RESEARCH ARTICLE

REVISED Secondary school teachers' perception of quality management practices in Ethiopia: Implications for quality education for all [version 2; peer review: 2 approved, 1 approved with reservations]

Aklilu Alemu

Education Planning and Management, Madawalabu University, Bale, Robe, Oromia, 247, Ethiopia

v2 **First published:** 11 Jul 2022, **4**:26
https://doi.org/10.35241/emeraldopenres.14715.1
Latest published: 13 Jun 2023, **4**:26
https://doi.org/10.35241/emeraldopenres.14715.2

Abstract

Background: Most children in low-income countries complete their elementary education with low competency in essential reading, writing, and arithmetic skills. Besides, about 250 million students are not learning the basics, most of whom have spent at least four years in school, and this failure is coined the global learning crisis. This study aimed to examine educational quality management practices perceived by secondary school teachers.

Methods: The study employed a multilevel mixed-method design. Employing a simple random sampling technique, the researcher selected 251 teachers from 10 secondary schools in the research regions. He collected data through a researcher-designed questionnaire, school standards, and student achievement records from November 2018 to March 2019. He analyzed data from a questionnaire using frequency, percentage, mean, Pearson correlation, and exploratory factor analysis. The document review concerning quality management was analyzed using content analysis to triangulate the quantitative findings.

Results: At the school level, the study revealed the impracticality of laboratories. Besides, incompetent and unmotivated teachers and students ran the education business from the input side. At the same level, principals' management practices on staff development and encouraging parents to support their schools were low. The principals' management practices in the teaching-learning process were also undesirable at the classroom level. Overall, the study revealed incredibly insufficient input, process, and output management in the study context.

Conclusion: Hence, the study concluded that it is difficult to achieve the very objectives of producing creative, critical, and problem-solving individuals through this type of educational provision and its management. Due to this, it is not easy to achieve quality education

Open Peer Review

Approval Status ✓ ? ✓

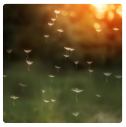
	1	2	3
version 2 (revision) 13 Jun 2023	✓	?	✓
version 1 11 Jul 2022	?		

1. **Suryawahyuni Latief**, Universitas Nurdin Hamzah, Jambi, Indonesia
2. **Kindu Ayechew Ayenalem**, University of Gondar, Gondar, Ethiopia
   Samuel Zinabu Desta, University of Gondar, Gondar, Ethiopia
3. **Maleeha Ashraf**, University of Sunderland, london, United Kingdom
   IOE University College London, London, United Kingdom

Any reports and responses or comments on the article can be found at the end of the article.

for all goals.

Keywords
Education quality, Ethiopia, quality, quality management, management practice, secondary education



This article is included in the Quality Education for All gateway.

Corresponding author: Aklilu Alemu (aklilualemu16@gmail.com)

Author roles: Alemu A: Data Curation, Investigation, Methodology, Writing – Original Draft Preparation, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: The author(s) declared that no grants were involved in supporting this work.

Copyright: © 2023 Alemu A. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: Alemu A. **Secondary school teachers' perception of quality management practices in Ethiopia: Implications for quality education for all [version 2; peer review: 2 approved, 1 approved with reservations]** Emerald Open Research 2023, **4**:26 https://doi.org/10.35241/emeraldopenres.14715.2

First published: 11 Jul 2022, **4**:26 https://doi.org/10.35241/emeraldopenres.14715.1

REVISED **Amendments from Version 1**

This version of the manuscript was improved in various ways. In the introduction, the researcher added the latest literature on the importance of quality management, which is run by school heads. The review section was updated with the Total Quality Management theory, along with current literature on how it applies to general education. The researcher provided clarification on ethical clearance and elaborated on the Southern Nations, Nationalities and People's Region's political, economic, and cultural aspects. Regarding sampling, the researcher provided additional clarification. Finally, the researcher made some clarifications on document analysis and listed all the cited authors in the reference section.

Any further responses from the reviewers can be found at the end of the article

Introduction

The success of a country is critically linked to its human capital development. According to the World Bank (2018) report, about 64% of the nation's wealth is directly related to human capital. Over the last two decades, education expansion has increased dramatically. Nevertheless, school expansions do not guarantee the levels of students' learning (Altinok *et al.*, 2018; Glewwe & Muralidharan, 2015; Patrinos & Angrist, 2018; UNESCO, 2015; World Bank, 2018). Most children in low-income countries complete their elementary education with low competency in essential reading, writing, and arithmetic skills (Benavot & Köseleci, 2015; Treviño & Ordenes, 2017; World Bank, 2018). For example, 15 Eastern and South African countries took part in the Southern and Eastern Africa Consortium for Monitoring Education Quality (SACMEQ) in 2007. However, most scored below the level of 'reading for meaning,' and approximately 60% scored below the level of 'basic numeracy' (Hungi *et al.*, 2010). According to the Education for All Global Monitoring Report of 2014, about 250 million students are not learning the basics, most of whom have spent at least four years in school (UNESCO, 2014). UNESCO coined this failure as the 'global learning crisis.'

There is a growing body of literature examining school heads' quality management practices in the field of general education. A study by Firszt-Andrzejewska *et al.* (2021) found that effective quality management practices by school heads are associated with higher levels of teacher job satisfaction and greater student achievement. This study underscores the importance of quality management practices in schools as a means of ensuring positive outcomes for both teachers and students. A recent systematic review by Abdellah and AlGhamdi (2021) also emphasized the critical role played by school heads in shaping the quality of education in their schools. The authors posit that school heads who demonstrate strong leadership, communication, and organizational skills are better equipped to ensure high-quality educational experiences for students. These results effectively highlight the crucial role of quality management practices by school heads in ensuring excellent outcomes in general education.

Ethiopia has been engaging in macroeconomic development programs such as the Sustainable Development and Poverty Reduction Program (1995–2005), Plan for Accelerated and Sustained Development to End Poverty (2005–2010), First Growth and Transformation Plan (GTP) (2010–2015), and Second Growth and Transformation Plan (2015–2020) since 1995 (Ministry of Education (MOE), 2015). All of them were planned to respond to human capital development needs that could contribute to poverty reduction and the country's economic development (MOE, 2015).

As per the Transitional Government of Ethiopia (TGE), 1994), one of the main reasons for establishing the existing Education and Training Policy (ETP) was to address the weaknesses of previous education systems (the Imperial and the Socialist regimes) in addressing access, equity, quality, and relevance problems simultaneously. To materialize these, the MoE launched five consecutive Education Sector Development Programs (ESDPs) (MOE, 2015). Because of implementing the ESDPs, the education system successfully addressed access and equity issues compared to primary education quality issues.

Although education has been expanding throughout the country, the concern for quality education has become a profound public worry among educational stakeholders in Ethiopia (Negash, 2006). As a response to public concerns, the MoE and international development partners (World Bank) established the General Education Quality Improvement Programs (GEQIPs) (MOE, 2015). Implementing these programs improved the quantitative aspects of educational resources, such as the student-textbook and student-teacher ratios (MOE, 2015). Despite such quantitative improvements, the MoE did not achieve its goals as expected by stakeholders. It appears that secondary education lacks quality.

Quality is a multidimensional, subjective concept, and sometimes it is political. In this study, quality refers to how an education system provides every student's knowledge, skills, and attitudes. Hence, attempting to fulfil inputs and manage these inputs (process) leads most students to score highly on the national examination. Studies show that principals in Ethiopia emphasized administrative routines (Ahmed, 2015), and the district supervisors and inspectors interfered with principals' practices (Aklilu *et al.,* 2021). The reviews of the existing studies show that the management of quality education in secondary schools in Sub-Saharan Africa seems rarely addressed. In support of this idea, Alexander (2015) contends that most African countries have been focusing on achieving the Education for All (EFA) goals. Much attention to expanding schools suggests examining how expanded secondary education gives critical attention to quality management practices, which calls for an empirical investigation. Therefore, this study has investigated the practices and challenges of quality management in terms of input availability and management and the proper functioning of the teaching-learning process to produce desired outputs in secondary schools in the Southern Nations, Nationalities, and People Regions (SNNPR) of Ethiopia.

Statement of the problem

According to broad and large-scale quantitative data reviews (Robinson, 2007), effective school leadership and management are the second most essential variables that boost students' learning, next to the classroom teaching-learning process. In recognition of this, the MOE and regions have given training to 25,000 principals and supervisors on how to lead the teaching-learning process during GEQIP implementation (MOE, 2015).

Though wide ranges of training have been provided to principals and supervisors, Joshi and Verspoor's (2012) report and the National Learning Assessment (NLA) (2014) (MOE, 2015) reports show that the majority of the students scored below the standard (50%). For instance, the World Bank found that student achievement in secondary school was low, but the graduates lacked the necessary skills to enter the world of work. Similarly, students' results in the NLA also echo the existence of students' low academic achievement. For example, in ESDP IV, the ministry set targets in 2014 for grades 4, 8, 10, and 12 in Mathematics, English, Biology, Physics, and Chemistry. Nonetheless, the ministry did not achieve the targets (MOE, 2015). These illustrate the legacy of poor-quality education.

While reviewing the Education Statistics Annual Abstracts of the latest Grade 10 student National Examination results (2016–2018) among larger regions such as Amhara, Oromia, SNNPR, and Tigray, the SNNPR's grade 10 students' National Examination results in all three years were below the larger regions and the national average (own compilation from National Education Assessment and Examinations Agency's Data, 2019). The rationale for choosing SNNPR was the region's three consecutive years of low academic achievement compared to the regions mentioned above and the national average.

This study differs from previous research for two reasons: Firstly, studies on secondary education quality management are scanty (Joshi & Verspoor, 2012; Verspoor & Bregman, 2008). Secondly, the existing literature (Scheerens, 2011) emphasized single-level quality management practice (school or classroom level). Scheerens suggests the importance of conducting quality management at multiple levels. Hence, this study aimed to assess school and classroom levels of quality management practices in secondary education to fill these yawning gaps.

Research questions

(1) How do teachers perceive the inputs to secondary schools in Ethiopia?

(2) How do teachers perceive school-level quality management practices in Ethiopian secondary schools?

(3) How do teachers perceive classroom-level quality management practices in Ethiopian secondary schools?

(4) What are the relationships between input, process, and output management in Ethiopian secondary education?

Significance of the study

This study offers pertinent and timely information to policy-makers concerning quality management practices in Ethiopian secondary schools. Besides, it helps vital educational stakeholders, such as school principals and teachers, revisit their practices to enhance students' achievement.

A conceptual framework for quality management in secondary schools

As per Kast and Rosenzweig (1981), open system theory states that a school takes its inputs from the external environment, transforms them to produce the outputs, and exports the output back to the environment. Furthermore, as an embedded social organization, schools influence the performance of classroom-level decisions (Thien & Razak, 2012). The following conceptual framework was adapted from Scheerens (2011). It shows the relationships among variables in input, process, and output management (Figure 1).

Operational Definition of Terms

High School (secondary education): A school hosts Grade 9–12 students.

Special Woreda is similar to a district not part of a zone administration division and functions as an autonomous entity (en.m.wikipedia.org/wik).

Woreda: The Ethiopian education administration has four levels—Federal Ministry, Regional Education Bureau, Zonal Department, and Woreda. It is equivalent to the district. It administers the number of schools.

Zone: an administrative level between the region's governments and the woreda. It manages various woredas.

Literature review

Education quality

Scholars define the term 'quality' in different ways. For many scholars (Reddy, 2007), the students' national examination results are a starting point for defining education quality. Differently, the World Bank conceptualizes the learners' cognitive achievement to measure the quality of education (Ndofirepi, 2012). The United Nations International Children's Fund (UNICEF) (2006) defines education quality as the education system that helps every individual develop his or her full capacity. Ibrahim *et al.* (2017) provided a more comprehensive definition of educational quality. The authors state quality from seven dimensions—providing adequate instructional materials, educational infrastructure, imparting the proper knowledge, meeting educational yardsticks, teacher support, creating a conducive learning atmosphere, and the availability of high-quality education teachers. Secondary education provides competent citizens with tertiary education and work experience (O'Sullivan, 2017; Pourrajab *et al.,* 2015). Hence, secondary schools could consciously plan and lead quality management practices (Elahi & Ilyas, 2019; Lewal & Yakubu, 2018; van Kemenade, 2022).

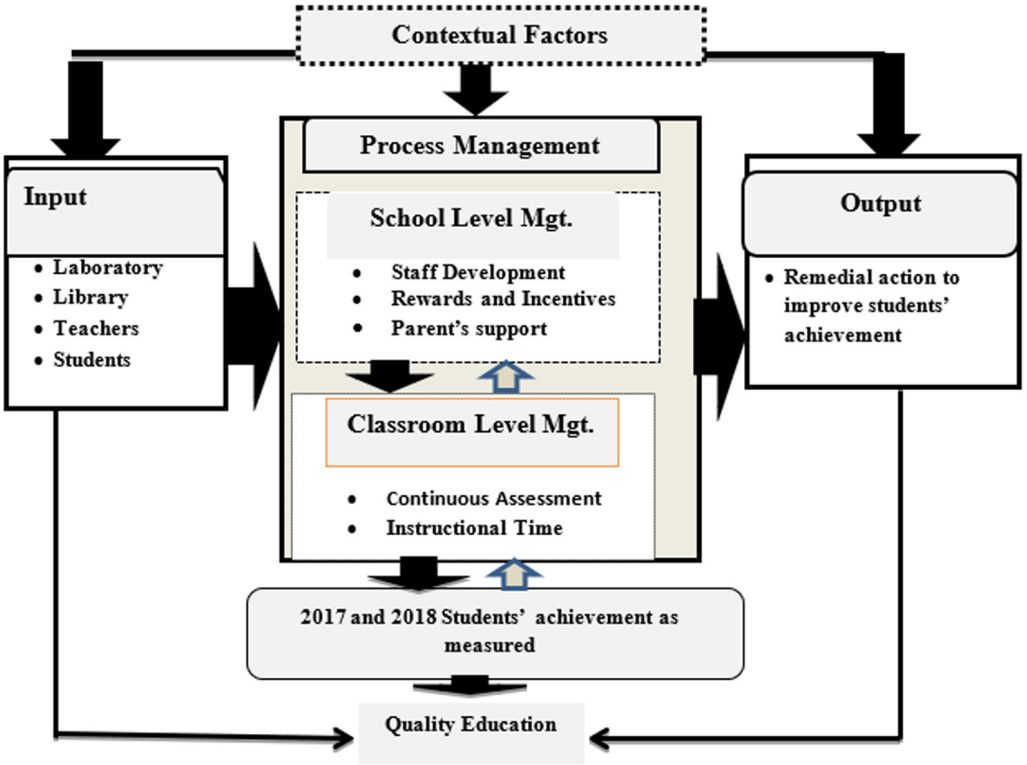


Figure 1. Conceptual framework of quality management in secondary education.

Quality assurance or management

The concept of quality management has a wide range of discussions. It can be defined from diverse perspectives. Accordingly, there appears to be no globally accepted definition of quality management (Darojat, 2018). For Vroeijenstijn (1995), quality assurance is "... systematic, structured, and continuous attention to quality in terms of quality maintenance and quality improvement" (p. xviii). Similarly, Harman and Meek (2000) define quality assurance as "systematic management and assessment procedures adopted by higher education institutions and systems to monitor performance against objectives and to ensure achievements of quality outputs and quality improvements" (p. 4). Although the definition varies among scholars, the main thrust of quality management in education is to produce quality graduates that can cope with the environment in which they live.

Discerning the incompleteness of single-level quality management studies (school level or classroom level), scholars (Creemers, 1999; Thien & Razak, 2012) suggest the importance of conducting studies to evaluate the effectiveness of education at different levels. The researcher conducted the study at the school and classroom levels based on the scholar's guide.

Total Quality Management

Total Quality Management (TQM) has been widely adopted and implemented by various sectors in the industry to ensure customer satisfaction and operational excellence (Al-Hadhrami *et al.*, 2021). In recent years, TQM has also been recognized as an effective approach to enhance the quality of education in general education programs. A study by Al-Alak and Al-Sabbagh (2021) found that TQM principles can improve the quality of education by prioritizing student satisfaction, continuous improvement, and stakeholder engagement. Similarly, Karia *et al.* (2020) emphasized the importance of TQM in higher education institutions, in order to enhance the quality of learning and teaching, and to meet the expectations of various stakeholders. The effective implementation of TQM in general education requires strong leadership, effective communication, and the involvement of all stakeholders (Ezeuduji *et al.*, 2021). Furthermore, Rigopoulos *et al.* (2021) highlighted the need for ongoing evaluation and continuous improvement in the implementation of TQM in general education.

The choice of study variables

The researcher included variables that significantly influence students' achievement-based literature reviews. For instance, Fuller & Clarke (1994) conducted a meta-analysis on input and process variables that revealed a significant association with student learning in developing countries. They have found that 7 out of 9 studies show the significance of the quality of the facility, 19 out of 22 studies show the importance of the library, 8 out of 13 studies show the worth of a laboratory, 11 out of 17 studies

depict the significance of staff development, and 27 out of 33 studies show the significance of instructional time. Therefore, he chose the study variables based on a literature review.

Methods

Ethical statement

There is no process for ethical approval in education in our region; this study design and tools were reviewed during the proposal, curved article, and final defense sessions and approved by a panel of researchers as part of the Ph.D. dissertation undertaken at Addis Ababa University. However, no written approval was given to the researcher as part of the Ph.D. process.

In this study, the researcher ensured the well-being of the participants in the following ways: Prior to participating in the study, the respondents were fully informed about the risks and benefits of the study, and their right to withdraw at any time. Additionally, the researcher protected respondents' personal information to ensure their privacy, and their identity was not disclosed. Furthermore, the names of participating schools were anonymized, and data storage was secure and restricted to only authorized researchers with access.

Description of the study area

The Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia is a federal region situated in the southern part of Ethiopia (Central Statistical Agency, 2008). It shares borders with Kenya to the south, the Oromia region to the north, eastern Ethiopia to the east, and South Sudan to the west (Ethiopian Tourism Organization, n.d.). The region covers an approximate area of 109,000 square kilometers, comprising about 10% of Ethiopia's total land mass (Central Statistical Agency, 2021). The SNNPR is inhabited by a diverse group of over 56 ethnic groups, with the Sidama, Gurage, Gedeo, Hadiya, and Kambaata being the largest (Central Statistical Agency, 2008). These ethnic groups have different languages and cultural practices, making the region one of the most ethnically diverse in Ethiopia (USAID, 2020).

In terms of its socio-economic features, the SNNPR is predominantly agricultural, with over 85% of the population engaged in farming (Central Statistical Agency, 2008). The principal crops grown in the region include coffee, sugarcane, maize, and teff (Ethiopian Tourism Organization, n.d.). Livestock rearing is also prevalent, with cattle, sheep, and goats being the main animals raised in the area (Central Statistical Agency, 2008). The region is also home to some of Ethiopia's significant rivers, including the Omo River, which is a source of irrigation and hydroelectricity (USAID, 2020).

Politically, the SNNPR is governed by a regional government responsible for managing the region's affairs (Central Statistical Agency, 2008). The regional government is led by a president elected by the regional assembly, composed of representatives from each ethnic group in the region. The SNNPR has its police force, responsible for ensuring law and order within the region (USAID, 2020). As of 2015, there were 761 kindergartens, 6,452 primary schools, and 705 secondary schools in the region. There were 86,851 teachers in primary schools and 17,812 teachers in secondary schools, with 4,244,044 students in primary schools (World Bank, 2020).

Research design

The study employed a multilevel design because different levels of education management have different functions to achieve similar objectives (Creswell, 2014). The study followed a quantitative approach using qualitative data from document analysis.

Sample

In the SNNPR, there were 14 zones and five special woredas. The researcher clustered zones and special woredas into five groups based on their geographical proximities. These are northern (Gurage, Silty, and Yem); southern (Dawuro, South Omo, Gamogofa, Derashe, Konta, and Basketo); eastern (Sidama, Gedio, and Segen People); western (Bechi-Maji, Kaffa, and Sheka); and central clusters (Wolayta, Hadya, Kambata-Tambaro, and Alaba). The researcher selected the Western cluster for the study using a simple random sampling technique. Though the researcher selected the Western cluster, the remaining clusters share the same economic and social characteristics as the selected cluster. Hence, the finding of this study represents other clusters too.

In the selected cluster, there were 19 secondary and preparatory schools. Since the study aimed to see the two consecutive years (2017 and 2018) of the Grade 10 students' national examination results, the researcher set two criteria for the appropriate sample schools. First, he differentiated between those schools that prepared their students for the earlier years. Second, to respond to the whole questionnaire, the respondents could teach in those schools that host grades 9–12 because the questionnaire requires knowledge of what is going on in general secondary and preparatory schools simultaneously. Hence, based on the above criteria, he only included 10 secondary and preparatory schools in the study out of the initial 19.

Finally, the researcher selected teachers using the simplified sample determination formula Yamane developed and cited in Singh and Masuku (2014). According to the formula,

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, N is the population, and e is the margin of error (5%).

In the sampled schools, there were a total of 528 teachers. The researcher selected 229 teachers using a simple random sampling technique to provide an equal chance of being selected as a sample, by using a formula. Additionally, 10% of the initial sample was added to enhance the response rate (Johnson & Christensen, 2014). Thus, the researcher finally selected 251 teachers as respondents. While selecting teachers from 10 preparatory schools, the proportion of teachers in each school was considered. Hence, proportional sampling technique was used by considering the number of teachers in every school.

Instrumentation

Questionnaire. The researcher developed structured questionnaires that incorporate 50 items for data collection. Experts were invited to comment on the questionnaire, and their comments were considered for administration. The language experts translated the English version of the questionnaire to the Amharic (an official language of Ethiopia) version backward and forwards (Aklilu, 2022). The questionnaire consists of two parts. Part one seeks teachers' background information. The second part aims to collect information about quality management practices at the school and classroom levels, using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree.' The Amharic version of the draft questionnaire was pilot-tested with 60 teachers. These teachers were incorporated for the pilot study based on their willingness to participate and availability in the school compound, and we did not involve them in the actual study to offer chances to other teachers. The Cronbach Alpha calculated the reliability statistics of the pilot test, and the result was 0.97. For the actual data with the sample of 240, the reliability statistics for factor 1 (0.90), factor 2 (0.89), factor 3 (0.93), factor 4 (0.85), factor 5 (0.82), factor 6 (0.86), factor 7 (0.87), factor 8 (0.82), factor 9 (0.81), and factor 10 (0.88) were above the suggested 0.7 (Rohwer, 2010).

The researcher checked the validity of the internal scale structure through dimensions extracted using eigenvalues greater than the suggested (0.7) except for two dimensions. Furthermore, all the Average Variance Extracted (AVE) was greater than 0.5, as indicated in extended data (Field, 2009). The AVE ensures the instrument's construct validity (Weerasinghe & Fernando, 2018). Besides, the researcher invited five experts from the education and psychology fields from Addis Ababa University based on their long-term experiences and their areas of scholarly research to examine the tool's content validity, and the experts provided comments to change some terminologies (e.g., school head was changed to the principal, throughput to process, and continuous evaluation to continuous assessment). The researcher seriously considered and improved as per experts' comments. Besides, the experts suggested deleting the 'medium of instruction proficiency' variable because they argued that the level of a student's English language proficiency is not affected by principal quality management practices, and the researcher found the comment valuable and deleted it, and face validity of the tool was examined through an extensive review of the literature and expert judgment (Weerasinghe & Fernando, 2018).

Document analysis

This study analyzed Grade 10 National Examination results for two consecutive years (2017 and 2018) from the National Educational Assessment and Examination Agency (NEAEA) to determine the performance status of students from the southwestern cluster. The aim was also to determine the percentage of students who scored above average as a result of quality management practices adopted by principals. The Addis Ababa University Department of Educational Planning and Management wrote a cooperation letter to the NEAEA for access to the documents. The researcher categorized the scores above and below two points and analyzed them using content analysis techniques. Additionally, the researcher gathered Grade 8 students' regional examination results from 2014 to 2018 with their cut-points from the target zones to assess whether incoming Grade 9 students had the required knowledge and skills expected for their level of education. Finally, the researcher reviewed the high school standards (MOE, 2009) to ascertain whether the secondary schools met the standard in terms of input availability, such as qualified teachers, competent students, well-equipped laboratories, and libraries, and whether the principals performed satisfactorily according to the standards.

Data analysis

The researcher employed SPSS version 23 for data analysis. To ensure content, face, and construct validity and reliability measures, we tested the validity and reliability of the instrument (Weerasinghe & Fernando, 2018). Data analysis follows two stages. Firstly, he run EFA to check the development of psychometric measures. As a result, item validity and reliability of the internal structure of dimensions were tested. Cronbach's alpha coefficient calculated the reliability statistics, and all items were above the suggested 0.7 (Rohwer, 2010).

Data analysis followed the following steps: Firstly, the researcher checked the issues of outliers, missing values, and normality via Skewness and Kurtosis via SPSS. All values were found in +2 (Garson, 2012). Secondly, he checked the adequacy of the sample through Kaiser-Meyer-Olkin (KMO), and the result was 0.8, labeled as meritorious (Tabachnick & Fidell, 2001). Besides, Bartlett's Test Sphericity was 0.000, less than 0.05 (Maat *et al.,* 2011). Furthermore, the absence of multicollinearity was checked using the correlation matrix value (determinant), and the result was (0.00086), which is greater than the suggested 0.00001 (Tabachnick & Fidell, 2001). Thirdly, exploratory factor analysis was run with 50 items via principal component analysis extraction and varimax rotation methods with an eigenvalue greater than 1 with a minimum cut-off of 0.4-factor loading (Field, 2009). These statistics show the factorability of data.

Furthermore, he inspected the scree plot. The eigenvalues greater than one and the scree plot suggest retaining ten factors. Based on the rotated component matrix, five items were deleted because they did not meet the minimum criterion of 0.4, and three items were eliminated because they were cross-loaded. Therefore, 42 items were retained. Finally, factors were nominated based on shared characteristics of the dimensions.

After checking the reliability and validity, the researcher analyzed the data under the input category, school level, and classroom-level quality management practices. Hence, data analyses had the following patterns:

Frequency and percentages were utilized to analyze and interpret respondents' background information. Means and standard deviations were employed to analyze items gathered through the Likert scale. The calculated mean values were interpreted as follows: a mean score of 3 and above indicates 'for-ness,' and a mean score below 2.51 shows "against-ness." A mean

score of 2.51–2.99 is undecided (Best & Kahn, 1995). Finally, the Pearson correlation was employed to examine whether there were relationships between school input, process, and output.

Results

The researcher invited 251 teachers using a simple random sampling technique, with 240 valid completed questionnaires returned from the respondents (95.6% response rate). In this study, 96 (40%) of the respondents had a diploma, 124 (52%) had a first degree, and the remaining 20 (8%) had a second degree. From the data, under-qualified teachers were involved in teaching-learning processes. Concerning their workload, 48 (20%) of the respondents had three-10 periods per week, 186 (77.5%) had 11–20 periods per week, and the remaining six (2.5%) had 21–30 periods per week. From this, teachers had ample time to provide tutorials and makeup classes.

Data analysis on school-level quality management practices

Input availability. From Factor 2 of Table 1, teachers disagreed that their respective schools had well-equipped physics, chemistry, and biology laboratories; they argued that these laboratories did not frequently offer services to students, and they also confirmed that schools did not have the necessary chemicals. However, the high school standard states that all secondary schools must have three separate laboratories. From this, one can infer that the teaching-learning process in science subject lessons lacks practical experience.

From Factor 6 of Table 1, respondents agreed when they were asked whether their respective school libraries had recent books, whether students usually used the school libraries, and whether orientation was given to students on how to search for books. On the contrary, teachers disagreed with the item because the school has trained librarians. From this, one can infer that libraries offered services to their students without trained librarians.

The researcher reviewed five years (2014–2018) of grade eight regional examination results from the three zones to triangulate the data. The triangulation was done to determine whether secondary schools received qualified students from primary education. From Factor 7 of Table 1, teachers disagreed with the incoming grade nine students' knowledge, English language proficiency for the grade level, and motivation to learn.

The analysis shows that out of students promoted to grade nine, 48% scored below standard. Consequently, about half of the students entered grade nine without having the necessary knowledge, skills, or attitudes.

From Factor 10 of Table 2, teachers were asked to rate whether they selected the teaching profession as the last option and agreed with the item. One can infer that those teachers have been teaching without interest. Besides, teachers were asked whether all secondary school teachers had a first degree in any subject and disagreed with the item. The statistical data of teachers' qualifications from three zones were reviewed, and 30% of teachers in the three zones were diploma holders to triangulate this finding (own compilation from zones report, 2019), which compromised the high school standard. A teacher must have a first degree to teach secondary education as per the standard. Hence, one can infer that those incompetent teachers were teaching secondary education, which affected the quality of education.

Data analysis on process management at the school level

From Factor 4 of Table 3, respondents disagreed with the statement that principals frequently call parents to discuss how to improve students' achievement and that principals often call parents to discuss students' disciplinary problems. However, they were undecided when they were asked whether principals encourage parents to support the schools in the form of labor, whereas they agreed with the item that principals initiate parents to support the school by contributing cash.

From Factor 5 of Table 3, teachers disagreed when they were asked to rate whether principals usually evaluate students' achievements, whether they discuss the drawbacks of exam cheating with the school community, whether they strictly follow examination provisions, and whether they often discuss with the school community how to improve teaching. Differently, they were undecided when they were asked to rate whether principals prohibit students from bringing their phones during the examination. From this, one can infer that principals' practices in monitoring students' progress were poor.

From Factor 6 of Table 3, teachers were asked to respond to 'whether their school principals conduct needs assessments before offering training to teachers and whether principals offer training to teachers,' and they disagreed with the items. Alternatively, when they were asked to respond to 'whether school-level teacher training was based on students' achievement, principals encouraged teachers to participate in training,' they rated the items as undecided. The overall staff development practices were low.

Teachers agreed with the items in Factor 9 of Table 3 when asked if principals acknowledge those students who work harder and those who display good behavior in community gatherings. When they were asked to respond to whether 'principals acknowledge teachers' good performances in staff meetings,' they rated the items as undecided. Hence, the practices for incentives were average and above average.

Data analysis on quality management practices at the classroom level

From Factor 1 of Table 4, teachers agreed when they were asked to respond to whether principals encourage teachers to apply continuous assessment, whether they encourage teachers to show the results of the evaluation, whether they encourage teachers to change teaching methodology, and whether

Table 1. **Availability of quality and quantity of secondary school inputs.**

Factor	Factor Loading	Availability of Well-equipped Laboratories and their Practices in Schools	Mean	SD
2	.723	A well-equipped Physics laboratory is found in our school	2.34	0.823
	.702	In Physics teaching-learning process, students usually use the Physics laboratory	2.27	1.127
	.824	The well-equipped Chemistry laboratory is found in our school	2.11	1.565
	.716	In the Chemistry teaching-learning process, students usually use the Chemistry laboratory	2.19	0.931
	.862	A well-equipped Biology laboratory is found in our school	2.13	0.566
	.775	In the Biology teaching-learning process, students usually use the Biology laboratory	2.17	1.016
	.716	Necessary chemicals are available in the laboratory centers	2.28	1.143
	Grand Mean		2.21	
Factor	**Factor L.**	**Availability and Functionalities of School Libraries**	**Mean**	**SD**
7	.760	Our library has recent books	3.32	1.119
	.703	Students often use the library	3.43	1.029
	.696	Orientation was given to students on how to search books	3.02	1.134
	.699	The school has trained librarians	2.61	1.279
	Grand Mean		3.10	
Factor	**Factor L.**	**Incoming Grade 9 Students' Readiness to Learn**	**Mean**	**SD**
8	.814	Grade 9 students have the knowledge that deserves the grade	1.80	0.852
	.802	Grade 9 students have a good command of the English language	1.68	0.850
	.758	Grade 9 students have the motivation to learn	2.22	0.961
	Grand Mean		1.90	
Factor	**Factor L.**	**Incoming Teachers' Readiness to Teach**	**Mean**	
10	.777	Teachers select the teaching profession as a last option	3.40	1.015
	.722	All secondary school teachers had a first degree in any subject	2.34	1.302

Table 2. **Grade nine students' achievement in regional examinations in 2014–2018.**

Year	Zone	Took Exam	Promoted	No of students who scored 50% and above	% of promoted having score of below standard	Cut-points
2014	Sheka	3,619	2,306	889	61.5	Male=38 Female=37
	Bench-Maji	6,658	5,071	1,579	68.9	
	Kafa	18,164	8,989	3,870	57.0	
	Total	**28,441**	**16,366**	**6338**	**Average 62.5**	
2015	Sheka	4,002	2,835	1,400	50.7	40 for both
	Bench-Maji	8,509	6,696	3,923	41.5	
	Kafa	23,505	18,062	9,727	46.2	
	Total	**36,016**	**27,593**	**15,050**	**Average 46.1**	

Year	Zone	Took Exam	Promoted	No of students who scored 50% and above	% of promoted having score of below standard	Cut-points
2016	Sheka	5,042	4,328	3,087	28.7	42 for both
	Bench-Maji	11,879	10,501	8,054	23.4	
	Kafa	21,062	17,119	11,911	30.5	
	Total	**39,983**	**31,948**	**23,052**	**Average 27.5**	
2017	Sheka	5,383	3,468	1,408	59.5	40 for both
	Bench-Maji	11,837	6,886	2,729	60.4	
	Kafa	20,235	15,777	8,971	43.2	
	Total	**37,455**	**26,131**	**13,108**	**Average 54.4**	
2018	Sheka	6,197	5,397	2,949	45.4	Male=40 Female=38
	Bench-Maji	14,906	10,952	5,189	52.7	
	Kafa	20,814	16,664	8,298	50.3	
	Total	**41,917**	**33,013**	**16,436**	**Average 49.5**	
Five years					**Average 48.0**	

Source: Own compilations from the zones' examination experts' reports

Table 3. Principals' quality management practices at the school level.

Factor	Factor Loading	Principals' Management Practices on Parental Support	Mean	SD
4	.737	Principals frequently call parents to discuss how to improve students' achievement	1.85	1.153
	.715	Principals often call parents to discuss students' disciplinary problems	2.01	0.792
	.765	Principals encourage parents to support the school in the form of labor	2.52	1.229
	.767	Principals initiate parents to support the school in the form of contributing cash	3.04	1.158
	Grand Mean		2.35	
Factor	**Factor L.**	**Principals' Management Practices on Students' Achievement (Outputs)**	**Mean**	**SD**
5	.719	Principals usually evaluate students' achievements	2.40	0.875
	.759	Principals discuss the drawbacks of cheating on the exam with the school community	2.26	0.975
	.727	Principals usually discuss with the school community how to improve teaching	2.34	0.879
	.751	Principals strictly follow examination provision	2.10	0.959
	.732	Principals prohibit students not to bringing their phones during the examination	2.55	1.029
	Grand Mean		2.33	
Factor	**Factor L.**	**Principals' Management Practices on Staff Development**	**Mean**	**SD**
6	.726	Principals conduct need assessment before offering training	2.40	1.097
	.745	Principals offer training to teachers	2.26	0.957
	.732	School-level teacher training is based on students' achievements	2.64	1.111
	.718	Principals encourage teachers to participate in training	2.68	1.154
	Grand Mean		2.49	

Factor	Factor L.	Principals' Management Practices on the Provision of Incentives	Mean	SD
9	.867	Principals acknowledge those students who are working better	3.14	1.268
	.804	Principals acknowledge those students who displayed good behavior in the community gatherings	3.13	1.273
	.765	Principals acknowledge teachers with good performances in staff meetings	2.81	1.236
	Grand Mean		3.03	

Table 4. Principals' quality management practices at the classroom level.

Factor	Factor Loading	Principals' Practices on Continuous Assessment	Mean	SD
1	.753	Principals encourage teachers to apply continuous assessment	3.77	1.020
	.713	Principals encourage teachers to show the results of the evaluation	3.33	1.054
	.751	Principals encourage teachers to offer a tutorial class	3.50	1.093
	.743	Principals follow whether teachers enter the classroom just on time	2.36	0.513
	.708	Principals ensure whether teachers use the allocated time properly	2.38	0.563
	.700	Principals encourage teachers to offer makeup classes	2.87	0.614
	Grand Mean		3.09	
Factor	**Factor L.**	**Principals' Practices in Managing Instructional Time**	**Mean**	**SD**
3	.855	Principals follow whether teachers give homework	2.50	1.111
	.843	Principals follow whether teachers check homework	2.42	1.067
	.812	Principals follow whether teachers give classwork	2.28	1.057
	.810	Principals follow whether teachers check classwork	2.36	1.061
	Grand Mean		2.39	

they encourage teachers to offer a tutorial class. Differently, they disagreed when they were asked whether principals follow whether teachers enter the classroom on time and whether they use the allocated time properly. Conversely, they were undecided when asked whether principals encourage teachers to offer makeup classes.

From Factor 3 of Table 4, teachers disagreed with items such as principals' practices of following up on whether teachers offer and check classwork and homework. From this, one can infer that the principals' management of instructional time was poor.

Grade 10 students' National Examination achievements

When the inputs are available in quantity and quality and their interactions are managed carefully, most Grade 10 students score according to the standard (50%). The following table shows the extent of students' achievement.

Table 5 shows the average sample school Grade 10 national examination results in 2017, better than the 2018 results. In 2017, out of 4508 students who took national examinations, 46.5% scored below standard. The situation was worse in 2018. Of 5,911 students who took the grade 10 national examination, 55% scored below standard. However, we should note the results of the national examination with caution. The way we gain the results matters most. We might attain the result through backbreaking efforts made at different levels of education management or by allowing examination cheating. Hence, it is difficult to infer that school 'A' performed better than school 'B,' 'C,' or *vice versa*.

The relationship between input, process, and output management

This study examined the relationships between input, process, and output management. We base the interpretation of the strength of the relationship on Cohen's (1988) classification

Table 5. Sample schools' grade 10 national examination results in 2017 and 2018.

No	School's Name	2017 Grade 10 National Exam			2018 Grade 10 National Exam		
		Took exam	Score 2 & above	% of students scored below standard	Took exam	Score 2 & above	% of students scored below standard
1	"A" Secondary & Preparatory	370	179	51.7	419	207	50.6
2	"B" Secondary & Preparatory	271	154	43.2	295	115	61.1
3	"C" Secondary & Preparatory	447	217	51.5	710	321	54.8
4	"D" Secondary & Preparatory	554	350	36.9	858	453	47.3
5	"E" Secondary & Preparatory	1,120	545	51.4	1,292	344	73.4
6	"F" Secondary & Preparatory	486	236	51.5	652	103	84.3
7	"G" Secondary & Preparatory	208	128	38.5	342	182	46.8
8	"H" Secondary & Preparatory	269	139	48.4	359	179	50.2
9	"I" Secondary & Preparatory	323	203	37.2	449	277	38.4
10	"J" Secondary & Preparatory	460	214	53.5	535	224	41.9
Total		**4,508**	**2365**	**Average 46.5**	**5,911**	**2405**	**Average 55**

Source: Researcher's compilation from secondary schools' reports in outlined in document analysis methods.

of correlation. According to the author, r = 0.10-0.29 is small, r = 0.30-0.49 is medium, and r = 0.50-1.0 is high.

The relationship between input and process is positive and significant with a correlation value of 0.572, whereas the relationship between input and output is moderate and positive with a correlation value of 0.385. Finally, the relationship between process and output is positive and high, with a correlation value of 0.647 (Table 6).

Table 6. The correlation between input, process, and output.

Correlations				
		Input	Process	Output
Input	Pearson Correlation	1	.572**	.385**
Process	Pearson Correlation	.572**	1	.647**
Output	Pearson Correlation	.385**	.647**	1

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

Discussions

In this study, the researcher examined the availability of inputs. Besides, he examined whether the schools received qualified teachers and students from the external environment. The findings show that secondary school laboratories were not functioning correctly because of a lack of laboratory equipment and chemicals. This finding resonates with Zengele and Alemayehu's (2016) findings. However, Fuller and Clarke (1994) conducted a meta-analysis, and they found that eight out of 13 studies show the significance of laboratories on students' achievement. Hence, students lack the practical experience that could help them think critically and solve problems they face.

Various studies (Darling-Hammond, 2000; van den Bergh *et al.,* 2014) show a positive relationship between students' achievement and teachers' subject knowledge, skills, and motivation. Besides, teachers' readiness and commitment affect the implementation of educational reforms. However, from the outset in Ethiopia, most teachers were not interested in the teaching career because the salary in the career is relatively lower than the similar status of other professions such as accountants, lawyers, and so forth. This finding resonates with Kassa's (2014) finding. For instance, Kassa found that the initial reason for the students' entering a teaching career was the absence of other alternatives. From this, one can infer that the Ethiopian government expects teachers' contributions to economic development from unmotivated and inept teachers. Finally, the researcher reviewed zone students' regional examination results for five years (2014–2018). On average, 48% of grade nine students scored below the standard (50%). Studies show that students' achievement and motivation for learning have significant and positive relationships (Singh *et al.,* 2017). It is challenging to expect motivated and committed students from unmotivated, incompetent, and uncommitted teachers.

The importance of incentivizing good-performing teachers is not a matter of choice; instead, a one standard deviation increment in teacher performance is associated with a 0.15–0.24 standard deviation increment in mathematics and reading achievements

(Aaronson *et al.,* 2007; Rockoff, 2004). In this study, the provision of rewards for good performance was average. This finding is inconsistent with Ahmed's (2015) finding. The author found that the principal's practices for providing incentives to teachers and students were poor.

Studies show a relationship between staff development and student achievement (McMeeking *et al.,* 2012). However, staff development in the study area was low. This finding resonates with the findings of Berehe *et al.* (2018). They found out that staff development was inadequately implemented.

There is a significant relationship between student achievement and continuous assessment (Fareo, 2020). However, continuous assessment practice was not as expected in the study area. Though principals encourage teachers to offer tutorial and makeup classes and continuous assessments, it is impractical due to large class sizes, a shortage of classrooms, and demotivated teachers and students. This finding is consistent with Asale's (2017) finding. The author found that continuous assessments were not correctly implemented because of similar problems. Besides, Fuller and Clarke's (1994) meta-analysis results show that out of 33 studies conducted to examine the effect of instructional time on student achievement, 27 studies showed the significance of instructional time on student learning. However, the management of instructional time was abysmal. This finding goes with Asale's (2017) finding. The author found that the management of instructional time was impoverished.

This study found relationships between inputs, processes, and outputs. This finding resonates with the findings of Rumberger and Palardy (2005). They found that there are relationships between inputs, processes, and outputs. Generally, this study found that the dearth of school resources, the ineffectiveness of process management, and the resultant students' lower achievement generally were causally linked. The country's policy implementation practices exacerbate the problem. Since Ethiopia signed the Education for All, it has been expanding schools at all levels at the expense of quality to convince donor organizations to borrow money. Consequently, the promotion policy was compromised, the importance of motivation of principals, teachers, and students were forgotten, and the secondary education budget was switched to higher education (Joshi & Verspoor, 2012).

The global community highly values the right to quality education. It is enshrined in a set of human rights obligations and politicians regarded as critical in building social transformation. This understanding is illustrated by the global goals approaches and is expected to address over the last two decades. The international community established EFA goals in 1990 in Jomtien, Thailand, and in 2000, they were confirmed at the World Education Forum in Dakar, Senegal. The EFA debate has seen a wide range of national responses, as well as large swings in the international agenda: focusing on educational outcomes and quality rather than school access, enrolment, and retention; and moving away from understanding equity and quality as two sides of the same coin, in that education for all cannot correctly entail quality for just some (Lim, 1999; Tishkovskaya & Lancaster, 2012; UNICEF, 2007; Weldemariam, 2008).

Limitation of the study

Quality management practices involve the efforts of different actors such as policy planners, researchers, education managers at different levels, principals, teachers, and students. However, this study focused only on principals' quality management practices. The role of context was uncovered in this study. A more comprehensive study is crucial to see the whole picture of quality management practices.

Conclusion

The school imported under-qualified teachers and students, together with other poor-quality inputs from the external environment, and the interactions of these inputs were not correctly managed. Furthermore, students' promotion policies and teachers' recruitment policies were compromised. Besides, schools were not working in line with the standards. Due to this, the policy's intention on paper and the practices on the ground are incongruent. Therefore, achieving the very objectives of producing creative, critical, and problem-solving individuals through the existing educational provision and management is complex.

Recommendation on management practices

As argued in the discussion, the schools lacked key school inputs, the processes were managed ineffectively, and students' achievements were unacceptably low. Although the study was conducted at the school and classroom levels, principals could not solve these problems independently. Therefore, the Regional Education Bureau should fulfill the schools' inputs per the high school standard. The Ministry of Education should revisit its practices of compromising promotion policies, underfunding secondary education, and recruiting unmotivated and under-qualified teachers. Finally, principals should revisit their practices on quality management to do their best.

Recommendation for future research

The Ethiopian Education Road Map study showed that school principals, teachers, and students lack the motivation to engage in the teaching-learning process. Therefore, a comprehensive study is suggested to examine why principals, teachers, and students lack motivation and commitment to teaching-learning.

Data availability

Underlying data

The information gathered for this study relates to three zone education departments in the Southern Nations, Nationalities, and People's Region, which provides a significant competitive advantage. The zones do not believe that all data gathered was public because education quality issue is more political and for data protection of zone education departments and teachers. As a result, the raw data are restricted and only the processed data and the Amharic and English versions of questionnaires are available as underlying and extended data. If the raw data are needed for scientific purposes or to clarify ambiguities in the manuscript, they will be available from the corresponding author (aklilualemu16@gmail.com).

Figshare: Exploratory Factor Analysis Output.docx https://doi.org/10.6084/m9.figshare.20092661. (Aklilu, 2022).

This project contains the following underlying data:

- The Average variance extracted.docx (No of items, their factor loadings, and average variance explained).
- Exploratory factor analysis out put.docx. (Descriptive statistics, KMO & Bartlett's test, total variance explained, and communalities).

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

Extended data

Figshare: Exploratory Factor Analysis Output.docx https://doi.org/10.6084/m9.figshare.20092661. (Aklilu, 2022).

This project contains the following extended data:

- Questionnaire (English version after expert review).
- Questionnaire (Amharic version).
- Questionnaire (English version before expert review)

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

References

Aaronson D, Barrow L, Sander W: **Teachers and student achievement in the Chicago public high schools.** *J Labor Econ.* 2007; **25**(1): 95–135.
Publisher Full Text

Abdellah AJ, AlGhamdi SA: **School Leaders' Responsibilities and the Effect on Quality Education: A Systematic Review.** *Journal of Educational and Learning Studies.* 2021; **10**(1): 193–206.

Ahmed KA: **Instructional leadership practices in secondary schools of Assosa Zone, Ethiopia.** *Eur J Bus Manag.* 2015; **7**(28): 2222–2839.
Reference Source

Al-Alak BA, Al-Sabbagh BA: **Total quality management and its impact on educational institutions in the Kurdistan region-Iraq.** *Quality Assurance in Education.* 2021; **29**(2): 206–224.

Al-Hadhrami T, Al-Kharusi AS, Khamis M: **The impact of total quality management on customer satisfaction: A study in the banking sector.** *Quality Engineering.* 2021; **33**(2): 228–242.

Alexander RJ: **Teaching and learning for all? The quality imperative revisited.** *Int J Educ Dev.* 2015; **40**(2015): 250–258.
Publisher Full Text

Altinok N, Angrist N, Patrinos HA: **Global data set on education quality (1965-2015)**. In: *Policy Research Working Paper* (No. 8314; Issue January). 2018.
Publisher Full Text

Aklilu AA: **Exploratory Factor Analysis Output.docx**. *figshare*. Dataset. 2022.
http://www.doi.org/10.6084/m9.figshare.20092661.v1

Aklilu AA, Dabi K, Chan TC: **Stakeholders' perception of political influences on quality management of secondary education in Ethiopia.** *Education Plan.* 2021; **28**(1): 35–53.
Reference Source

Asale TS: **Factors affecting implementation of student-centered method in mathematics classes: The case of Otona secondary school grade 10, Wolayta Zone, SNNPR.** *Int Educ Sci Res J.* 2017; **3**(8): 62–78.
Reference Source

Benavot A, Köseleci N: **Seeking quality in education: the growth of national learning assessments, 1990-2013**. Paper commissioned for the EFA Global Monitoring Report 2015, Education for All 2000-2015: achievements and challenges. 2015.
Reference Source

Berehe D, Legesse D, Tadesse A: **Practice of school-based continuous professional development in government secondary schools Of Arbaminch City Adiministration.** *IOSR Journal Of Humanities And Social Science (IOSR-JHSS).* 2018; **23**(10): 34–39.

Best JW, Kahn JV: **Research in Education (7th ed.)**. Prentice-Hall of India Plc, 1995.

Central Statistical Agency: **Summary and statistical report of the 2007 population and housing census.** 2008.
Reference Source

Central Statistical Agency: **Population and housing census of Ethiopia: Statistical Report for Southern Nations, Nationalities, and Peoples' Region.** Addis Ababa: CSA, 2021.

Cohen J: **Statistical power analysis for the behavioral sciences (2nd ed.)**. Lawrence Erlbaum Associates. 1988.
Reference Source

Creemers BPM: **Educational effectiveness and improvement in developing societies. Some experiences from the Primary Education Quality Improvement Project in Indonesia. Educational effectiveness and improvement in developing societies: Some Experience.** *Tertium Comparationis Journal Für Internationale Bildungsforschung.* 1999; **5**(1): 32–51.
Publisher Full Text

Creswell JW: **Research design: Qualitative, quantitative, and mixed-method approaches (4th ed.)**. SAGE Publications, Inc, 2014.
Reference Source

Darling-Hammond L: **Reforming teacher preparation and licensing: Debating the Evidence.** *Teach Coll Rec.* 2000; **102**(1): 28–56.
Publisher Full Text

Darojat O: **How are the results of quality assurance programs used to inform practices at a distance higher education?** *Turk Online J Distance Educ.* 2018; **19**(1): 75–88.
Reference Source

Elahi F, Ilyas M: **Quality management principles and school quality: Testing moderation of professional certification of the school principal in private schools of Pakistan.** *TQM J.* 2019; **31**(4): 578–599.
Publisher Full Text

Ethiopian Tourism Organization: **Southern Ethiopia - The cradle of mankind.** n.d.
Reference Source

Ezeuduji IO, Ezejiofor RA, Ibemesi OS: **Total quality management practices in general education: An empirical investigation of the role of leadership, communication and stakeholder involvement.** *Open Journal of Business and Management.* 2021; **9**(1): 128–139.

Fareo DO: **Influence of continuous assessment on academic performance of secondary school students in Biology in Hong local government area of Adamawa State, Nigeria.** *Int J Sci Res Innov.* 2020; **VII**(I): 190–196.
Reference Source

Field A: **Discovering statistics using SPSS ISM: Introducing statistical methods series (3rd ed.)**. In SAGE Publication Plc, 2009.
Reference Source

Firszt-Andrzejewska G, Krajewski P, Wołoszyn K: **School quality management practices and their impact on teacher job satisfaction and student achievement-the perspective of school heads.** *Int J Environ Res Public Health.* 2021; **18**(11): 5601.

Fuller B, Clarke P: **Raising school effects while ignoring culture? Local conditions and the influence of classroom tools, rules, and pedagogy.** *Rev Educ Res.* 1994; **64**(1): 119–157.
Publisher Full Text

Garson GD: **Testing statistical assumptions: Blue Book Series**. Asheboro: Statistical Associate Publishing, 2012; 18–19.
Reference Source

Glewwe P, Muralidharan K: **Improving school education outcomes in developing countries: Evidence, knowledge gaps, and policy implications**. In Research on Improving Systems of Education. (Issue October). 2015.
Reference Source

Harman G, Meek VL: **Repositioning quality assurance and accreditation in Australian higher education**. Evaluations and Investigations Program Report. 2000.
Reference Source

Hungi N, Makuwa D, Ross K, *et al.*: **Southern and Eastern Africa Consortium for Monitoring Educational Quality III project results: Pupil achievement levels in reading and mathematics**. In: *SACMEQ*. 2010; **9406**(8).
Publisher Full Text

Ibrahim Y, Arshad R, Salleh D: **Stakeholder perceptions of secondary education quality in Sokoto State, Nigeria.** *Qual Assur Educ.* 2017; **25**(2): 248–267.
Publisher Full Text

Johnson RB, Christensen L: **Educational research: Quantitative, qualitative, and mixed approaches (5th ed.)**. SAGE Publications, Inc. 2014.
Reference Source

Joshi R, Verspoor A: **Secondary Education in Ethiopia: Supporting growth and transformation**. In World Bank. The World Bank. 2012.
Publisher Full Text

Karia N, Kwek MJ, Chan SC: **The mediating role of employee satisfaction in the relationship between total quality management and organizational performance.** *Quality Assurance in Education.* 2020; **28**(2): 64–81.

Kassa K: **Attitude of postgraduate diploma in teaching student teachers towards teaching profession in Ethiopian University College of teacher education.** *Middle East African J Educ Res.* 2014; **7**: 44.
Reference Source

Kast FE, Rosenzweig JE: **General systems theory: Applications for organization and management.** *J Nurs Adm.* 1981; **11**(7): 32–41.
PubMed Abstract | **Publisher Full Text**

Lewal US, Yakubu MA: **Quality assurance practice and instructional delivery among secondary school civic education teachers in Kaduna State, Nigeria.** *Br J Edu.* 2018; **6**(3): 41–56.
Reference Source

Lim D: **Quality assurance in higher education in developing countries.** In Assessment and Evaluation in Higher Education. 1999; **24**(4): 379–390.
Publisher Full Text

Maat SM, Zakaria E, Nordin NM, *et al.*: **Confirmatory factor analysis of the mathematics teachers' teaching practice instrument.** *World Applied Sciences Journal.* 2011; **12**(11): 2092–2096.
Reference Source

McMeeking LB, Orsi R, Brian Cobb R: **Effects of a teacher professional development program on the mathematics achievement of middle school students.** *Journal for Research in Mathematics Education.* 2012; **43**(2): 159–181.
Publisher Full Text

MOE: **High school standard. Ministry of Education.** 2009.

MOE: **Education Sector Development Programme V (ESDP V).** 2015.
Reference Source

Ndofirepi AP: **Quality education in Africa: Introducing philosophy for children to promote open-mindedness.** *Africa Education Review.* 2012; **9**(1): S26–S40.
Publisher Full Text

Negash T: **Education in Ethiopia: From crisis to the brink of collapse.** In Nordiska Afrikainstitutet Discussion Paper. 2006.
Reference Source

O'Sullivan D: **Evolution of internal quality assurance at one university – a case study.** *Quality Assurance in Education.* 2017; **25**(2): 189–205.
Publisher Full Text

Patrinos HA, Angrist N: **Global dataset on education quality: A review and update (2000–2017).** In *Background paper to the world development report* (No. 8592; Issue September). 2018.
Publisher Full Text

Pourrajab M, Basri R, Daud SM, *et al.*: **The resistance to change in the implementation of total quality management (TQM) in Iranian schools.** *TQM Journal.* 2015; **27**(5): 532–543.
Publisher Full Text

Reddy S: **School quality: Perspectives from the developed and developing countries (Issue February,). Azim Premji Foundation.** 2007; 108.

Rigopoulos G, Verros G, Kostopoulos V: **Total quality management in higher education institutions: a systematic review.** *Quality Assurance in Education.* 2021; **29**(3): 304–326.

Robinson VMJ: **School leadership and student outcomes: Identifying what works and why.** In *October* (Issue 41). ACEL Monograph Series. 2007; (41).
Reference Source

Rockoff JE: **The impact of individual teachers on student achievement: Evidence from a panel data source.** *Am Econ Rev.* 2004; **94**(2): 247–252.
Publisher Full Text

Rohwer G: **Models in statistical social research.** Routledge Taylor & Francis Group. 2010.
Publisher Full Text

Rumberger RW, Palardy GJ: **Test scores, dropout rates, and transfer rates as alternative indicators of high school performance.** *Am Educ Res J.* 2005; **42**(1): 3–42.
Publisher Full Text

Scheerens J: **Perspectives on educational quality: Illustrative outcomes on primary and secondary schooling in the Netherlands.** Springer Dordrecht Heidelberg. Springer, 2011.
Publisher Full Text

Singh AS, Masuku MB: **Sampling techniques & dertermining sample size in applied statistics research: an overview.** *International Journal of Economics, Commerce and Management.* 2014; **II**(11): 1–22.
Reference Source

Singh S, Misra R, Srivastava S: **An empirical investigation of student's motivation toward learning quantitative courses.** *International Journal of Management Education.* 2017; **15**(2): 47–59.
Publisher Full Text

Tabachnick B, Fidell L: **Using multivariate statistics (2nd ed.).** Harper Collins. 2001.

Thien LM, Razak AN: **A proposed framework of school organization from open system and multilevel organization theories.** *World Applied Sciences Journal.* 2012; **20**(6): 889–899.
Reference Source

Tishkovskaya S, Lancaster GA: **Statistical education in the 21st century: A review of challenges, teaching innovations, and strategies for reform.** *Journal of Statistics Education.* 2012; **20**(2).
Publisher Full Text

Transitional Government of Ethiopia: **Education and Training Policy of Ethiopia**. St. George Printing Press. 1994.
Reference Source

Treviño E, Ordenes M: **Exploring commonalities and differences in regional and international assessments (Issue December).** 2017.
Reference Source

UNESCO: **Teaching and learning: Achieving quality for all.** In: *EFA Global Monitoring Report.* 2014.
Reference Source

UNESCO: **Education for all 2000-2015: Achievement and challenges.** In: *EFA Global Monitoring Report.* 2015.
Reference Source

UNICEF: **A human rights-based approach to Education for All. In Practice**. 2007.
Reference Source

UNICEF: **Child-friendly schools manual**. In UNICEF. 2006.
Reference Source

USAID: **Ethiopia: Country Development Cooperation Strategy 2020-2025.** 2020.
Reference Source

van den Bergh L, Ros A, Beijaard D: **Improving teacher feedback during active learning: Effects of a professional development program.** *Am Educ Res J.* 2014; **51**(4): 772–809.
Publisher Full Text

van Kemenade E: **Patterns emerging from the TQM paradigm in relation to the 21st-century complex context within TQM journal.** *TQM J.* 2022; **34**(3): 494–514.
Publisher Full Text

Verspoor A, Bregman J: **At the crossroads: Challenges for secondary education in Africa**. 2008.
Reference Source

Vroeijenstijn AI: **Improvement and accountability: Navigating between Scylla and Charybdis**. Jessica Kingsley, UK. 1995.
Reference Source

Weerasinghe IMS, Fernando RLS: **Critical factors affecting students' satisfaction with higher education in Sri Lanka.** *Qual Assur Educ.* 2018; **26**(1): 115–130.
Publisher Full Text

Weldemariam MD: **Higher Education Quality Audit in Ethiopia: Analyzing the Methods and Procedures**. University of Oslo. 2008.
Reference Source

World Bank: **Learning to realize education's promise**. In World development report. 2018.
Publisher Full Text

World Bank: **Public expenditure and financial accountability Federal Democratic Republic of Ethiopia (Southern Nations, Nationalities and Peoples Region)**. 2020.
Reference Source

Zengele AG, Alemayehu B: **The status of secondary school science laboratory activities for quality education in Case of Wolaita Zone, Southern Ethiopia.** *J Educ Pract.* 2016; **7**(31): 1–11.
Reference SourceS

Open Peer Review

Current Peer Review Status: ✔ ? ✔

Version 2

Reviewer Report 17 July 2023

https://doi.org/10.21956/emeraldopenres.16209.r29018

© **2023 Ashraf M.** This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

✔ **Maleeha Ashraf**
[1] University of Sunderland, london, United Kingdom
[2] IOE University College London, London, United Kingdom

The author has successfully provided a detailed insight into the need of educational quality management practices perceived by Ethiopian secondary school teachers. The findings confirm the impracticality of laboratories; incompetent and unmotivated teachers that ultimately results in unmotivated students; lacking professional development opportunities for academic staff; lower parental support. It is not surprising that Ethiopian secondary schools failing to achieve quality education targets in the absence of effective quality management practices.

The results are provided with clarity and consistent with research topic. A well written and organised article that was a good read. The recommendations on management practices and for future research provided with an excellent knowledge that could be supporting to set a policy in future.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Higher Education (HE), International Education, Gender Inequality in HE, Women Careers in HE, Curriculum Development, Service Quality Management, Public and Private Secondary Schools, Developing Countries

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 14 July 2023

https://doi.org/10.21956/emeraldopenres.16209.r29083

© 2023 Ayenalem K et al. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

?

Kindu Ayechew Ayenalem
University of Gondar, Gondar, Ethiopia
Samuel Zinabu Desta
University of Gondar, Gondar, Ethiopia

General comment: Dear author, thank you very much for your painstaking effort to come up with a research finding in a contemporary issue of quality education. Due to the dynamic nature of quality education itself, we think the area is always open for rigors scientific studies such as yours. As a general observation, we can say that the issue of quality education in Ethiopia in general and in secondary schools in particular is not well and comprehensively investigated. In this regard, your study sheds some light on the area. Particularly, you looking at the point in relation to the role of school leaders in managing quality education is, very important topic that will have its own

contributions and implications not only to the directly investigated issue but also on the training and professionalization of principals and their accountability now and in the future. Thus, before we directly go to the details of our comments for improvement of the quality of your article, we would like to acknowledge your overall efforts on such worthy topic of interest. As we sated in our introductory statement, you did a thorough effort in this study and qualities of such efforts are observed in your paper. Despite such positive qualities that we mentioned in your study, we feel that there are also some constraints of the paper that needs your reconsideration to improve its qualities a bit more. **For convenience and better understanding of our comments and suggestions, we organized them in such way as presented below.**

Title, Abstract, and Introduction

- **Title:** Your title is clearly stated except for minor reconsideration. As most your discussions indicated your main issue seems that you investigated **the quality management practices of principals as perceived by their teachers**, is that not? We think so. Thus, be sure that whether your title clearly conveys such (your) intent. What do you think, if the title is restated either: "Secondary school teachers' perception of quality management practices of Principals in Ethiopia: Implications for quality education for all", or "The quality management practices of secondary school principals in Ethiopia as perceived by their teachers: Implications for quality education for all". Compare the suggested titles with yours and decide on the one that best reflects your intention.

- **Abstract:** Your abstract is organized in a good way, it is informative. However, please consider the following points: first, the background information presented with the purpose of the study is a bit far to your topic. It is about the education failure in the elementary school level. Though the statement has implication with quality, it does not touch the scenario in secondary schools. So, please make it an appropriate background typically to your case. Second, there is a bit unclear sentence in your abstract of the results section, probably due to the use of inappropriate word/s. …*The principals' management practices in the teaching-learning process were also undesirable at the classroom level*. Does this sentence mean teachers do not want the principals' intervention in the classroom teaching learning process or they perceive that the principals' practices in such regard are inadequate? Please consider its clarity. Third, there are some minor editing issues that I indicated them by **cross outing** them in the pdf document. Fourth, in the abstract section (methods) also, why do you prefer to write "he" instead of "I" or "the researcher"? Since it is your research report, we advise you to use "I" or "the researcher" in the entire paper.

Introduction and statement of the problem:

1. **General and specific comments:** The two sections more or less seems well done. However, there is a great **concern of idea flow**, **the paragraphs seems lack coherence**. For example, your introduction section has **six paragraphs**, of which the first one is about the link between nation's wealth and their human capital development and the poor status of quality learning/achievement in **elementary school** in most low-income countries. Though this is good information by itself, **it does not look at the case in secondary schools**. The second paragraph is about the role or practice of quality management by school leaders/principals/heads (***We think, readers need to about quality issue, at least the concept before they know how principals managed it***). The third, fourth, and fifth paragraphs are about the Ethiopian government aspirations and attempts towards quality education. The last paragraph of your introduction provides several different issues (**They *may not be incorporated in one single paragraph***): (a) concept of quality and how it is used

in your study, (b) study results about one sided focus (administrative) of the Ethiopian principals and the interference of supervisors and inspectors, (c) evidence of the gaps of addressing management of quality education in secondary schools in sub-Saharan Africa (***which seems that you are rationalizing your study***), (d) the purpose of your study " *investigating the practices* ***and challenges*** *(***have you studied about the challenges, we doubt)** *of quality management in terms of input availability and management and the proper functioning of the teaching-learning process to produce desired outputs in secondary schools in the Southern Nations, Nationalities, and People Regions (SNNPR) of Ethiopia." (****This seems very appropriate if it appears at the end of your statement of the problem section****).*

2. Coming to the statement of the problem, it comprises **four paragraphs.** The first paragraph is about **the role of school principals in students' achievement (*a bit similar with paragraph two of the introduction section*)**: the second one is about failure of quality education in Ethiopia (***this can be discussed under paragraph 5 immediately with the last sentence of the paragraph)***. The third paragraph is about comparison of the SNNPR students' national assessment score with the other three regions (***We think, it is in this paragraph you put one rationale for your study***). From quality perspective in terms of students' low achievement, selecting SPNNR as your rationale sounds good. But, why you focus on principals' quality management? Why not on other actors and aspects of education quality? You can ignore my questions. **But, our point is make your rationale of a study a bit more strong and convincing**. The last paragraph is about how your study is different from others (***this paragraph can be interwoven with paragraph three of the statement of the problem***. My rationales are… and the study is quite different from others in….)

3. **Additional comment**: this is an article, a compressed and condensed form of an original lengthy study either master thesis, PhD dissertation or any other research project. Hence, it is better to you avoiding the two splits, introduction and statement of the problem. In most cases, articles contain an introduction (both the combination of the background and statement of the problem). When you do this, it is easy to keep coherence of paragraphs and maintain general idea flow of the introduction, easy to avoid redundancy of ideas, clear to readers and essential to enlist their interest. If you accept our suggestion about **combining the introduction and statement** of the problem section into **one introduction** , we would prefer, if your paper is organized in such flow:

- *The issue of quality education at broader level*
- *General Quality education issue at Ethiopia*
- *Quality education in secondary schools and the role/practice of principals' in managing it*
- *The main issue of concern (the context and rationales of this specific study accompanied with its objectives/questions)*

    - In the introduction section paragraph 3 of the last sentence you stated that "All of them were planned to respond to human capital development needs that could contribute to poverty reduction and the country's economic development (MOE, 2015)". Do you mean by all the macroeconomic development programs you mentioned were planned to respond to human capital development needs? We recommend you revise this sentence.

    - Some minor issues in the statement of the problem section: in **paragraph 2 line 4, a**

statement says "*For instance, the World Bank found that student achievement in secondary school was low, but the graduates lacked the necessary skills to enter the world of work"*. Our concern is …**is but** an appropriate conjunction here? Consider editing. In **paragraph 3 line 3, a phrase…** among **larger regions** such as…. Make it specific. Larger regions in terms of what? Total population, student population, geographical area, or what?

- In the statement of the problem section Lines 9-11; you need to show the target and the achievement to inform us of the real gap between the target and the achievement. "…For example, in ESDP IV, the ministry set targets in 2014 for grades 4, 8, 10, and 12 in Mathematics, English, Biology, Physics, and Chemistry. Nonetheless, the ministry did not achieve the targets (MOE, 2015). These illustrate the legacy of poor-quality education."

Questions/Objectives: Generally, the research questions are worth to investigate the issue at hand. However, the way the questions stated lack clarity and over generalized in terms of study setting. For example, let us look at them:

1. How do teachers perceive the inputs to secondary schools in Ethiopia? (***This question lacks clarity. Inputs in terms what? Availability, adequacy, relevance and appropriateness, or quality?)*** Alternative suggestion: What is the perception of teachers about the availability of adequate inputs in secondary schools of the study area?

2. How do teachers perceive school-level quality management practices in Ethiopian secondary schools? (***Considering your topic and intent***, ***it is better if the question is restated as:*** what is the perception of teachers towards school-level quality management practices of principals' in secondary schools of the study area?)

3. How do teachers perceive classroom-level quality management practices in Ethiopian secondary schools? (What is the perception of teachers towards classroom-level quality management practices of principals' in secondary schools of the study area?)

4. What are the relationships between input, process, and output management in Ethiopian secondary education? (Is there any significant relationship between input, process, and output management in the studied secondary schools?)
    - **The questions presented as "*how do teachers perceive*…" is more likely suitable for qualitative study than yours which collect quantitative data concerning teachers' perception.**

    - The 251 sample teachers were asked about their perception regarding… in their respective schools. They are not asked about all the Ethiopian schools. So, no need to use the word Ethiopia at the end of each research question. The purpose of using the word **Ethiopia** in the title is obvious, and that is enough.

    - Concerning research question (4), we have two additional concerns. First, what is the purpose of such question in your study? What does it have with teachers' perception of the principals' quality management practices? Second, you employed Pearson correlation to analyze the data for such specific research question. Our concern is how the inputs and processes were measured? Were they measured in interval scale to make them continuous data mandatory to Pearson correlation? Or the Likert scale

data is used? If so, how Pearson correlation is appropriate? Please make clear these issues in the data analysis section of the paper.

Significance of the study, conceptual framework and operational definition of terms:

1. **General comment:** We think, the organization of the manuscript is highly influenced by the organization/components of either PhD dissertation or Master Thesis. That is why the following elements are wrongly incorporated in the manuscript.

2. **Significance of the study:** We think, this section is not relevant for your article here. Instead please show us the implication of your study/finding under the conclusion section.

3. **Conceptual framework:** the conceptual framework is wrongly placed. It should be **based on and part of** the review literature section.

4. **Operational definition of terms:** In this manuscript, Special woreda, woreda, and zone are defined as operational definition of terms. For me, the above terms are not key terms in your study. Thus, operational definition is not needed for them. If need be, they can be provided as footnote. It would be good rather if the paper provides operational definition for:

- Perception of teachers
- Practice of principals quality management
- Input
- Process (school-level) quality management practice
- Process (classroom-level) quality management practice
- Secondary school

Review literature: This section is composed of fragmented paragraphs and many headings. It has also some minor modification issues such as coherence, compilation of the required information and reduction of unrelated cases. Sub topics such as education quality, quality assurance, total quality management and choices of study variables in review literature section are not relevant. The subtopics' idea can be simply presented in paragraph form. Further, we do not believe that the appropriate information is included in the review literature section. For example, the issue of total quality management does not linked with the study topic. The same is true for quality assurance. We expect from the paper **as a review literature** about issues under the research questions or variables, or topics such as brief conceptualization of quality education, how quality education is measured/approached (*quality assurance and total quality management might be discussed here*), or components of quality education (input, process and output and the subcomponents under each of the three main components), role of principals in managing quality, empirical evidences about perception of teachers towards principals quality management practice etc. We do not also think that issues like "**the choice of study variables**" are part of the review literature section, they rather are part of research methods.

Methodology/ Methods and Materials: The method section is generally sound except the following some minor issues:

1. Ethical statement: better if this is presented at the end of the method section and only contains the idea in the second paragraph (what the researcher ethically considers), no need to reporting lack of ethical checkup procedures in AAU.

2. Research design: lacks well description. What does it mean multilevel mixed method design? How it best fits with this particular study? Another case, "***The study followed a quantitative approach using qualitative data from document analysis"*** Make it clear. First, does the study employ qualitative and quantitative approaches at the same time or sequentially? Which data is/are given more weight, quantitative or qualitative? Why? **As** to our observation, we do not look at qualitative data in this study. Although, you collected data from documents (national and regional assessment records), you come up with quantitative data in terms of students number, their scores, percentage and the like. So, what makes your study to follow qualitative approach?

3. **Sample:** firstly, it would be better if the subtopic is restated as **population, sample and sampling procedure/s** since your paper tells us about all of the above issues. Second, I read that there are 14 Zones and 5 Special woredas in SPNNR. The researcher grouped them into five clusters based on geographical proximities of those areas. The researcher also selected the one cluster (the western cluster which comprises three zones) using simple random sampling technique. I do not have seen problems with the above procedures. Our concern is with the claim, ***"****the finding of this study represents other clusters too".* How the representative issue is confirmed? By statistically/methodologically supported evidence or by the researchers judgment?

4. The Yemane's formula used to determine sample size is obtained from others sources (cited in… Why?) Is it not the Yemane (1967) work accessible for the researcher?

5. In some areas of the method section, for example, in instrumentation and data analysis sections, we observed "We expressions". We think, the paper is written by solo author. If so, why such expressions as "we do not involve them, instrumentation section line 15" and we tested the validity and reliability…data analysis section line3. Please consider editing such expressions, otherwise specify whom do you work with.

6. In the case of document analysis, the researcher reviewed "*the high school standards (MOE, 2009) to ascertain whether the secondary schools met the standard in terms of input availability, such as qualified teachers, competent students, well-equipped laboratories, and libraries, and whether the principals performed satisfactorily according to the standards****".*** We have **three** concerns here: [first], the standard cannot be reviewed for this study case rather it may be used as a reference material to cheek to what extent the information collected from teachers (about availability of input, process and output) comply with what is sated in the standard, or [second], the researcher my conduct observation using the some of the standard points as checklist to ensure to what extent schools fulfill the stated standards, and [third] does the principals' satisfactorily performance specified in the standard? If so, how the actual principals' quality management practice is rated according to the review of the standard? We do not observe such information other than teachers' perception.

7. The issue of validity and reliability is repetitively presented both in the instrument and data analysis section. Reduce the latter one.

8. For what purpose the issue of multi-collinearity is checked for? For factor analysis or Pearson correlation? Make it clear.

9. In the description of the study area section of this manuscript line 5 …eastern Ethiopia to the east…. Which part/region of eastern Ethiopia shares a boundary with SNNP? Somalia, Harar, Afar…? Make it clear, please.

Results/Data Analysis: Generally, the data analysis/finding section is well written except for some minor typographical and some other issues.

1. It is better if the response rate for the questionnaire is presented in the method section than in the results section.

2. It is better too if the information such as level of teachers qualification and workload presented under a specified subtopic may be **"characteristics of participants or something like that".** It is also better if further information about teachers' (gender, age, experience) is provided.

3. There are typographical errors in specifying factors. Example, factor 7 is wrongly typed as factor 6 in table 1, factor 8 is typed as factor 7, and factor 10 which is in table 1 is wrongly reported as it is in table 2.

4. Some additional concerns: we do have some smooth concerns regarding the inferences made by the author. For example, first, "The analysis shows that out of students promoted to grade nine, 48% scored below standard. *Consequently, about half of the students entered grade nine without having the necessary knowledge, skills, or attitudes*. Our worry is to what extent that one can be confident with that regional exams sufficiently measure the students' skills and attitudinal aspects. If that is that case, is it not difficult to boldly conclude that students who scored below the standard lacks at least the necessary skills and attitude unless other better measurement mechanism is used? Second, in the studied three zones, it is ensured that 30% of teachers are diploma holders, which is below the minimum level of qualification to secondary school as per the standard. My comment is on the inference that "***Hence, one can infer that those incompetent teachers were teaching secondary education, which affected the quality of education***". Though it is know that level of qualification has direct relationship with level of competency, it should be also noted that level of qualification does not always imply competency, as competency is the function of other many factors. In our experience both as a students and a teachers, experienced and interested diploma teachers are better performers in high schools than inexperienced and less interested degree graduates. Even we accept that the inference is true, it is logical to reach such a bit bold generalization about the status quality education by using single case i.e. 30% diploma holders. Why not the quality education was better in those zones because of majority (70%) properly qualified teachers if the issue is associated with teacher qualification. So, reconsider the inference.

5. Items in factor 8 table 1, lacks clarity to me. I think the researcher is interested to measure whether grade 8^{th} students join grade 9^{th} with appropriate level of knowledge, English communication skill and students motivation. But, (1) the items were not phrased in such specific way. Teachers were asked as (*Grade 9 students have the knowledge that deserves the grade,* Grade *9 students have good command of the English language, and Grade 9 students have the motivation to learn).* Thus, do teachers reflect their perception for such items considering the current grade nine students or the former grade eight students? It can be better clarified as: Grade 8^{th} students join grade 9^{th} with the knowledge level that deserves it; Grade 8^{th} students have good command of English language while they join grade nine

etc**.**

6. In table 4, factor three, do principals considered protecting instructional time when they follow-up teachers in giving and checking home and class works only? Do teachers mainly get in to class to give and check home and class works only? We think, it is better include other aspects of instructional time protection by school principals.

7. Regarding the data in table 5, considering the national exam result in 2017 and 2018, the paper made some claim as ***"Hence, it is difficult to infer that school 'A' performed better than school 'B,' 'C,' or vice versa***". Does this mean the national assessment score may not indicate the status of quality education properly?

Discussion/interpretation: This section is done great. However, as usual, let me indicate some minor issues:

1. In the discussion section, the study elaborated that input, process and output are causally linked. How did you know they have a causal relationship? You run the Pearson correlation and it simply tells us the relationship of two continuous variables.

2. In the discussion section, page 12, the assertion stated as "***It is challenging to expect motivated and committed students from unmotivated, incompetent, and uncommitted teachers."*** This seems bold generalization and unsupported evidence, i.e. teachers' commitment, motivation and level of competency were not investigated in this study. Hence, the above generalization is not as such relevant. To be honest, only one item is presented to teachers to measure whether they join teaching profession based on their interest or not.

3. In page 13, it is stated that "*Though principals encourage teachers to offer tutorial and makeup classes and continuous assessments, it is impractical due to large class sizes, a shortage of classrooms, and demotivated teachers and students*". Does the study investigated about challenges?

4. **Conclusions and recommendations:** The conclusion section lack the proper indication of the implication of the study. Some of the recommendations are not also targeted to the respective body. For example, the recommendation for MoE as: "*The Ministry of Education should revisit its practices of compromising promotion policies, underfunding secondary education, and recruiting unmotivated and under-qualified teachers".* Funding and teacher recruitment for secondary schools are not the responsibilities of ministry of education, they are the duties of regional education Bureaus. The recommendation for further study is not also based on your study. It is better if you recommend further study on your study gaps. Thus, please revisit your recommendation.

5. **Limitation of the study:** although the author indicated the limitations of this study, we feel it lacks clarity and it is not exhaustive too. For example, from inputs perspective the researcher only examines teachers' perception about laboratory, library, qualified teachers and students. Other inputs such as availability of different facilities and equipment (ICT, plasma, student text book ratio, student teacher ratio, class size, pedagogic center, toilet, water supply all were not addressed). Coming to process, some important process dimensions such as teachers' performance appraisal and feedback system, teaching and learning process, instructional leadership and supervision practices, involvement of

students in co-curricular activities and provision of guidance and counseling services were not examined too. Thus, we suggest if the limitation section is well indicated.

6. **References:** We do not exactly know which referencing style the researchers follow. It should be thus revisited to be adhered with a specific referencing style.

7. **Compliance with Ethical Standards:** We appreciate the ethical consideration of the author in this study.

8. **Writing/language issues:** the paper is well written except minor **typological** errors indicated in the commented sections and in the pdf.

9. **Overall comment to the author:** Dear author, we would like to thank you again for your valuable research work. As you see from our comments, we raised so many details. This does not mean that your work has many limitations. We do rather due to three basic reasons: first, since we like the paper very much, we want it to be improved more and get its own status; second, the review guideline by Emerald publishing encourages reviewers to come up with a thorough and specific comments helpful for the improvement of the article; third, Since, Emerald publishing does not have a copy editing service, much of the responsibility to edit the paper will rest on the author. We indicate every details is thus to help the author's effort at least in part. Finally, we would like to say one remark: try to look at our comments and suggestion carefully and only consider that which wins your heart and convinces your mind! For more detail, you can also find our comments in your paper that will be attached with this report.

Thank you once again and wish you all the best!!

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Partly

Are the conclusions drawn adequately supported by the results?
No

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: 1. Educational Leadership 2. Quality education 3. Professional ethics 4. Adult education 5. Teacher Collaboration

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Reviewer Report 20 June 2023

https://doi.org/10.21956/emeraldopenres.16209.r28973

© 2023 Latief S. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Suryawahyuni Latief
Universitas Nurdin Hamzah, Jambi, 36124, Indonesia

The author has succeeded in explaining the results of his research in a clearly organized and in accordance with the advice that has been given. As a reader, I enjoy reading from beginning to end. This article is already worthy of passing peer review.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Educational management, leadership, school principals, teacher competences, educational policy, teaching learning process, school management, School quality, educational quality

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 05 June 2023

https://doi.org/10.21956/emeraldopenres.15819.r28911

© 2023 Latief S. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

?

Suryawahyuni Latief
Universitas Nurdin Hamzah, Jambi, 36124, Indonesia

Introduction:
The introduction needs to add a paragraph to attract the reader's attention by describing the situation of quality management practice globally in school, it should explain how the quality management in other countries as well before going to specify in the author's countries. As a reader, I need to know the story of how the quality management addressed all over the world

(development and other developing countries). Over all, the introduction provides a clear context and rationale for the study and highlighting the significance of investigating quality management practice in secondary school in Ethiopia.

Literature review:
The author has described a few theories in education quality, and management quality assurance. Over all, the literature review is well-organized and supported the research. However, it would be helpful if the author add the school management theory.

Methodology:

1. Regarding the ethical statement, it would be beneficial if the author provides more information on how the potential risks to participants were mitigated and how confidentiality was ensured.

2. In describing the study area, the author should give more details about the geographical location, socio-economy characteristics, and culture, and political to provide the clear picture of research setting.

3. For sampling, you should provide your strategy to choose teacher and school within the cluster to enhance you transparency study.

4. For document analysis, you should provide why you chose two documents to see the quality management (NEAEA (assessment result), and MOE (high school standard).

5. For data analysis process, author provides clear techniques. As a reader, it would be helpful if author can provide more information on the criteria used in the data analysis.

Results and Discussion:
It has been written clearly, however, preferably after the table there is an explanation given so that the reader can understand it.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Educational management, leadership, school principals, teacher competences, educational policy, teaching learning process, school management, School quality, educational quality

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.