enhances the reliability of regression coefficients and allows the effects of individual predictors to be interpreted with greater confidence. Given these results, the variables included in the analysis are suitable for the ordinal probit regression model, thereby supporting the robustness of the findings on the impact of quality assurance on students' academic performance and satisfaction.

Impact of QA on students' academic performance and satisfaction

Test of parallel lines

It is necessary to test the assumption of equal regression coefficients before analysing the estimated coefficients of the ordinal regression model, as this evaluation is crucial for ensuring the model's performance and fit for purpose. This test evaluates whether the slope coefficients (location parameters) are consistent across the response categories. This measurement aims to minimize bias in the obtained data and enable more optimal generalizations and yield better conclusions.

Table 4. Test of parallel lines[a]

Model	-2 Log-Likelihood	Chi-Square	df	Sig.
Null Hypothesis	399.103			
General	296.473[b]	102.629[C]	18	.124

The null hypothesis posits that the slope coefficients are equal across the categories of the dependent variable. The observed significance value of Sig. = 0.124 is greater than 0.05, leading us to accept the null hypothesis and conclude that the model is validated. As a result, the ordinal probit regression can be used based on these findings. By employing the parallel lines assumption, ordinal probit regression examines the relationships among independent variables and their influence on the dependent variable specifically, university academic performance allowing for a thorough analysis.

Table 5. Test of parallel lines[a]

Model	-2 Log-Likelihood	Chi-Square	df	Sig.
Null Hypothesis	427.720			
General	366.117[b]	61.603[c]	24	.105

The null hypothesis asserts that the slope coefficients are consistent across the categories of the dependent variable. According to Table 5, the null hypothesis is not rejected, as the observed significance value (Sig.) is not significant: 0.105 exceeds the 0.05 threshold. This acceptance indicates that the model confirms that the proportional odds (parallel lines) assumption is not violated, which is one aspect of the model's adequacy. Hence, the use of the ordinal regression model helps establish the relationships among the independent variables and their effects on the dependent variable, satisfaction.

Model Fitting Information Test

The Model Fitting Information Test compares the performance of the model with no independent variables (the intercept-only model) with that of the model that includes independent variables. The results are summarised in Tables 6 and 7, respectively, which present the -2 log-likelihood values for both models:

Table 6. Model fitting information

Model	-2 Log-Likelihood	Chi-Square	Df	Sig.
Intercept-Only	538.184			
Final	399.103	139.082	6	.000

The significance value obtained from the analysis is Sig. = 0.000, which is less than the threshold of 0.05. This result leads us to reject the null hypothesis, confirming that the model is significant (i.e., the independent variables contribute positively) both with the constant term and with the independent variables. Therefore, this finding indicates a statistically significant relationship between the dependent variable and the independent variables included in the model. This relationship clearly demonstrates the interconnections between variables that must be considered when formulating policy.

Table 7. Model fitting information

Model	-2 Log-Likelihood	Chi-Square	df	Sig.
Intercept-Only	719.943			
Final	427.720	292.223	6	.000

The analysis yielded a significance value of Sig. = 0.000, which is below the 0.05 threshold. As a result, the null hypothesis is rejected, indicating that the model is significant. This suggests that the independent variables, both with the constant term and individually, make a positive contribution to the model (i.e., the independent variables contribute positively) in both cases, with and without the constant term.

Analysis of the goodness-of-fit test

Tables 8 and 9 present the results of the Goodness-of-fit test, which evaluates the adequacy of the Probit model.

Table 8. Model of fit test (Goodness-of-fit)

	Chi-Square	df	Sig.
Pearson	2 838.899	90	.146
Deviance	386.054	90	.867

This test relies on the significance value (Sig-Deviance). Table 8 reveals a significance level of Sig. = 0.867, which is greater than 0.05, indicating that we fail to reject the null hypothesis. This finding suggests that the Probit model provides a satisfactory fit for the data, indicating that the difference between the observed and expected values is not statistically significant.

Table 9. Model of fit test (Goodness-of-fit)

	Chi-Square	df	Sig.
Pearson	4 441.983	114	.167
Deviance	472.198	114	1.000

This test is based on the significance value (Sig. = Deviance). Table 9 shows the significance level (Sig.). = 1.000, which exceeds the 0.05 threshold. Therefore, it fails to reject the null hypothesis. This outcome implies that the Probit model provides an acceptable fit to the data, indicating that the difference between the observed and expected values is not statistically significant.

Pseudo r-square test

The Pseudo R-squared test is used to evaluate the model's fit, indicating how well it represents a given set of observations. Specifically, the Pseudo R-squared value assesses the strength of the relationship between the dependent variable and the independent variables. Among various Pseudo R-squared statistics, McFadden, Cox-Snell, and Nagelkerke R^2 are the most commonly used. Tables 10 and 11 present the results of the Pseudo R-Square analysis.

Table 10. Pseudo R-square

	Pseudo R-Square
Cox and Snell	.390
Nagelkerke	.442
McFadden	.231

Using the Nagelkerke R^2 coefficient, the independent variables included in the model account for approximately 44.2% of the variance in the dependent variable. Similarly, the Cox and Snell R^2 indicates that the model explains around 39.0% of the variance. This percentage implies that, while the model demonstrates some explanatory power, a proportion of the variation in the dependent variable remains unexplained by the other variables not included in the model.

Table 11. Pseudo R-square

	Pseudo R-Square
Cox and Snell	.647
Nagelkerke	.686
McFadden	.365

The Nagelkerke R^2 coefficient reveals that the independent variables in the model account for 68.6% of the variance in the dependent variable. Also, the Cox and Snell R^2 indicates that the model explains 64.7% of the variance. This suggests that, although the model demonstrates high explanatory power, a proportion of the variation in the dependent variable remains unexplained by the other variables not included in the model.

Analysis of parameter estimates from the ordinal probit regression

Table 12 presents the parameter estimates from the ordinal probit regression, which examines the relationship between various predictors and levels of academic performance. This model is particularly relevant in educational research, where the dependent variable is categorical and ordered, such as academic performance levels.

Table 12. Parameter estimates

		Estimate	Std. Error	Wald	df	Sig.
Threshold	[Academic Performance = 2.00]	4.040	.888	20.685	1	.000
	[Academic Performance = 2.50]	5.242	.836	39.348	1	.000
	[Academic Performance = 3.00]	7.893	.884	79.720	1	.000
	[Academic Performance = 3.50]	8.433	.898	88.233	1	.000
Location	Teaching Quality Improvement	1.355	.193	49.442	1	.000
	Curriculum Review	1.293	.196	43.475	1	.000
	Learning Resources Accessibility	-.277	.155	3.199	1	.074
	Faculty Evaluation and Development	-.765	.221	11.932	1	.001
	Compliance with Accreditation Standards	.321	.136	5.576	1	.018
	Incorporation of Student Feedback	.384	.221	3.038	1	.081

As the threshold category in Table 12 reflects, the threshold for achieving an academic performance score of 2.50 (Estimate = 5.242) is higher than that of 2.00

(Estimate = 4.040), indicating that as one moves from a lower to a higher category of performance, an increase in the latent variable is necessary. This relationship illustrates the ordinal nature of the dependent variable, where each performance level depends on the preceding one. In addition, the standard errors for the thresholds at 2.00, 2.50, and 3.00 are 0.888, 0.836, and 0.884, respectively. These relatively small standard errors suggest that the estimates are stable and reliable, providing high confidence in these thresholds. Minor standard errors indicate that the estimates are less likely to vary widely from the actual population parameters, emphasising the validity of the model. The Wald values for all thresholds are high, with the 3.50 threshold yielding a Wald statistic of 88.233. The Wald statistic is calculated as the square of the estimate divided by its standard error. Higher values indicate that the corresponding threshold is significantly different from zero. In this case, all thresholds have Wald statistics with p-values < .001, confirming their statistical significance. This significance implies that the thresholds are not only meaningful but also represent the points at which the likelihood of achieving higher academic performance levels changes.

As the location category in Table 12 indicates, the estimate of 1.355 at the 0.000 significance level suggests a strong positive relationship between teaching quality and academic performance. This finding is consistent with the existing literature, which emphasises the critical role of effective teaching in enhancing student outcomes (Ardenlid *et al*., 2025). Similarly, the estimate of 1.293, also significant at $p < .001$, indicates that regular curriculum reviews have a positive impact on academic performance. Research supports this assertion, indicating that a well-structured curriculum aligned with student needs can lead to improved educational outcomes (Klein, 2016). The negative estimate of -.277, with a significance level of .074, suggests that accessibility to learning resources may not be as influential as anticipated. This finding raises questions about the adequacy and relevance of the resources provided, echoing concerns raised by recent studies that highlight disparities in resource allocation (Baker *et al*., 2019).

Regarding faculty evaluation and development, the negative estimate of -.765, significant at $p < .001$, suggests that ineffective processes may negatively impact academic performance. This finding aligns with research suggesting that faculty development programmes must be robust and targeted to enhance teaching effectiveness (Sims & Fletcher-Wood, 2021). The positive estimate of .321, significant at $p < .05$, suggests that adherence to accreditation standards is positively associated with academic performance. This finding is supported by the literature, which indicates that accreditation processes can enhance institutional quality and accountability (Harvey, 2018). The estimate of 0.384, with a significance level of 0.081, indicates a positive relationship, although the (sig) value is greater than 0.05. This figure suggests that student feedback may have a beneficial impact, but further study is needed to fully understand its role. Recent studies have stressed the importance of student voices in shaping educational practices (Cook-Sather *et al*., 2023). Table 13 presents the parameter estimates from the ordinal probit regression, which examines the relationship between various predictors and satisfaction. Each satisfaction predictor represents and plays a significant role in influencing policies, particularly within the realm of higher education.

Table 13. Parameter estimates

		Estimate	Std. Error	Wald	df	Sig.
Threshold	[Satisfaction = 1.00]	5.469	1.117	23.980	1	.000
	[Satisfaction = 2.00]	8.744	.893	95.981	1	.000
	[Satisfaction = 2.50]	9.207	.897	105.282	1	.000
	[Satisfaction = 3.00]	11.176	.953	137.421	1	.000
	[Satisfaction = 3.50]	12.473	1.022	149.043	1	.000
Location	Teaching Quality Improvement	2.095	.213	96.794	1	.000
	Curriculum Review	-.759	.182	17.304	1	.000
	Learning Resources Accessibility	.371	.141	6.956	1	.008
	Faculty Evaluation and Development	.838	.212	15.642	1	.000
	Compliance with Accreditation Standards	-.174	.125	1.927	1	.165
	Incorporation of Student Feedback	.959	.206	21.580		.000

From Table 13, the threshold estimates increase across satisfaction categories (e.g., from 8.744 for 2.00 to 9.207 for 2.50), confirming the ordinal nature of the dependent variable, where higher satisfaction levels require higher values of the latent variable. The relatively small standard errors (0.893–0.953) and significant Wald statistics (all $p < .001$) indicate that the threshold estimates are reliable and significantly different from zero. Furthermore, the analysis reveals that Teaching Quality Improvement has a significant positive effect on satisfaction (Estimate = 2.095, $p < .001$), supporting previous findings that effective teaching enhances student satisfaction (Rehman et al., 2022). In contrast, Regular Curriculum Review demonstrates a significant negative effect on satisfaction (Estimate = −0.759, $p < .001$), suggesting that curriculum revisions may not fully meet students' expectations or perceived needs (Gul & Khilji, 2021).

Moreover, the positive estimate of .371, significant at $p < .01$, indicates that access to learning resources positively influences satisfaction, supporting the idea that resource availability is important for enhancing student experiences (Lucander & Christersson, 2020). The estimate of .838, significant at $p < .001$, suggests that faculty evaluation and development processes positively affect satisfaction, aligning with research indicating that faculty development programmes enhance teaching effectiveness (Donaldson, 2020). The negative estimate of -.174, with a significance level of .165, suggests that compliance with accreditation standards may not have a significant impact on satisfaction, indicating that further research is needed to understand its role fully (Anyidoho, 2023). Lastly, the positive estimate of .959, significant at $p < .001$, indicates that incorporating student feedback is important for improving satisfaction.

Students' perceptions of QA roles

The purpose of this research question was to investigate how students perceive the role of QA in Ghana. Table 14 presents students' perceptions of QA's functions within their universities. The overall mean score across various statements was M = 3.03, SD = 0.65, indicating a generally high perception of the roles of QA practices. The highest mean value reported was for the statement "QA raises the reputation of the university," with a

mean of M = 3.38, SD = .53. This suggests that students believed QA significantly contributed to enhancing their institutions' standing. The lowest mean value was associated with the statement "QA gives recognition to students," which scored M = 2.59, SD = .65. Students also expressed a strong belief in the role of QA in achieving the university's mission, with a mean of M = 3.34, SD = .48. This reflects an understanding that effective QA is crucial for strategic alignment and institutional success.

Furthermore, the mean score of M = 3.11, SD = .62 for the statement regarding adequate academic and staff resources indicates that while students recognised the importance of these resources, there was room for improvement in this area. The findings highlight that, while students generally view QA positively, there are critical areas that need attention, particularly regarding student recognition and resource adequacy. Thus, students' perspectives on the functions of QA reveal a solid foundation of support for its roles, as evidenced by the overall mean. However, to enhance the effectiveness of QA practices, institutions must focus on improving the recognition of student achievements and ensuring sufficient academic resources. Table 14 presents students' perceptions of the roles of QA.

Table 14. Students' views on the functions of QA

Statements	Mean	SD
QA helps the university achieve its mission and vision	3.34	.48
QA raises the reputation of the university	3.38	.53
QA ensures that there are adequate academic and staff resources in the university	3.11	.62
QA ensures that the university provides infrastructure for teaching and learning	3.20	.56
QA helps to ensure programme/ curricular improvement	3.18	.51
QA gives recognition to the university locally	3.20	.54
QA gives recognition to the university internationally	3.01	.74
QA gives recognition to students	2.59	.65
QA makes students feel prestigious	3.00	.92
QA gives recognition to students' certificates	3.18	.84
QA ensures students have the requisite resources for learning	3.00	.87
QA ensures competition among universities	3.14	.91
Mean of Means/Average Std. Deviation	3.03	.65

Source: Fieldwork (2024)

The findings demonstrate that quality assurance (QA) practices significantly influence students' academic performance and satisfaction in private universities in Ghana. The ordinal probit regression analysis indicates that positive perceptions of QA, particularly in teaching quality improvement, curriculum review, and faculty evaluation, are associated with better academic outcomes and higher levels of student satisfaction. These results suggest that universities that prioritise effective teaching practices and continuous curriculum enhancement create learning environments that support student success. This finding is consistent with previous research highlighting that effective quality assurance is a key driver of educational effectiveness and improved student learning outcomes (Ardenlid et al., 2025). Learning outcomes will be of high quality if quality assurance is carried out more meticulously and to the fullest extent.

The positive relationship between teaching quality improvement and student satisfaction highlights the importance of effective instructional practices in enhancing students' educational experiences. This finding supports previous research showing that students who perceive their instructors as competent and supportive tend to report higher levels of satisfaction (Rehman et al., 2022). Conversely, concerns regarding assessment transparency and fairness suggest that some students perceive evaluation practices as unclear or inequitable, indicating a need for greater clarity in assessment procedures. This finding is consistent with Gul and Khilji (2021), who emphasise that transparent assessment practices are essential for building student trust, confidence, and overall satisfaction. Student satisfaction will be a driving force for high-quality education.

The findings further indicate that access to learning resources and effective faculty evaluation significantly contribute to students' academic performance and satisfaction. Adequate learning materials, technology, and support services create an environment that promotes student success, consistent with the findings of Lucander and Christersson (2020). Likewise, continuous faculty evaluation and professional development enhance teaching effectiveness, leading to improved student outcomes (Donaldson, 2020). However, the negative association between curriculum review and student satisfaction suggests that curriculum revision processes may not sufficiently address students' needs or labour market demands. This finding supports Klein (2016), who argues that curricula should be continuously aligned with contemporary educational requirements and informed by student perspectives to sustain engagement and satisfaction.

In conclusion, the research findings underscore the significant impact of quality assurance on students' academic performance and satisfaction in private universities in Ghana. The positive relationships identified among various QA dimensions, such as teaching quality, curriculum review and faculty evaluation, highlight the importance of effective QA practices in enhancing educational outcomes. These insights not only contribute to the existing body of literature but also have practical implications for policy and practice within private universities. These findings advance the literature by empirically demonstrating that quality assurance operates as a mediating mechanism between institutional practices and student outcomes, rather than as a peripheral administrative function. While Amoako and Asamoah-Gyimah (2020), Mensah (2022), and international studies consistently report positive links between QA and student satisfaction, contrasting evidence from Nukpetsi *et al*. (2023) suggests that QA alone may not significantly improve outcomes in teacher training colleges. The difference lies in context: private universities operate in competitive environments where QA improvements directly affect student retention and institutional reputation, thereby magnifying their impact. This contextual explanation extends QA theory by demonstrating that institutional incentives and governance structures influence the effectiveness of quality assurance, particularly in market-oriented HE systems such as Ghana's private sector.

Again, regarding students' perceptions of the role of quality assurance, the findings indicate that students in private universities generally hold positive perceptions, as reflected in the high overall mean score. This suggests that QA is increasingly internalised by students as a substantive institutional function rather than merely a regulatory

requirement. The strong agreement that QA helps universities achieve their mission and raise institutional reputation reinforces the view that QA is strategically aligned with institutional effectiveness. These results are consistent with Harvey and Stensaker (2008), who argue that strategic coherence in QA strengthens alignment between institutional objectives and educational outcomes. Students' perception that QA enhances institutional reputation also aligns with Dolcini *et al*. (2021), who emphasise the role of QA in elevating institutional credibility and attractiveness.

The relatively high ratings for curriculum improvement and infrastructure provision further suggest that students recognise QA as contributing to core academic processes rather than symbolic compliance. However, the lower mean for "QA gives recognition to students" reveals a notable gap. While students acknowledge institutional-level benefits of QA, they perceive limited direct personal recognition. This finding supports Peters' (2024) argument that recognition mechanisms are essential for fostering student motivation and engagement. Without a visible acknowledgement of student achievements, QA may appear institution-centred rather than student-centred.

Similarly, concerns regarding the adequacy of academic and staff resources reflect capacity-related tensions, echoing Albaroudi and Iqbal (2024), who contend that effective QA systems depend on sufficient infrastructure and staffing. The findings, therefore, mirror broader patterns observed in Ghanaian private higher education, where QA is increasingly accepted as strategic (Amoako & Asamoah-Gyimah, 2020; Mensah, 2022), yet operational constraints persist. Overall, the results demonstrate that students view QA as integral to institutional reputation, mission achievement, and academic improvement. Nonetheless, strengthening student recognition mechanisms and ensuring adequate resources are essential to ensure that QA systems are experienced not only as institutional safeguards but also as student-centred quality enhancement processes.

This study concludes that quality assurance (QA) significantly improves student outcomes in Ghana's private universities, with teaching quality improvement emerging as the strongest predictor of academic performance and student satisfaction. Faculty evaluation, professional development, and transparent assessment practices also contribute positively, whereas curriculum review, despite improving academic performance, is negatively associated with student satisfaction. However, the effectiveness of QA is constrained by limited ICT infrastructure, learning resources, funding, and staffing. Therefore, universities and regulators should prioritise investments in teaching quality, Faculty development, fair assessment, and institutional capacity to maximize student success. Alignment in these arrangements fosters optimal learning.

Policy implications

The findings of this study have important implications for higher education policy and institutional governance in Ghana's private university sector. Grounded in Total Quality Management (TQM) theory, the evidence suggests that quality assurance (QA) should be understood as a continuous improvement system rather than a compliance mechanism. TQM emphasises customer focus, continuous process enhancement, leadership commitment, and stakeholder involvement. In the context of private higher

education, students represent primary stakeholders. Therefore, QA policy must shift from inspection-based regulation to an enhancement-oriented governance model. The evidence shows that quality assurance systems influence both academic performance and student satisfaction. However, the effects are uneven across dimensions. Policy responses must, therefore, be differentiated across institutional, regulatory, and national governance levels.

Institutional-level policy implications

First, teaching quality improvement should remain the core priority of QA policy, as it has the strongest positive influence on both academic performance and student satisfaction. Universities should strengthen continuous professional development through mentoring, peer review, and pedagogical training. Second, faculty evaluation should emphasise formative feedback and professional growth rather than accountability alone, ensuring that appraisal systems support teaching improvement. Third, curriculum review should adopt a more participatory approach by involving students and improving communication to reduce dissatisfaction during curriculum reforms. Fourth, universities should institutionalise student feedback systems that not only collect feedback but also demonstrate how it informs institutional improvements. Finally, institutions should address structural constraints by investing in ICT infrastructure, learning resources, and staffing to ensure that QA initiatives can effectively improve student outcomes.

Regulatory-level policy implications

At the regulatory level, accreditation should move beyond compliance-based evaluation toward enhancement-focused quality assurance. Although accreditation supports academic performance, it does not necessarily improve student satisfaction. Therefore, regulatory bodies should adopt outcome-based standards that emphasise teaching quality, assessment transparency, student engagement, and continuous improvement. In addition, quality assurance frameworks should evaluate both academic performance and student satisfaction to ensure that institutional quality reflects not only compliance with standards but also students' educational experiences.

National governance and incentive structures

The findings also indicate that QA effectiveness is shaped by the competitive nature of private higher education, where institutional quality influences student retention and enrolment. Accordingly, national policies should promote incentive-based mechanisms, such as performance-based funding, public reporting of quality indicators, and institutional quality awards, to encourage continuous improvement. Furthermore, QA should be integrated into institutional strategic planning, aligning teaching quality, student engagement, and resource allocation, rather than being implemented solely as a compliance requirement.

CONCLUSION

In summary, effective QA policy in Ghana's private higher education sector requires a shift from compliance-driven regulation to TQM-informed continuous improvement

systems. Institutional policies should prioritise teaching enhancement, structured faculty development, participatory curriculum governance, and the integration of student voice to strengthen the quality of teaching and learning. Regulatory bodies should adopt enhancement-based accountability models, while national governance structures should align incentives, funding, and benchmarking with measurable student outcomes. Through coordinated efforts, QA systems can improve academic performance, student satisfaction, and overall educational quality. While this study provides important empirical insights into the relationship between quality assurance (QA) systems, student academic performance, and satisfaction in Ghana's private universities, several limitations should be acknowledged. First, the cross-sectional design restricts causal interpretation, as QA systems are iterative and their effects may emerge over time. Second, although the study is grounded in TQM, the framework may not fully capture the regulatory and institutional complexities of QA implementation in emerging higher education systems. Despite these limitations, the findings provide a valuable foundation for future longitudinal and theory-informed research and offer practical guidance for improving educational quality and teaching effectiveness in higher education.

REFERENCES

Ahmad, T. (2019). Scenario-based approach to re-imagining future of higher education which prepares students for the future of work. Higher Education, Skills and Work-Based Learning, 10(2), 217–238. https://doi.org/10.1108/HESWBL-12-2018-0136

Alabi, J., Alabi, G., Adjei, R., Dzandu, P., Utuka, G., & Munkaila, A. (2018). Quality assurance in Ghanaian higher education institutions: Opportunities and constraints. Council for the Development of Social Science Research in Africa (CODESRIA).

Albaroudi, H. B., & Iqbal, S. (2024). Role of leadership styles in connecting quality culture and university performance: A higher education perspective from Saudi Arabia. The TQM Journal, 37(6), 1643–1665. https://doi.org/10.1108/TQM-02-2024-0072

Ali, I. M. (2024). A guide for positivist research paradigm: From philosophy to methodology. Idealogy Journal, 9(2), 187–196. https://doi.org/10.24191/idealogy.v9i2.596

Amoako, I., & Asamoah-Gyimah, K. (2020). Indicators of students' satisfaction of quality education services in some selected universities in Ghana. South African Journal of Higher Education, 34(5), 61–72. https://doi.org/10.20853/34-5-4252

Anyidoho, E. D. (2023). Exploring internal quality assurance management practices: Experiences of some quality assurance actors at the University of Ghana. Ghana Journal of Higher Education Management, 9(1), 1–16. Retrieved from https://journals.uew.edu.gh/index.php/ghajhem/article/view/148

Ardenlid, F., Lundqvist, J., & Sund, L. (2025). A scoping review and thematic analysis of differentiated instruction practices: How teachers foster inclusive classrooms for all students, including gifted students. International Journal of Educational Research Open, 8, 100439. https://doi.org/10.1016/j.ijedro.2025.100439

Arthur, G. A., & Kuranchie, A. (2022). Quality assurance in private higher education institutions in Ghana: Practices and challenges. Social Education Research, 4(3), 342–360. https://doi.org/10.37256/ser.3220221604

Asamoah, M. K., Ansong, J. D., Mackin, E., Agyekum, B., & Eshun, S. N. (2025). The influence of quality assurance on achieving development education goals. Discover Education, 4(468), 1–29. https://doi.org/10.1007/s44217-025-00694-1

Atsu, N. S. (2015). Quality assurance practices in private universities in the Greater Accra Region of Ghana (Master's thesis, University of Cape Coast).

Aweso, D. M. (2023). Internal quality assurance policies and practices in colleges of education in Ghana: Resource dependency theory perspective. British Journal of Education, 11(5), 39–54. https://doi.org/10.37745/bje.2013/vol11n53954

Baker, T., & Smith, L. (2019). Educ-AI-tion rebooted? Exploring the future of artificial intelligence in schools and colleges. Nesta Foundation. Retrieved January 9, 2026 \from https://media.nesta.org.uk/documents/Future_of_AI_and_education_v5_WEB.pdf

Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. Journal of the Australasian Rehabilitation Nurses Association, 22(2), 27–30. https://search.informit.org/doi/10.3316/informit.738299924514584

Cook-Sather, A., Slates, S., Acai, A., Aquilina, S., Ajani, K., Arm, K., Besson, M., Brennan, J., Brockbank, M., Carter, K., & Cassum, S. (2023). How can students-as-partners work inform assessment? International Journal for Students as Partners, 7(1), 218–234. https://doi.org/10.15173/ijsap.v7i1.5302

Dale, B. G., Bamford, D., & Van der Wiele, T. (2016). Managing quality (6th ed.). Wiley.

Dale, B. G., van der Wiele, T., & van Iwaarden, J. (2007). Managing quality (5th ed.). Wiley-Blackwell.

de Freitas, S., Curtis, G. J., & Ritchie, S. M. (2025). A multi-layered evaluation of university-wide education interventions to improve student engagement and retention. Journal of Further and Higher Education, 49(10), 1348–1362. https://doi.org/10.1080/0309877X.2025.2560999

Dei, D. G. J. (2019). Assessing quality assurance practices in institutions of higher learning. International Journal of Learning, Teaching and Educational Research, 18(12), 30–45. https://doi.org/10.26803/ijlter.18.12.3

Deming, W. E. (1986). Out of the crisis. MIT Press.

Dolcini, M. M., Davey-Rothwell, M. A., Singh, R. R., Catania, J. A., Gandelman, A. A., Narayanan, V., Harris, J., & McKay, V. R. (2021). Use of effective training and quality assurance strategies is associated with high-fidelity EBI implementation in practice settings: A case analysis. Translational Behavioural Medicine, 11(1), 34–45. https://doi.org/10.1093/tbm/ibz164

Donaldson, M. (2020). Multidisciplinary perspectives on teacher evaluation: Understanding the research and theory. Routledge.

Esseh, S. S., Ry-Kottoh, L. A., & Denyo, M. M. (2024). Examining service quality in Ghanaian higher education: A comparative analysis of private and public universities. E-Journal of Humanities, Arts and Social Sciences, 5(7), 1391–1410. https://doi.org/10.38159/ehass.20245725

Feigenbaum, A. V. (1983). Quality control (3rd ed.). New York: McGraw-Hill.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). How to design and evaluate research in education (8th ed). New York: The McGraw-Hill Companies.

Freeman, R. E. (1984). Strategic management: A stakeholder approach. Pitman.

Gay, L. R., Mills, G. E., & Airasian, P. (2012). Educational Research: Competencies for Analysis and Applications (10th ed.). Upper Saddle River, NJ: Merrill.

Ghana Tertiary Education Commission. (2024). General overview. GTEC. https://gtec.edu.gh/general-overview

Ghana Tertiary Education Commission. (2024a). Accredited institutions. GTEC. https://gtec.edu.gh/accredited-institutions

Ghana Tertiary Education Commission. (2024b). Quality assurance guidelines. GTEC. https://gtec.edu.gh/qa-guidelines

Ginns, P., Prosser, M., & Barrie, S. (2007). Students' perceptions of teaching quality in higher education: The perspective of currently enrolled students. Studies in Higher Education, 32(5), 603–615. https://doi.org/10.1080/03075070701573773

Gul, R., & Khilji, G. (2021). Exploring the need for a responsive school curriculum to cope with the COVID-19 pandemic in Pakistan. Prospects, 51(1), 503–522. https://doi.org/10.1007/s11125-020-09540-8

Hallinger, P., & Walker, A. (2017). Leading learning in Asia: Emerging empirical insights from five societies. Journal of Educational Administration, 55(2), 130–146. https://doi.org/10.1108/JEA-05-2016-0051

HAQAA Initiative. (2024). HAQAA3: Building quality cultures in African higher education. Harmonisation of African Higher Education Quality Assurance and Accreditation Initiative.

Harvey, L. (2018). Lessons learned from two decades of Quality in Higher Education. In M. Joao Rosa, D. F. Westerheijden, & B. Stensaker (Eds.), Research handbook on quality, performance and accountability in higher education (pp. 15–29). Cheltenham: Edward Elgar Publishing. https://doi.org/10.4337/9781785369759.00010

Harvey, L., & Green, D. (1993). Defining quality. Assessment & Evaluation in Higher Education, 18(1), 9–34. https://doi.org/10.1080/0260293930180102

Harvey, L., & Stensaker, B. (2008). Quality culture: Understandings, boundaries and linkages. European Journal of Education, 43(4), 427–442. https://doi.org/10.1111/j.1465-3435.2008.00371.x

Harvey, L., & Williams, J. (2010). Fifteen years of Quality in Higher Education. Quality in Higher Education, 16(1), 3–36. https://doi.org/10.1080/13538321003679457

Kember, D., & Leung, D. Y. P. (2009). Development of a questionnaire for assessing students' perceptions of teaching and learning environment and its use in quality assurance. Learning Environments Research. 12(1), 15–29. https://doi.org/10.1007/s10984-008-9050-7

Klein, M. (2016). Educational expansion, occupational closure and the relation between educational attainment and occupational prestige over time. Sociology, 50(1), 3–23. https://doi.org/10.1177/0038038514560602

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

Lucander, H., & Christersson, C. (2020). Engagement for quality development in higher education: A process for quality assurance of assessment. Quality in Higher Education, 26(2), 135–155. https://doi.org/10.1080/13538322.2020.1761008

Matovu, M. (2018). Massification or quality of graduates? A model for higher education and development in Uganda. African Journal of Education, Science and Technology, 5(1), 1–11. https://doi.org/10.13140/RG.2.2.17296.66568

Mensah, M. A. (2022). Internal quality assurance practices in higher education: Evidence from a Ghanaian university. European Journal of Education Studies, 9(7), 43–88. https://doi.org/10.46827/ejes.v9i7.4388

Mertler, C. A. (2014). Action research: improving schools and empowering educators. (4th ed.). Los Angeles, CA: SAGE.

Noor, S., Tajik, O., & Golzar, J. (2022). Simple random sampling. International Journal of Education and Language Studies, 1(2), 78–82. https://doi.org/10.22034/ijels.2022.162982

Nukpetsi, A. D., Fletcher, J., & Ahwireng, D. (2023). Pre-service teacher training quality: Influence of quality assurance practices and interrelationships with leadership role. Journal of Educational Management, 13(1), 66–84. https://doi.org/10.47963/jem.v13i.1152

Odjidja, J. (2023). Assessing internal quality assurance mechanisms at selected private universities in Ghana. British Journal of Multidisciplinary and Advanced Studies, 4(2), 144–161. https://doi.org/10.37745/bjmas.2022.0170

Peters, K. (2024). Making sense with students: Student engagement in quality assurance (Doctoral dissertation, University of Toronto, Canada). https://www.fs.usda.gov/rm/pubs_other/rmrs_1998_patterson_m002.pdf

Pramono, S. E., & Widiyanto, W. (2024). Quality assurance in higher education: Trends and insights from a systematic literature review. Edelweiss Applied Science and Technology, 8(6), 6579–6588. https://doi.org/10.55214/25768484.v8i6.3410

Rehman, J., Ali, R., Afzal, A., Shakil, S., Sultan, A. S., Idrees, R., & Fatima, S. S. (2022). Assessment during COVID-19: Quality assurance of an online open book formative examination for undergraduate medical students. BMC Medical Education, 22(1), 792. https://doi.org/10.1186/s12909-022-03849-y

Sims, S., & Fletcher-Wood, H. (2021). Identifying the characteristics of effective teacher professional development: A critical review. School Effectiveness and School Improvement, 32(1), 47–63. https://doi.org/10.1080/09243453.2020.1772841

UNESCO. (2018). Strengthening quality assurance in higher education in Africa: UNESCO-Shenzhen project [Project report]. United Nations Educational, Scientific and Cultural Organization.

Van Damme, D. (2004). VIII. Standards and indicators in institutional and programme accreditation in higher education: A conceptual framework and a proposal. In L. Vlasceanu, & L. C. Barrows. (Eds), Studies on Higher Education, 127, 127–160.

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. Chest, 158(1), S65–S71. https://doi.org/10.1016/j.chest.2020.03.012

Wooldridge, J. M. (2015). Control function methods in applied econometrics. The Journal of Human Resources, 50(2), 420–445. https://doi.org/10.3368/jhr.50.2.420