



Total Quality Management and Teacher Productivity in Lagos State Public Senior Secondary Schools, Nigeria

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ARTICLE INFO

Article history:

Submitted 03.09.2025

Accepted 22.11.2025

Published 31.12.2025

Volume No. 12

Issue No. II

ISSN (Online) 2414-8512

ISSN (Print) 2311-293X

DOI:

Keywords: Total Quality Management, Teacher Productivity, Resource Provision, Leadership Effectiveness, Secondary Education, Lagos State, Nigeria

ABSTRACT

Teachers do not work in isolation. What they achieve in a school depends partly on the resources they are given, the training they receive and the leadership they work under. This study examined the relationship between Total Quality Management (TQM) and teacher productivity in public senior secondary schools in Lagos State, Nigeria. It sought to establish the levels of TQM awareness and adoption, teacher productivity, the relationships between resource provision and leadership effectiveness and productivity, and the contribution of TQM to productivity. A descriptive survey design with a correlational component was used. Data were collected from 1,027 teachers across the six education districts through proportional, stratified, and simple random sampling, using researcher-developed instruments. TQM was measured through resource provision, staff development and administrative leadership effectiveness. Productivity was measured through content mastery, content delivery, cocurricular participation, ad hoc committee participation, and quality record-keeping. Most teachers reported awareness of TQM (83.45% had heard of it and 84.05% knew its basic principles), and 90.47% said their schools appreciated and applied it. Productivity was moderate overall ($M = 2.87$), highest for content mastery ($M = 4.44$) and lowest for quality record keeping ($M = 1.48$). Resource provision ($r = .116$, $p < .001$) and leadership effectiveness ($r = .103$, $p = .001$) were positively and significantly related to productivity, and TQM made a significant positive contribution to productivity ($\beta = .276$, $t = 8.511$, $p < .001$). The correlations were small, which suggests that quality management works as a system and that no single practice carries the effect. Schools and education authorities should therefore treat TQM as a combined programme that covers resources, staff development, leadership, and monitoring.



Introduction

Schools succeed or fail largely through their teachers. Teachers deliver the curriculum, but they also keep records, serve on committees, supervise clubs and sports, and carry a good part of the school's administrative life. How well they do all of this is usually referred to as teacher productivity, and it is a central concern for anyone interested in the quality of secondary education. Productivity, however, is not decided by the teacher alone. A teacher with sound subject knowledge can still struggle when textbooks and laboratory materials are scarce, training opportunities are rare, or school leaders provide little direction. The working environment can support or frustrate individual effort (Leithwood et al., 2020; Oni & Soji-Oni, 2022).

Total Quality Management (TQM) offers one way of thinking about that environment. Developed in industry and associated with the work of Deming (1986) and Juran (1986), TQM treats quality as the product of well-designed processes and shared responsibility, and not as something to be inspected at the end. Sallis (2002) adapted these ideas for education, emphasising the needs of stakeholders, continuous improvement, and staff involvement. In a school, the approach touches how resources are provided, how teachers are trained, how supervision is carried out and how leaders communicate expectations. Teachers are therefore active participants in quality work, and not simply recipients of management decisions.

Reviews of the field show that the approach has travelled widely. Bouranta et al. (2021) analysed 133 studies on quality management in primary and secondary education and grouped their findings into six broad categories, including management practices, school characteristics, and teachers. Kaiseroglou and Sfakianaki (2020) found that most schools applied selected TQM principles but seldom followed the approach as a whole. Nigerian studies point in the same direction. Agbu (2025) reported a moderate positive correlation between TQM and teacher productivity in Jalingo Education Zone ($r = .394$), and Ottan (2026) found significant relationships between TQM practices and productivity in Bwari Area Council, Abuja. Related work links supervision and in-service training (Garuba et al., 2024) and quality assurance strategies (Olaifa et al., 2022; Akudo, 2025) with teacher productivity. In Lagos State, Oni and Soji-Oni (2022) found that curriculum supervision, use of instructional materials, checks on teachers' records and training programmes were each related to productivity in Education District I.

What is still missing is evidence covering Lagos State public senior secondary education as a whole, drawn from all six education districts, and measuring productivity broadly enough to include duties beyond classroom teaching. This article addresses that gap. It comes from a larger study of TQM, teacher variables, and productivity, and it reports only the TQM component.

Statement of the Problem

Public secondary schools in Nigeria are expected to produce competent graduates, and teachers carry most of that expectation. Yet teacher performance is uneven. Some teachers show a firm command of their subjects but neglect records, committee work, or cocurricular duties, and the causes often lie in the school rather than in the teacher, resulting from very few resources, limited professional development, or weak leadership.

Lagos State runs a large and varied public senior secondary system, and its teachers work in conditions that differ from one district to another. Research on TQM in education has focused primarily on general organisational effectiveness (Oduwaiye, Sofoluwe & Kayode, 2012), while research on teacher productivity in Nigeria has often been limited to single districts, zones, or local government areas. Little is known about how TQM relates to productivity across the whole Lagos State system, and even less about its relationship with the full range of teachers' duties.

The practical question follows. A school may employ qualified teachers and operate under sound policies, yet still record low productivity if resources, staff development, and leadership are inadequate. Education authorities need to know how closely TQM practices go with teacher productivity, and where in teachers' work the gaps are widest, before they design improvement strategies.

Objectives of the Study

The purpose of this article is to examine the relationship between Total Quality Management and teacher productivity in public senior secondary schools in Lagos State, Nigeria. Specifically, it sets out to:

1. establish the level of awareness and adoption of TQM in the schools;
2. determine the level of teacher productivity across content mastery, content delivery, cocurricular participation, ad hoc committee participation and quality record keeping;
3. examine the relationship between resource provision and teacher productivity;
4. examine the relationship between leadership effectiveness and teacher productivity; and
5. determine the contribution of TQM to teacher productivity.

Research Questions

Two questions, matching Objectives 1 and 2, guided the descriptive part of the study.

Research Question 1: What is the level of awareness and adoption of TQM in Lagos State public senior secondary schools?

Research Question 2: What is the level of teacher productivity in Lagos State public senior secondary schools across the five productivity dimensions?

Research Hypotheses

Objectives 3 to 5 were tested through three null hypotheses at the .05 level of significance.

H01: There is no significant relationship between resource provision and teacher productivity in Lagos State public senior secondary schools (Objective 3).

H02: There is no significant relationship between leadership effectiveness and teacher productivity in Lagos State public senior secondary schools (Objective 4).

H03: Total Quality Management does not make a significant contribution to teacher productivity in Lagos State public senior secondary schools (Objective 5).

Literature Review

Total Quality Management in Education

TQM is a management approach that spans the whole organisation. It builds quality into the way processes are designed and run, and it asks everyone to take part in improving them (Deming, 1986; Sallis, 2002). In education, the emphasis moves from outcomes alone, such as examination results, to the processes that produce them, including teaching, supervision, resource management and staff development. This study operationalises TQM through three dimensions: resource provision, staff development, and capacity building, as well as administrative leadership effectiveness.

Resource provision

Resources include teaching materials, facilities and technological tools. Where they are lacking, teachers make up the shortfall through extra personal effort, which cannot be sustained. Under TQM, supplying resources is part of the organisation's duty to provide staff with what they need to do their work, so it is treated as a quality issue rather than merely a budget line.

Staff development and capacity building

Curriculum requirements, assessment practices and technology keep changing, and teachers must keep pace. Staff development here covers further qualifications, seminars, conferences and workshops. Research on professional development suggests that such activities work best when they are focused on content, sustained over time and supported by coaching and feedback (Darling-Hammond et al., 2017).

Administrative leadership effectiveness

This refers to the ability of school heads to steer teachers towards the school's goals by providing direction, coordinating resources, and communicating expectations. Leithwood et al. (2020) concluded that leadership has a real but moderate effect on the school conditions that shape teaching and learning, and Robinson et al. (2008) found that leadership involving support for teacher learning and development had the strongest effects on student outcomes. Recent Nigerian work on principals' supervisory practices (Ojo et al., 2026) and on collaborative and conflict resolution leadership qualities (Yidawi et al., 2026) treats leadership as a predictor of teacher productivity in a similar way.

Teacher productivity

Teacher productivity here goes beyond time spent teaching. It has five dimensions: content mastery, content delivery, participation in cocurricular activities, participation in ad hoc committees, and quality record-keeping. Content mastery is a teacher's command of the subject and ability to explain concepts clearly. Content delivery is the way that knowledge and skills are presented to students. The other three describe the institutional duties that keep a school running.

The broader definition matters because a teacher who teaches well but keeps no records, avoids committees and takes no part in cocurricular life contributes less to the school than the classroom record alone would suggest. Records also matter for quality control. Without accurate attendance, assessment, and lesson records, a school cannot monitor its processes or judge whether its improvements are working.

Theoretical framework: Juran's Trilogy

This study adopts Juran's Trilogy, which organises quality management around three linked processes: quality planning, quality control and quality improvement (Juran, 1986; Juran & De Feo, 2010).

Quality planning identifies stakeholders' needs and designs processes to meet them. In a school, this means setting instructional requirements, deciding what resources are needed, choosing staff development priorities and stating performance expectations. Quality control checks that processes deliver what was planned, through supervision, monitoring of teaching, inspection of records and assessment of school activities. Quality improvement looks for ways to do better and puts changes in place through professional development, better resources, feedback systems, and leadership development.

The three dimensions studied here sit naturally within this cycle. Resources are planned for, staff development is a route to improvement, and leadership coordinates and monitors both. The framework does not claim that TQM automatically raises productivity. It proposes that when planning, control and improvement are linked, teachers are better placed to perform, and that is the proposition this study tests.

Empirical review on the relationship between total quality management and teacher Productivity

Nigerian studies consistently connect quality-oriented management with teacher productivity, though the strength of the connection varies. Agbu (2025) reported a moderate positive correlation between TQM and productivity in the Jalingo Education Zone ($r = .394$) and identified leadership involvement, staff

development, and continuous improvement as important strategies. Ottan (2026) examined staff inspection, training, curriculum review and performance evaluation in Bwari Area Council, Abuja, and found significant relationships with productivity, and recommended participatory management, continuous professional development and better communication. Okafor et al. (2025) examined quality management principles as correlates of teachers' job performance among 472 teachers in Unity Schools in the South East, and Muhammad Bako et al. (2025) examined teachers' perceptions of TQM in school administration in public senior secondary schools in Bauchi State.

Work on neighbouring practices tells a similar story. Supervision and in-service training were related to teacher productivity in Ogun East (Garuba et al., 2024), and quality assurance strategies were related to productivity in Anambra State (Akudo, 2025) and Kwara State (Olaifa et al., 2022). In Lagos State Education District I, curriculum supervision, use of instructional materials, checks on teachers' records and training programmes were all significantly related to productivity (Oni & Soji-Oni, 2022). Outside Nigeria, Kaiseroglou et al. (2023) surveyed 2,088 Greek primary school teachers and found that views on TQM differed by gender, educational level, age and years of experience, a reminder that teacher characteristics can shape how quality management is seen.

Taken together, the evidence favours the view that quality-oriented practices matter for productivity. It also shows that effect sizes and the dimensions involved differ from setting to setting, and that few studies cover a whole state system or the full range of teachers' duties. The present study addresses that gap.

Methodology

Research design

The study used a descriptive survey design with a correlational component. The design suited the aims because the study set out to describe TQM awareness and teacher productivity and to examine relationships among variables without manipulating them.

Population and sample

The study covered 315 public senior secondary schools in Lagos State, employing 3,113 teachers across the six education districts. Proportional, stratified, and simple random sampling produced a sample of 1,027 teachers and 318 principals and vice-principals. This article uses the teacher responses.

Instrumentation

Two researchers developed instruments used in the study: the Total Quality Management Questionnaire (TQMS) and the Teachers' Productivity Checklist (TPC). The TQMS covered resource provision, staff development and capacity building, and administrative leadership effectiveness. The TPC covered content mastery, content delivery, cocurricular participation, ad hoc committee participation, and quality record-keeping.

Validity and reliability

The instruments were validated, and their reliability was established through test-retest procedures. The coefficients were .74 for the TQM instrument and .77 for the teacher productivity instrument.

Data analysis

Frequencies, percentages and means answered the research questions. Pearson Product-Moment Correlation tested H01 and H02, and multiple regression tested H03. All hypotheses were tested at the .05 level of significance.

Results

Awareness and adoption of TQM (Objective 1, Research Question 1)

Table 1 shows that awareness was high. Most teachers had heard of TQM (83.45%) and knew its basic principles (84.05%), and 90.27% agreed that it applies to all human organisations. More than nine in ten said their schools appreciated and applied its principles (90.47%), and about the same proportion reported continuous improvement in teaching and learning (95.19%) and in staff and students (94.98%). The weakest indicator was attachment to external TQM consultants, reported by 58.48% of teachers, leaving 41.52% of schools without such a link.

Table 1: Awareness and adoption of TQM

TQM indicator	Yes (%)	No (%)
Heard about TQM	83.45	16.55
TQM is applicable to all human organisations	90.27	9.73
Aware of basic TQM principles	84.05	15.95
TQM is appreciated and applied	90.47	9.53
Continuous improvement in teaching and learning	95.19	4.81
Continuous improvement of staff and students	94.98	5.02
School is attached to external consultants for TQM	58.48	41.52

Level of teacher productivity (Objective 2, Research Question 2)

Table 2 presents the mean for each productivity dimension. Content mastery ranked highest ($M = 4.44$), followed by content delivery ($M = 3.73$). Cocurricular participation ($M = 2.51$) and ad hoc committee participation ($M = 2.17$) were lower, and quality record keeping was lowest ($M = 1.48$). The composite mean of 2.87 indicates a moderate overall level of productivity. Teachers scored highest on what happens in the classroom and lowest on administrative and organisational duties related to it.

Table 2: Mean scores on teacher productivity dimensions

Productivity dimension	Mean
Content mastery	4.44
Content delivery	3.73
Participation in cocurricular activities	2.51
Participation in ad hoc committees	2.17
Quality record keeping	1.48
Composite mean	2.87

Resource provision and teacher productivity (Objective 3, H01)

Table 3: Relationship between Resource provision and teacher productivity

TQM dimension	N	r	Sig. (2 tailed)
Resource provision	1,026	.116	< .001
Teacher Productivity			

Resource provision correlated positively and significantly with teacher productivity ($r = .116$, $N = 1,026$, $p < .001$), so H01 was rejected. The coefficient is small. It corresponds to about 1.3% of shared variance, indicating that resource provision is linked to productivity but explains only a small share of the differences between teachers.

Leadership effectiveness and teacher productivity (Objective 4, H02)

Table 4: Relationship between Resource provision and teacher productivity

TQM dimension	r	N	Sig. (2 tailed)
Resource provision	.116	1,026	< .001
Leadership effectiveness	.103	1,026	.001

Leadership effectiveness also correlated positively and significantly with productivity ($r = .103$, $N = 1,026$, $p = .001$), and H02 was rejected. This coefficient is equally modest, at about 1.1% shared variance. Table 4 summarises both results.

Contribution of TQM to teacher productivity (Objective 5, H03)

Table 5: Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706	.660	.658	6.944

Table 6: Regression coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	2.835	.138		20.544	< .001
Total Quality Management (TQM)	.220	.026	.276	8.511	< .001
Teachers' Variables	.227	.031	.237	7.301	< .001

When TQM and teachers' variables were entered together, both contributed significantly and positively to productivity. TQM carried the larger standardised coefficient ($\beta = .276$, $t = 8.511$, $p < .001$) compared with teachers' variables ($\beta = .237$, $t = 7.301$, $p < .001$), and H03 was rejected. In unstandardised terms, a one-

point increase in TQM was associated with a 0.220-point increase in productivity, with teachers' variables held constant. Table 5 gives the model summary, and Table 5 gives the coefficients.

Discussion

Awareness and adoption of TQM

The high awareness and reported application suggest that TQM ideas have reached many public senior secondary schools in Lagos State. Reviews elsewhere, however, warn that schools tend to adopt selected principles rather than the approach as a whole (Kaiseroglou & Sfakianaki, 2020), and the obstacles those authors identified were mostly matters of mindset and culture. The same may be true here. The lower figure for external consultants (58.48%) suggests limited external support for implementation. Because every indicator in Table 1 rests on what teachers reported, the gap between knowing TQM and practising it consistently remains open. Direct observation or document review would be needed to close it.

Level of teacher productivity

The moderate composite mean hides a sharp difference between dimensions. Content mastery and content delivery were strong, while committee participation and record keeping were weak. The low record-keeping deserves the most attention. From a TQM standpoint, records are the information base for quality control: they let a school see what is being taught, how students are performing and whether changes are working. Oni and Soji-Oni (2022) identified regular checks on teachers' records as a quality assurance practice related to productivity in Lagos Education District I, which aligns with the view that record-keeping needs monitoring and support. The lower scores for committee work and cocurricular activities may reflect how such duties are assigned or how little recognition they carry, but the data cannot settle that.

Resource provision and productivity (Objective 3)

The significant positive link between resource provision and productivity supports the argument that teachers need adequate materials to turn subject knowledge into classroom practice. It aligns with Oni and Soji-Oni (2022), who found that the use of instructional materials was associated with productivity in Lagos Education District I. The coefficient is small, though. With more than a thousand respondents, even a weak relationship reaches statistical significance, so the result should be read as indicating that resources are one relevant condition but not a sufficient one.

Leadership effectiveness and productivity (Objective 4)

The result is consistent with Leithwood et al. (2020), who described the effect of leadership on school conditions as moderate in size but vital, and with Nigerian studies that link principals' supervisory practices and leadership qualities to teacher productivity (Ojo et al., 2026; Yidawi et al., 2026). School heads work largely through others. They arrange resources, set expectations, monitor performance and support staff development, so their influence on productivity is mostly indirect and would be expected to look modest in a direct correlation. That is what Table 3 shows.

Contribution of TQM to productivity (Objective 5)

TQM kept a significant positive coefficient ($\beta = .276$) with teachers' variables in the model, and it carried more weight than they did ($\beta = .237$). This agrees with the moderate relationship reported by Agbu (2025) in Jalingo and the significant relationships reported by Ottan (2026) in Bwari, and it supports the idea that productivity is partly a product of the system teachers work in and not only of who the teacher is. The pattern of small correlations for single dimensions and a larger contribution for the composite is what one would expect if the practices work together, which is how Juran's framework describes planning, control and improvement. That remains an interpretation, because the study did not test interactions among the dimensions.

Implications for Educational Management

The results suggest that TQM should be run as a system and not as a single programme. Training teachers about TQM without improving resources, leadership and monitoring is unlikely to produce lasting change. School leaders need the capacity to coordinate resources, support teachers and build a culture of continuous improvement. Staff development should be planned as part of school improvement and not left to occasional workshops. Productivity monitoring should cover both classroom and organisational duties, since the weakest scores were in record-keeping and committee work. Quality assurance should also draw on records, supervision findings, and teacher feedback so that weaknesses can be identified and tracked over time.

Recommendations

1. Lagos State education authorities should institutionalise TQM in public senior secondary schools as a standing management system, with monitoring that checks practice and not only awareness.
2. Schools should track teacher productivity across all five dimensions, and school improvement plans should set specific targets for record-keeping and committee participation.

3. Instructional resources, including conventional teaching materials and appropriate educational technologies, should be provided and maintained.
4. School heads should receive regular training in quality management and instructional leadership, covering continuous improvement, teacher support, participatory decision making and supervision based on evidence.
5. Staff development should be continuous, with regular workshops, seminars, conferences and opportunities for further study built into school improvement planning.
6. School management should set clear standards for teachers' records and provide monitoring and support, and it should encourage cocurricular and committee participation through clear role expectations and recognition.
7. Future studies should examine how TQM affects productivity, using qualitative work on how teachers and school leaders experience implementation, and should report the relationship of staff development with productivity separately.

Limitations

The survey design identifies statistical relationships and not causal effects, so the findings do not show that TQM directly raises teacher productivity. The data are reports from respondents and not direct observation of school practice. The article reports separate correlations for resource provision and leadership effectiveness only, so staff development enters the analysis through the composite TQM score.

Contribution to Knowledge

The study provides evidence from a large public senior secondary system in Lagos State on the relationship between organisational quality management and teacher productivity, using all six education districts. Its main contribution is a differentiated picture of productivity: teachers performed relatively well in core instructional functions and less well in ancillary organisational duties, so improving productivity calls for a broader view of quality management that covers both classroom practice and the duties around it. The study also adds Nigerian evidence to the growing body of work, including recent studies in Jalingo and Bwari, showing that TQM, leadership and organisational support are relevant to teacher productivity, even though the size of the relationships differs across settings.

Conclusion

This study examined TQM and teacher productivity in public senior secondary schools in Lagos State. Awareness of TQM was high among teachers, and overall productivity was moderate, strongest in content mastery and content delivery and weakest in quality record keeping and ad hoc committee participation. Resource provision and leadership effectiveness were each positively and significantly related to productivity, and TQM made a significant positive contribution to productivity. The relationships for single dimensions were small, so TQM should not be reduced to resources or leadership alone. Lasting improvement will come from coordinated attention to planning, resources, staff development, leadership, monitoring and continuous improvement.

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