Original Research

Classroom-level strategies that enhance students' academic achievement: The case of selected Ethiopian public secondary schools

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Abstract	Article Information
The main objective of this study was to assess classroom strategies used to enhance students' academic achievement in selected Ethiopian public secondary schools. To this end, 30 public secondary schools (top 10, middle 10, and lower 10 achievers) were purposefully selected based on the average results of three consecutive years of matriculation results. The data were collected through a questionnaire consisting of five Lickert scales from a randomly selected 300 teachers. The collected data were analyzed quantitatively using the Statistical Package for Social Sciences (SPSS) version 29. Descriptive analysis showed that strategies such as the usage of appropriate teaching materials, effective student grouping procedures, and positive teacher behavior in the classroom were considered the major strategies used to enhance the academic achievement of students. Similarly, teacher respondents indicated that teachers' proper usage of time and giving learning opportunities for students enhances students' achievement. Therefore, the researcher recommends that Ethiopian policymakers and curriculum designers should provide repeated training for secondary school teachers so that teachers not only use appropriate teaching materials and proper student grouping procedures and use their time properly, but also exhibit positive behavior in the classroom and give an opportunity for students in the teaching-learning process.	 ***Corresponding Author:** Negesse Gemechu Chibsa E-mail: chibsa1967@gmail.com

INTRODUCTION

Since classroom-level strategies are implemented at the grassroots level, they are extremely important for raising students' academic attainment (Kyriakides & Panayiotou, 2023). Researchers viewed classroom-level strategies that enhance students' academic achievement differently, and they found themselves disagreeing on what constitutes higher student academic accomplishment. For example, after analyzing over 50 research studies, Bernhard et al. (2024) explained that effective classroom-level strategies that enhance students' achievement are

- characterized by having such variables as criteria-centered curricula, effective leadership, continuous assessment of students' progress, and teachers' professional development. Similarly, Vieluf and Klieme (2023) conducted a correlational study on the relationship between class size and students' academic achievement and reported that the relationship that exists between the two variables was found to be low. Vieluf and Klieme (2023) also found that continuous teacher feedback of students' activity, proper data usage, large-scale tutoring, proper usage of time, and high expectations of

students' performance were found to be a determinant strategy for enhancing students' academic achievement. Betakan et al. (2024) explained that strategies such as creating a supportive learning environment, equally treating all students regardless of their background, and providing equal educational opportunities for all students play a significant role in enhancing students' academic achievement.

On the other hand, Hiebert and Stigler (2023) presented high standards and expectations for all students, effective school leadership, high levels of collaboration and communication, curriculum, instruction, assessment aligned with standards, frequent monitoring of teaching and learning, focused professional development, a supportive learning environment, and a high level of family and community involvement as the strategies that enhance students' academic achievement.

As a result, classroom-level strategies that foster students' academic achievement are interpreted differently by different scholars and are still up for debate. In this study, the classroom-level strategies used in raising students' academic achievement are equated with the strategy of provision of learning materials, student grouping procedure, teacher behavior, time usage, and opportunity to learn as determined by students's performance on the national examination in core subjects (English and mathematics) over three years.

To improve pupils' academic performance, Ethiopian secondary schools have allocated significant budgets and undertaken various initiatives (Liu, 2019). To improve the participation of many stakeholders in education, for example, school-based management was developed, and the educational system was decentralized (Alam & Mohanty, 2023). In order to improve the quality of general education through the implementation of the General Education Quality Improvement Program (GEQIP), the nation established the Education Sector Development Programs (ESDP-II and ESDP III) and involved many stakeholders in the monitoring of school resources. For example, primary schools have formed parent-teacher organizations (PTAs) and required them to participate in the creation of the school's yearly plan (Abie et al., 2023). Like this, Ambo University, one of Ethiopia's universities, took the initiative to train the secondary school teachers in Ambo Town to improve their effectiveness by giving them new ideas, experiences, and teaching methodologies, as well as classroom evaluation techniques and action research (Abie et al., 2023). The strategy was to raise students' academic achievement in the Ethiopian context. Despite this, the initiative fell short of its goals in terms of helping these teachers do action research, employ active learning techniques, and use continuous assessment to raise students' performance on national exams (Abie et al., 2023). As a result, this study was designed to assess classroom-level strategies that enhance students' academic achievement in Ethiopian public secondary schools.

Statement of the problem

The classroom-related strategies exert a dominant effect on student achievement; most classroom-related variables (the place where the actual teaching-learning process is taking place) received little attention from most Ethiopian educational experts. The different stakeholders, starting from the ministry to the school level, devote much of their time to preparing and explaining educational policies, roles expected of regional and zone educational officials, and school rules and regulations, and little attention was given to the classroom levels, and even none of them supervised the actual classroom situations. In general, they failed to supervise teachers to identify whether they are using the right teaching methodology and an appropriate evaluation strategy and evaluating the quality of curriculum materials. The study focused only on the assessment of classroom-level strategies that enhance students' academic achievement in selected Ethiopian public secondary schools, and it is beyond the scope of this study to examine input factors such as learners' motivation, family involvement, teachers' background, and school management roles in enhancing students'

academic achievement. More specifically, the study focused on classroom strategies pertinent to the provision of learning materials, student grouping procedure, teacher behavior, time usage, and opportunity to learn as decided by students' performance on the national examination in core subjects (English and Mathematics) for three years. The outcome obtained from this research aimed to help policymakers and curriculum designers consider the strategies that are important for enhancing students' academic achievement in selected Ethiopian public secondary schools.

Research question

All the above rationales led the researcher to research classroom-level strategies that enhance students' academic achievement and raise the following leading question.

What strategies can be used to enhance students' academic achievement in selected Ethiopian public secondary schools?

MATERIALS AND METHODS
Research design and participants

This study followed a descriptive survey design. To select participants, firstly, the average results of three consecutive years of secondary school students' achievement on national examinations in core subjects (English and mathematics) were calculated, and then secondary schools were ranked based on their average achievements from largest to smallest. Once the schools were ranked in this manner, they were then termed and selected as the first top ten, or highly effective; the middle ten, or medium effective; and the last ten, or less effective, by using a purposive sampling technique. This was intentionally done to select equal proportions of secondary schools from all levels, which enables the researcher to obtain the necessary information from all levels.

Once the schools were arranged in this manner, and as the study deals with academic enhancing factors, ten each of the top, middle, and lower-achieving secondary schools were the focus of the study. Accordingly, those Ethiopian regional states

hosting the above-mentioned leveled secondary schools (top, medium, and lower achieving) were selected as the participants of the study, including 6 regional states and one chartered city. Thus, all teachers (431 English and mathematics teachers) who were teaching in the regional states of Oromia, Amhara, Sidama, Southern Nations, Nationalities, and Peoples, Gambela, Somali, and Addis Ababa City Administration were selected as participants. They were selected in order to show the characteristics of teachers who were teaching at upper-, middle-, and lower-achieving secondary schools.

Sample size determination and sampling procedure

Both non-probability and probability sampling methods were used to choose a sample from public secondary schools. In non-probability sampling or in using the purposive sampling technique, first, the average results of three consecutive years of secondary school students's achievement on the national examination in core subjects (English and mathematics) were calculated, and then secondary schools were ranked based on their average achievements from highest to lowest. Following this ranking, the schools were designated and chosen using a purposive sample technique as the top ten or upper-achieving, middle ten or medium-achieving, and bottom ten or lower-performing public secondary schools. This was done purposefully to ensure that the appropriate percentages of secondary schools from each level were chosen to collect the required data from each level. 30 secondary schools were thus purposefully chosen, 10 from each of the higher, medium, and lower achieving institutions. As was previously mentioned, there were 431 instructors employed by these 30 secondary schools. From these 431 teachers, the researcher used Yamane's (Yamane, 1967) formula for determining sample size:

$$n = N/(1 + N(e^2))$$

Where N is the population size and e is the level of precision. Hence, taking $N = 431$ and assuming a

95% confidence level at *p = 0.05,* the sample size was calculated and found to be 208.

Though the calculated sample size was 208, the researcher selected a total of 300 secondary school teachers in order to improve the validity of the study. After the sample size was established, a stratified sampling procedure was applied to choose all the participating teachers from each of the three levels (high, medium, and less effective).

Equal percentages of samples were chosen at each level using the stratified sampling procedure. Thus, 300 secondary school teachers (144 English and 156 mathematics teachers) were chosen; these included 104 teachers from upper-achieving schools (52 English and 52 mathematics teachers), 100 teachers from middle-effective schools (45 English and 55 mathematics teachers), and 96 teachers from less effective schools (47 English and 49 mathematics teachers) (Table 1).

Table 1

Distribution of secondary school English and mathematics teachers selected for the study.

Levels	No. of English teachers	No. of Maths teachers	Total population	Sample of English teachers	A sample of maths teachers	total sample selected
Upper-achieving schools	75	75	150	52	52	104
Medium-achieving schools	65	80	145	45	55	100
Lower-achieving schools	66	70	136	47	49	96
Total	206	225	431	144	156	300

*Upper achievers, medium achievers, and lower achievers secondary schools are schools that are selected from the top ten, medium ten, and lower ten Ethiopian secondary schools based on the average result of three consecutive years of matriculation results in the core subjects (English and Mathematics).

Lastly, once the total numbers of teachers were determined, simple random sampling was used to select teachers from all three groups. Simple random sampling was used to give equal chances to all of the teachers from all levels. Accordingly, among 300 participants, 90 were selected from the Oromia region, 80 from the Addis Ababa administrative city, 60 from the Amhara regional state, 25 from the Sidama regional state, 28 from the Southern Nations, Nationalities, and Peoples Region, 8 from the Glabella regional state, and 9 participants from the Somali regional state (Figure 1).
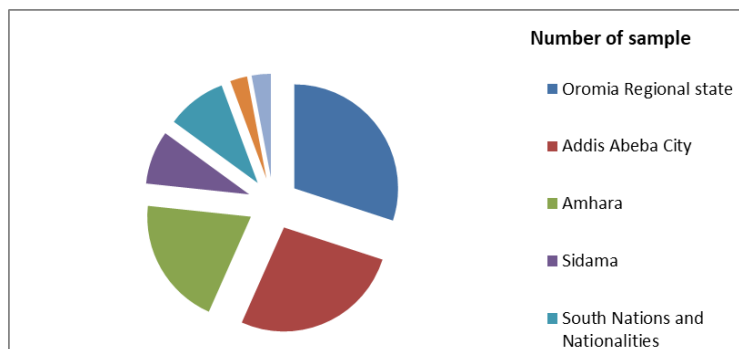

Figure 1. *Distribution of study Participants among different regional states and city administrations in Ethiopia*

Data Collection Instrument

A closed-ended questionnaire was prepared from a review of the literature, and a pilot test was conducted to test its reliability. The calculated reliability index was calculated and found to be 85. Similarly, the reliability of the questionnaire was checked by triangulating the data obtained from different sources, and different contents were improved based on the responses obtained from the participants. More precisely, a closed-ended survey with a five-level rating scale system was created based on an analysis of relevant literature and given to 300 secondary school teachers to know about their perspectives.

Method of data analysis

The gathered data were revised, coded, and subjected to both inferential and descriptive data analysis techniques. The Statistical Package for Social Sciences (SPSS) version 29 was used to quantitatively (mean and standard deviation) analyze the collected responses from all of the sample respondents (response rate was 100%). The purpose of this process was to assess strategies used in improving students' academic achievement in the classroom. Once the questionnaire was collected from the respondents, the mean score and standard deviation were calculated for all indicators of academic-enhancing variables in all cases and compared to the mean score (M=3.0).

In inferential statistics, a t-test was used to find the statistical significance level of the data. So, one-sample t-test results were used in order to indicate the difference between the normal distribution and the sample mean scores for all of the indicator items, which were statistically significant at $p < 0.05$ (t = 0.000 at 2-tailed).

RESULTS AND DISCUSSIONS
Results

To provide an answer to the research question "What strategies can be used to enhance school effectiveness in selected Ethiopian public secondary schools," five different key variables that are directly associated with the strategies used to enhance school effectiveness were assessed. These five key variables included learning material, grouping procedure, teacher behavior, usage of time at the school level, and opportunity to learn at the school level. Teacher respondents were asked to rate the prepared items on a scale of 1-5, where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree. All items were set to elicit the different strategies used in enhancing school effectiveness. The mean score of each of the samples for all of the indicators was compared with the mean score (M=3.0). The total scores for each category were calculated by summing responses for all items. A one-sample t-test, comparing each total categorical mean score to the mean score (M=3) from a hypothetical categorical normal distribution, was conducted for each of the categories. As a result, each component comprising *learning material, grouping procedure, teacher behavior, usage of time at the school level,* and *opportunity to learn at the school level* was assessed and presented as follows.

Learning materials used for the clarification of different concepts

As learning requires the use of prepared learning materials, elements of learning materials were incorporated into two main components that were presented to the respondents. Table 2 indicates that the existence of learning material as the main strategy to enhance school effectiveness received a positive response (*M=3.78, SD=0.99*). A strategy used to enhance school effectiveness relates to learning material that ensures the employment of different activities. Based on this notion, teacher respondents reported their efforts to identify learning activities in the learning material to enhance school effectiveness (M = 3.73*, SD = 1.04*). The results found that maximum efforts were made in checking learning activities within the curriculum material by the upper-achieving public secondary school (M=3.94, SD=0.82), while the

minimum efforts were made by the medium-achieving public secondary schools (M=3.62, SD=1.13). Therefore, checking learning activities within curriculum material was one of the strategies used to enhance school effectiveness. Lists of learning activities alone cannot bring about the intended change in learners' behavior unless

instructional objectives are clearly stated within the learning materials. The results revealed that exerting efforts in finding the existence of clearly stated objectives for each learning activity *(M=3.82, SD=0.94)* was an important strategy in enhancing school effectiveness.

Table 2

Learning materials as a strategy to enhance students' academic achievement

S/N	Items	Lower-Achieving		Medium Achieving		Upper Achieving		Average		Sig. (2-tailed)
		M	SD	M	SD	M	SD	M	SD	
1	Different activities exist in the learning material	3.63	1.18	3.62	1.13	3.94	0.82	3.73	1.04	0.00
2	There are clearly stated instructional objectives for each learning activity	3.84	0.89	3.58	1.12	4.05	0.8	3.82	0.94	0.00
	Total average	3.74	1.04	3.6	1.13	4.00	0.81	3.78	0.99	.000

Legend: M = 3.0, *p = < 0.05, N = 300, 1 = strongly disagree, 2 = disagree, 3 = undecided 4 = agree, and 5 = strongly agree*

The efforts in this regard are higher among the upper-achieving public secondary schools *(M=4.05, SD=0.80)* and lower among the medium-achieving public secondary schools *(M=3.58, SD=1.12)*. The analysis may show that greater efforts were made by teachers in identifying appropriate learning activities as well as clearly stated objectives for each learning activity, which enabled their learners to score better academic results in the matriculation examination. In addition, when the two indicators of learning materials were compared to the mean score (*M*= .0) from a hypothetical normal distribution, the one-sample t-test results indicated the differences between the normal distribution and sample mean scores for all of the indicator items were statistically significant at *p* < .05 at t = 0.000 (2-tailed).

Grouping procedure as a strategy to enhance students' academic achievement

The procedures used by teachers in grouping learners and teaching materials play an important

role in enhancing learners' academic achievement. The result obtained from the analyzed data showed that grouping learners was a suitable strategy to enhance school effectiveness *(M=3.66, SD=1.02)*. As one of the components of grouping, differentiation of learning material is important. The results showed a positive response towards the availability of differentiated learning materials (M=3.39, SD=1.06). The availability of differentiated learning materials is higher in the upper-achieving public secondary schools (M=3.83, SD=1) and lower in the medium-achieving public secondary schools (M=3.13, SD=1.08). Hence, from this analysis, it seems that the availability of differentiated materials at the upper-achieving public secondary schools was used as a strategy to enhance school effectiveness.

The results on whether the administration of tests, provision of feedback, and the degree to which teachers were taking corrective measures were shown in Table 3. Respondents agreed with the statements that the provision of tests, feedback,

and corrective measures for the learners enhances school effectiveness (M=3.92, SD=0.98).

Table 3

Grouping procedures as a strategy to enhance students' academic achievement

S/N	Items	Lower-Achieving		Medium Achieving		Upper Achieving		Average		Sig. (2-tailed)
		M	SD	M	SD	M	SD	M	SD	
1	Differentiated learning materials are available.	3.21	1.09	3.13	1.08	3.83	1	3.39	1.06	0.00
2	Provide tests, feedback, and corrective measures for the learners	3.79	0.9	3.84	1.14	4.15	0.89	3.92	0.98	0.00
	Average	3.5	1	3.49	1.11	3.99	0.95	3.66	1.02	

Legend: *M* = 3.0, *p = < 0.05, *N* = 300, 1 = strongly disagree, 2 = disagree, 3 = undecided 4 = agree, and 5 = strongly agree*

The higher mean value related to this variable was reported on the sides of upper-achieving public secondary schools *(M=3.99, SD=0.95),* and the lower by the medium-achieving public secondary schools *(M=3.49, SD=1.11)*. From this analysis, it can be deduced that when quality teaching materials are provided for the learners, when learners are provided with feedback, and when corrective measures are used, learners' performance is enhanced, which could positively affect matriculation results. In addition, when the two indicators of learning materials were compared to the mean score *(M*=3.0) from a hypothetical normal distribution, the one-sample t-test results indicated the differences between the normal distribution and sample mean scores for all of the indicator items were statistically significant at *p <* .05 at t=0.000 (2-tailed).

Teacher behavior as a strategy to enhance students' academic achievement

The major strategy used to enhance students' academic achievement is directly associated with the teacher's behavior. For example, respondents were asked their opinion on the statement "*I can manage my classroom well.*" *(M=4.18, SD=0.92),* "*I can keep an orderly classroom atmosphere*" *(M=4.02, SD=0.92),* and "*I maximize teaching time (M=3.84, SD=2.65)*. In all three variables, the upper-achieving schools indicated a higher degree of agreement*. From this result, it seems that upper-achieving public secondary school teachers have tried to keep an orderly atmosphere in the classroom, manage their classrooms, and maximize their teaching time, enabling them to make their school effective.

The other important issue in the teaching and learning process is the tendency of teachers to strive to teach learners based on their needs and interests. The result showed that teachers adapted their teaching to meet learners' needs *(M=3.81, SD=0.95).* The maximum mean value in adapting best practices to meet learners' needs was evident among the upper-achieving public secondary schools *(M=3.98, SD=0.77),* and the minimum mean value towards the same variable was exhibited by the lower-achieving public secondary schools *(M=3.53, SD=1.23)*. This suggests that adopting the best teaching strategies to meet learners' needs could be considered a strategy used to enhance school effectiveness.

Creating a shared vision with the learners and communicating this shared vision with them plays a pivotal role in enhancing school effectiveness. In addition, reinforcement is crucial in the teaching-learning process. This is because if there is positive reinforcement, the likelihood of the repetition of the reinforced behavior is higher. As indicated in Table

4, respondents agreed that implementation of a shared vision among learners and emphasizing positive reinforcement as a mechanism to enhance school effectiveness *(M=3.82, SD=0.95)* and *(M=4.01, SD=0.90)*. In both cases, the greater mean value was shown by the upper-achieving public secondary schools *(M=4.00, SD=0.73)* and *(M=4.14, SD=0.79)*, respectively, and the lower mean values were reported by the medium-achieving public secondary schools *(M=3.65,*

SD=1.20) and *(M=3.92, SD=1.07), SSD=1.07), SSD=1.07), SSD=1.07),*respectively. The above analysis shows that teachers at upper-achieving public secondary schools adapted their teaching practices based on student needs and interests, created a shared vision among learners, and placed emphasis on positive reinforcement, which could be considered strategies to enhance school effectiveness.

Table 4

Teacher behavior as a strategy to enhance students' academic achievement

S/N	Items	Lower-Achieving		Medium Achieving		Upper Achieving		Average		Sig. (2-tailed)
		M	SD	M	SD	M	SD	M	SD	
1	I can manage my classroom well	4.04	1.15	4.23	0.81	4.26	0.81	4.18	0.92	0.00
2	I can keep an orderly classroom atmosphere	4.02	0.91	3.82	0.94	4.22	0.92	4.02	0.92	0.00
3	I maximize teaching time	3.89	0.64	3.15	1.44	4.46	0.86	3.84	2.65	0.00
4	I exhibit the best teaching practices	3.9	0.78	3.66	1.15	3.82	0.85	3.8	0.93	0.00
5	I adapt best teaching practices to meet learners' needs	3.93	0.86	3.53	1.23	3.98	0.77	3.81	0.95	0.00
6	I create a shared vision among learners	3.81	0.91	3.65	1.2	4	0.73	3.82	0.95	0.00
7	I emphasize positive reinforcement	3.97	0.83	3.92	1.07	4.14	0.79	4.01	0.9	0.00
8	I emphasize the cognitive domain	3.86	0.93	3.7	1.1	3.98	0.83	3.84	0.95	0.00
9	I make use of learners' prior knowledge	4.02	0.88	3.77	0.94	4.05	0.76	3.95	0.86	0.00
10	I use continuous assessment	4.02	0.85	3.91	0.91	4.02	0.73	3.98	0.83	0.00
11	I use lower-order and higher-order questions	3.97	0.89	4.13	0.95	4.05	0.65	4.05	0.83	0.00
12	I take corrective measures where necessary	4.04	0.85	4.19	0.95	4.08	0.79	4.1	0.86	0.00
13	I have classroom rules in place	3.77	0.94	3.99	0.94	4.08	0.69	3.95	0.86	0.00
	Total average	3.95	0.88	3.82	1.05	4.09	0.78	3.95	1.03	

Legend: $M = 3.0$, *p = < 0.05, $N = 300$, 1 = strongly disagree, 2 = disagree, 3 = undecided 4 = agree, and 5 = strongly agree*

As instructional objectives involve the cognitive, affective, and psychomotor domains, the analysis identified the kinds of domains teachers more frequently emphasize. The result obtained from the analysis showed that teacher participants agreed with the variable *"I emphasize the cognitive domain" (M=3.84, M=0.95).* The maximum mean value was exhibited by the upper-achieving public secondary schools *(M=3.98, M=0.93),* and the lower mean value was reflected by the medium-achieving public secondary schools *(M=3.86, M=0.83).* In the Ethiopian context, the matriculation examination prepared for 12th-grade learners assesses whether learners have achieved the cognitive domain and gives less emphasis to the affective and psychomotor domains.

The respondents agreed that "I *make use of learners' prior knowledge" (M=3.98, M=0.93), "I use continuous assessment" (M=3.98, M=0.93),* and *"I use lower-order and higher-order questions" (M=3.98, M=0.93).* The maximum mean values towards the implementation of the three variables were shown by the upper-achieving public secondary schools, indicating that the teachers in these schools conduct a continuous assessment, using higher- and lower-order questions and making use of learners' prior knowledge. These practices enabled them to enhance learner achievement in matriculation examinations.

Lastly, in this dimension, teacher respondents agreed that "I take corrective measures where necessary*" (M=4.10, M=0.86)* and "*I have classroom rules in place" (M=3.95, M=1.03).* In both cases, the upper-achieving public secondary schools reflected the higher mean values when compared to the other levels, which might have enabled them to achieve better matriculation results.

In addition, when the thirteen indicators of learning materials are compared to the mean score (M=3.0) from a hypothetical normal distribution, the one-sample t-test results indicated the differences between the normal distribution and sample mean scores for all of the indicator items were statistically significant at $p < .05$ at t=0.000 (2-tailed).

Time usage is a strategy to enhance students' academic achievement.

Time usage in the teaching-learning process plays an essential role in enhancing the teaching-learning process, as agreed by respondents (M=3.51, SD=1.06). This result (Table 5) indicates that selected Ethiopian public secondary schools were found to use their time effectively as a strategy to enhance school effectiveness.

Table 5

Time usage is a strategy to enhance students' academic achievement

S/N	Items	Lower-Achieving		Medium Achieving		Upper Achieving		Average		Sig. (2-tailed)
		M	SD	M	SD	M	SD	M	SD	
1	There are developments and provision of a schedule for different subjects	3.67	0.95	3.57	1.22	3.78	0.81	3.67	0.99	.000

		M	SD	M	SD	M	SD	M	SD	
2	There is a school policy on homework, pupil absenteeism, cancellation of lessons, and the maintenance of order in the school.	3.38	1.29	3.07	1.27	3.59	0.84	3.35	1.13	.000
	Total average	3.53	1.12	3.32	1.25	3.69	0.83	3.51	1.06	.000

When explained, Ethiopian secondary schools appear to have developed and provided a schedule for different subjects *(M=3.67, SD=0.99)*. The maximum mean value in this regard was reflected by the upper-achieving public secondary schools *(M=3.78, SD=0.81),* and the lower mean achievement was reflected by the medium-achieving public secondary schools *(M=3.57, SD=1.22*). School policy was investigated, and a positive response was shown by teacher respondents to the variable that "*there is school policy on homework, pupil absenteeism, cancellation of lessons, and the maintaining of order in the school" (M=3.35, SD=1.13*). Related to this variable, the maximum mean value was reflected by the upper-achieving public secondary schools *(M=3.59, SD=0.84*) when compared to the medium-achieving public secondary schools *(M=3.07, SD=1.27*)

From this analysis, it seems that the maximum mean values by the upper-achieving public secondary schools towards the provision of a schedule for different subjects by schools and the existence of a school policy on homework, pupil absenteeism, cancellation of lessons, and the maintaining of order in the school might have favored them in enhancing learner achievement and scoring better matriculation results.

In addition, when the two indicators of time usage were compared to the mean score (*M=3.0*) from a hypothetical normal distribution, the one-sample t-test results indicated the differences between the normal distribution and sample mean score for all of the indicator items were statistically significant at *p < .05*, at (t=0.000 at 2-tailed).

Opportunity to learn

Opportunity to learn is considered a strategy to enhance the school. The results (Table 6) showed that Ethiopian public secondary schools use the opportunity to learn as a strategy to enhance school effectiveness *(M=3.53, SD=0.11).*

Table 6

Opportunity to learn as a strategy to enhance students' academic achievement

S/N	Items	Lower-Achieving		Medium Achieving		Upper Achieving		Average		Sig. (2-tailed)
		M	SD	M	SD	M	SD	M	SD	
1	Prepared curriculum material is available	3.31	1.15	3.22	1.21	3.78	0.861	3.43	1.08	.000
2	Prepared activity plans are available	3.42	1.002	3.67	0.965	3.69	0.874	3.59	0.95	.000
3	Rules about how to follow the curriculum are available	3.44	1.05	3.45	1.167	3.79	0.739	3.56	0.99	.000
	Total average	3.43	1.03	3.56	1.07	3.74	0.81	3.58	0.97	.000

Legend: M = 3.0, **p* = < 0.05, *N* = 300, 1 = strongly disagree, 2 = disagree, 3 = undecided 4 = agree, and 5 = strongly agree*

Respondents agreed that *"prepared curriculum material is available" (M=3.53, SD=0.11), "prepared activity plans are available" (M=3.53, SD=0.11), and "rules about how to follow the curriculum are available" (M=3.53, SD=0.11).* In all cases, the upper-achieving public secondary schools received higher mean values, indicating that the availability of curriculum materials, rules to follow the curriculum, and activity plans enabled their learners to achieve better matriculation results. In addition, when the three indicators of opportunity to learn were compared to the mean score (*M*=3.0) from a hypothetical normal distribution, the one-sample t-test results indicated the differences between the normal distribution and sample mean scores for all of the indicator items were statistically significant at *p* < .05 at t=0.000 (2-tailed).

Discussions

Provision of learning materials as a strategy to enhance students' academic achievement

Teachers identified learning activities for each content topic with clearly stated objectives, as this was the best strategy to enhance school effectiveness. Furthermore, the procedures used by school directors, supervisors, and teachers in identifying differentiated learning materials and in grouping learners through the provision of proper tests, feedback, and corrective measures play an important role in enhancing learners' academic achievement. Linked to the above, quality teaching materials and the use of corrective measures and feedback could positively affect learners' matriculation results. This finding is congruent with the views of Murray et al. (2021) that mastery of any content cannot happen without the use and proper identification of teaching materials. Lynam et al. (2022) proposed that the availability of teaching materials plays a paramount role in meeting the interests of individual differences, and it is essential to identify the availability of teaching

materials that appeal to different learning styles and that suit different individual interests.

Teacher behavior as a strategy to enhance students' academic achievement

The major strategy used to enhance school effectiveness is directly associated with teacher behavior. Most teachers referred to the importance of managing their classrooms, keeping an orderly classroom, creating a positive atmosphere, and maximizing teaching time, all of which enhance school effectiveness.

In general, results confirmed that teachers' use of the following strategies was considered the best strategy to enhance learner performance and thus ensure school effectiveness: positive reinforcement, adapting best practices to meet learners' needs, creating a shared vision, communicating the shared vision with learners, identifying learners' prior knowledge, using continuous assessment, and using lower-order and higher-order questions.

The maximum mean value towards the implementation of the above variables was shown by the upper-achieving public secondary schools, indicating that these practices enabled teachers to achieve better matriculation results. Results also showed that teachers' activities related to the cognitive domain were found to be effective in enhancing school effectiveness, especially in upper-achieving public secondary schools. As such, in the Ethiopian context, the matriculation examinations prepared for 12th-grade learners included questions that relate to the cognitive domain and gave less emphasis to the affective and psychomotor domains. This finding is congruent with the views of Khritish (2024) in that they viewed teachers' practices, for instance, in motivating students for learning and properly managing the classroom, as playing an important role in improving learner achievement. Teachers' practices in conducting continuous assessment and

using positive reinforcement in the teaching-learning process are a determinant for the teaching-learning processes (Opdenakker, 2023). In general, the overall academic achievement of students is decided by the teacher's effectiveness in using proper teaching methodology, assessment techniques, and teaching methodology (Burroughs et al., 2019)

Teachers' proper usage of time at the school level is a strategy to enhance students' academic achievement

Most teachers use their time effectively in selected Ethiopian public secondary schools, and this is considered the best strategy to enhance school effectiveness. With regard to time usage, teacher respondents reported that the existence of school policy in relation to homework, pupil absenteeism, cancellation of lessons, and keeping order in the schools was the best strategy for enhancing school effectiveness and was exhibited more in upper-achieving schools, which enabled them to achieve better matriculation results. The level of teachers' time usage in teaching and students' academic performance is confirmed by the study of Allen et al. (2021). The main factor that affects student academic achievement is the strength of teachers in managing and using their time effectively (Suleiman et al., 2024)

Opportunity to learn as a strategy to enhance students' academic achievement

The study revealed that Ethiopian secondary schools use the opportunity to learn as a strategy to enhance school effectiveness. It is evident from the results that the availability of curriculum materials, activity plans, and rules on how to follow the curriculum enhances school effectiveness. In all cases, upper-achieving public secondary schools received higher mean values, indicating that the availability of curriculum materials, rules to follow the curriculum, and activity plans enabled them to achieve better matriculation results. This finding is congruent with Kyriakides & Creamers (2009)

in that since the opportunity to learn at school is the total amount of time the students are allowed in learning a given learning experience, including classwork and homework, it is a basic strategy to enhance learners' academic Kyriakides and Creamers (2009).

CONCLUSIONS

This article concludes that Ethiopian curriculum designers and policymakers should provide training for secondary school teachers so that teachers can identify differentiated learning materials and group learners through the provision of proper tests, quality teaching materials, feedback, and corrective measures as the best strategy for enhancing learners' academic achievement. Ethiopian educational managers at all levels should provide training for secondary school teachers to change their attitude about classroom management, keeping an orderly classroom environment, and maximizing teaching time so as to enhance students' academic achievement. In addition, teachers of secondary schools should be trained by professionals to use positive reinforcement, meet learners' needs, create a shared vision, communicate a shared vision with learners, learn to identify learners prior knowledge, use continuous assessment, and use lower-order and higher-order questions.

Recommendations

The article also recommends that secondary schools use their time properly and follow school policies for homework, pupil absenteeism, cancellation of lessons, and maintaining order in the schools, which are the best strategies for enhancing students' academic achievement. Lastly, teachers at Ethiopian public secondary schools should give learning opportunities to learners concerning such variables as the availability of curriculum materials, activity plans, and rules on how to follow the curriculum so as to enhance students' academic achievement.

CRediT authorship contribution statement

The author confirms sole responsibility for the conception of the study, the presentation of results, and manuscript preparation.

Declaration of Competing Interest

The author declared no competing interests in any shape or form.

Ethical approval

As the research was conducted by the initiative of the researcher, the researcher at the beginning convinced sampled selected Ethiopian public secondary school directors and supervisors and collected the necessary data that answers the research question under investigation from teachers.

Data availability statement

Data that underlines the findings of this study can be supplied upon reasonable request.

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REFERENCES

Abie, M., Melesse, S., & Melesse, T. (2023). Exploring the status of curriculum development and execution processes in the Ethiopian education system against Schwab's signs of crisis in the field of curriculum. *Cogent Education*, *10*(1). https://doi.org/10.1080/2331186x.2022.2163125

Alam, A., & Mohanty, A. (2023). Cultural beliefs and equity in educational institutions: exploring the social and philosophical notions of ability groupings in the teaching and learning of mathematics. *International Journal of Adolescence and Youth*, *28*(1), 2270662. https://doi.org/10.1080/02673843.2023.2270662

Allen, K., Slaten, C. D., Arslan, G., Roffey, S., Craig, H., & Vella-Brodrick, D. A. (2021). School Belonging: The Importance of Student and Teacher Relationships. In *Springer eBooks* (pp. 525–550). https://doi.org/10.1007/978-3-030-64537-3_21

Bernhard, R., McDermott, T., Hasenhüttl, C., Burn, K., & Sammons, P. (2024). A focus on the quality of teaching in schools increases students' progress of attainment. Evidence from English secondary schools. *School Effectiveness and School Improvement*, *35*(4), 506–530. https://doi.org/10.1080/09243453.2024.2398601

Betakan, M. B., Owusu, A. A., & Kwarteng, J. T. (2024). Determinants of learning strategies among undergraduate accounting students: a study in an emerging economy. *Cogent Education*, *11*(1). https://doi.org/10.1080/2331186x.2024.2432738

Burroughs, N., Gardner, J., Lee, Y., Guo, S., Touitou, I., Jansen, K., & Schmidt, W. Burroughs, N., Gardner, J., Lee, Y., Guo, S., Touitou, I., Jansen, K., & Schmidt, W. (2019). A review of the literature on teacher Effectiveness and student outcomes. *IEA Research for Education*, 7–17. https://doi.org/10.1007/978-3-030-16151-4_2

Hiebert, J., & Stigler, J. W. (2023). Creating practical theories of teaching. In *Springer eBooks* (pp. 23–56). https://doi.org/10.1007/978-3-031-25613-4_2

Khritish, S. (2024). Teachers' Behaviour and Its Impact on Students' Achievement. *SSRN Electronic Journal 1, 1-18*. https://doi.org/10.2139/ ssrn.4659157

Kyriakides, L., & Creemers, B. P. (2009). The effects of teacher factors on different outcomes: Two studies testing the validity of the dynamic model. *Effective Education*, *1*(1), 61–85. https://doi.org/10.1080/194155309030436 80.

Kyriakides, L., & Panayiotou, A. (2023). Using Educational Effectiveness Research for Promoting Quality of Teaching: The Dynamic Approach to Teacher and School Improvement. In *Springer eBooks* (pp. 7–27). https://doi.org/ 10.1007/978-3-031-31678-4_2

Liu, W. (2019). "Education Abroad" for International Student Advisors: What is the impact on their professional development? *Journal of International Students*, *9*(1), 306– 319. https://doi.org/10.32674/jis.v9i1.258

Lynam, S., Cachia, M., & Stock, R. (2022). An evaluation of the factors that influence academic success as defined by engaged students. *Educational Review*, *76*(3), 586–604. https://doi.org/10.1080/00131911.2022.20528 08

Murray, N., Ma, X., & Tyler, K. (2021). Examining academic success among African American high school students. *Educational Studies*, *50*(3), 362– 381. https://doi.org /10.1080/03055698.2021.1944062

Opdenakker, M. (2023). Teacher and Teaching Behaviour and Student motivational Outcomes: critical reflections on the knowledge base and on future research. In *Springer eBooks* (pp. 29– 83). https://doi.org/10.1007/978-3-031-31678-4_3

Suleiman, I. B., Okunade, O. A., Dada, E. G., & Ezeanya, U. C. (2024). Key factors influencing students' academic performance. *Journal of Electrical Systems and Information Technology*, *11*(1). https://doi.org/10.1186 /s43067-024-00166-w

Vieluf, S., & Klieme, E. (2023). Teaching effectiveness revisited through the lens of practice theories. In *Springer eBooks* (pp. 57– 95). https://doi.org/10.1007/978-3-031-25613-4_3

Yamane, T. (1967). Statistics: An Introductory Analysis, 2nd edition, New York: Harper and Row https://www.scirp.org/ reference/ReferencesPapers?ReferenceID= 1440506