frontiers | Frontiers in Education

TYPE Original Research
PUBLISHED 18 September 2024
DOI 10.3389/feduc.2024.1394637

OPEN ACCESS

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RECEIVED 01 March 2024
ACCEPTED 15 August 2024
PUBLISHED 18 September 2024

CITATION
Shanko SS and Kabtyimer MT (2024) Examining the status of school improvement program implementation in primary schools: a case study in South Ethiopia region. *Front. Educ.* 9:1394637. doi: 10.3389/feduc.2024.1394637

Examining the status of school improvement program implementation in primary schools: a case study in South Ethiopia region

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The implementation of a School Improvement Program (SIP) is a means to enhance the overall quality of education and ultimately improve students' academic outcomes. Hence, this study aimed to investigate the extent of SIP implementation with respect to its main domains in primary schools of Gamo Gofa Zone, South Ethiopia Region. Accordingly, the current study focuses on four key areas in schools, which include teaching-learning, school leadership and management, parent-community school relations, and healthy school environment. A descriptive survey research design was used with a quantitative research method. From 16 primary schools; 99 teachers, 32 principals, 44 school improvement committees and 396 students were selected using a simple random sampling technique. The research utilized close-ended questionnaires and document reviews as data-gathering instruments. Quantitative data were analyzed using mean, standard deviation, and one-way ANOVA, while qualitative data were analyzed using descriptive narration. The findings revealed that the implementation of SIP in the four main domains was moderate status. However, the domains of teac hing-learning and school leadership exhibited a high level of implemen tation. The study also identified significant differences among districts regarding the extent of implementation in the teaching-learning and community participation domains. Moreover, the results of grade four zonal and grade eight regional examinations indicated that SIP is not yet properly implemented and needs high consideration. Therefore, raising awareness about the revised school improvement Blueprint and framework through short-term training, establishing an incentive system to encourage best practices and implementing formal monitoring and evaluation tools are suggested to boost the status of SIP implementation in the study area.

KEYWORDS

implementation, primary school, school improvement committees, school improvement program, status

1 Introduction

1.1 Background of the study

Education is widely acknowledged as a crucial factor in the development of any nation, serving as a catalyst for progress and change. Scholars like Lockheed and Verspoor (1991) have emphasized that education is fundamental to economic and social development, enabling individuals and

society to actively participate in the developmental process by acquiring knowledge, skills, abilities, and attitudes (MoE, 1994). Schools play a central role in achieving these educational objectives as they serve as institutions where formal teaching and learning activities take place. Educators worldwide have been striving to improve schools and enhance their effectiveness and efficiency. In the past, efforts were primarily focused on enhancing students' basic skills and implementing standardized testing programs (Carlson, 1996).

However, the rapidly evolving needs of society have compelled schools to adapt their systems to meet the changing requirements. In an increasingly competitive environment, schools are required to raise standards and improve the quality of their services (Harris, 2005). They must ensure the availability of relevant resources and revise the teaching-learning process to provide students with a standardized education. Consequently, school improvement programs have gained significant attention as a dominant approach to fostering educational change and improving student achievement and the overall quality of education (Hopkins, 2001).

One such program is the SIP, which aims to bring about positive changes in schools and ensure quality education. According to the Ethiopian Ministry of Education, the SIP is one of the six general education quality improvement packages designed to enhance school capacity, prioritize needs, develop school improvement plans, promote community participation, improve resource utilization and decision-making, and enhance the learning environment (MoE, 2007). The SIP focuses on four key domains: teaching-learning, school leadership and management, parent-community school relationships, and a healthy school environment. Each of these domains is of equal importance, and the strength of the whole program is contingent on the effectiveness of each domain (MoE, 2010). The SIP is a continuous and cyclic process that involves planning, implementation, evaluation, and reporting, all of which need to be consistently implemented at the school level (MoE, 2007).

Given the significance of the SIP in improving education quality, this study aims to assess the implementation of the SIP as part of the General Education Quality Improvement Package (GEQIP). School improvement is a distinct approach to educational change that focuses on enhancing student performance by improving teaching-learning processes and creating supportive conditions (Harris, 2005).

Previous studies by Hopkins et al. (1994) and Adelman and Taylor (2007) have highlighted the positive impact of the SIP program on education quality, emphasizing the role of best practices within the four domains of the program. Likewise, other researchers have explored the implementation, challenges, and opportunities of the SIP in different regions of Ethiopia, including Kifle and Tariku (2014), Mengistu (2017), Gezahegn and Abebe (2019), Solomon (2020), Jerusalem and Ali (2021), Dabesa and Cheramlak, (2021), and Yishak and Triegaardt (2022).

Some other studies were also conducted about perceptions and contributions of stakeholders to the SIP implementation, such as Solomon (2016), Solomon (2020), and Yishak and Triegaardt (2022). Moreover, Lemessa (2016) and Solomon (2016) investigated the status of SIP implementation, with Solomon focusing on preparation and Lemessa on actual implementation. However, the current study aims to provide a more comprehensive examination of the status of SIP implementation, focusing on its extent, implementation differences among the four domains, and the impact on students' academic results across different SIP implementation eras. This is important because prior research, including studies by Dereje (2012), Gezahegn and Abebe (2019), Solomon (2016), Solomon (2020), and Dabesa and Cheramlak (2021), have indicated that the implementation of the SIP has faced various challenges that have limited its high-level implementation, particularly in the Gamo Gofa Zone. Therefore, this study aimed to seek this gap by examining the extent of SIP implementation with respect to its main domains in primary schools of Gamo Gofa Zone in South Ethiopia Region. Accordingly, the following research questions were formulated to address the research objectives:

- What is the extent of SIP implementation in terms of its four main domains?
- Are there significant differences in the implementation of the main SIP domains in the study area?
- Do students' academic results vary across different eras of SIP implementation?

2 Literature review

The Education and Training Policy and its implementation document reveal a shortage in access to education for citizens and low quality of education in Ethiopia. To address these problems, initiatives were taken to develop the new Education and Training Policy (MoE, 2023). Although the implementation of the policy improved education access, the quality of education at different levels was not improved (MoE, 2002). It became necessary to shift focus to quality concerns, particularly those inputs and processes that directly translate to improved student learning and help transform schools into genuine learning environments (MoE, 2007). To improve quality shortcomings, the Ministry of Education launched the General Education Quality Improvement Package (GEQIP) in 2007. This package consisted of four major programs, including the School Improvement Program (SIP), aimed at enhancing the quality of education in the country (MoE, 2007).

The SIP, adopted from Australian school excellence initiatives, comprises four domains and 12 elements (MoE, 2007). The program was designed by the Ministry of Education in Ethiopia and then disseminated to regions, zones, and schools for implementation. Trainings were provided to various educational leaders, experts, and teachers to ensure program implementation, but stakeholders reportedly lacked adequate awareness of the School Improvement Program (Lemessa, 2016). Despite remarkable achievements in access, the quality of education in Ethiopia has faced serious problems. Assessments of the Education Sector Development Plan III-V and national primary and secondary learning examinations indicated that student achievements were below average for most subjects (MoE, 2005; MoE, 2007). Factors contributing to low student outcomes included school management and organization, availability of textbooks and instructional materials, and language of instruction (MoE, 2007). To address these and other related problems, the MoE proposed the GEQIP to enhance the quality of education and student achievement (MoE, 2007).

The Ethiopian Ministry of Education (MoE) has exerted considerable effort to improve the quality of education in the country, as evidenced by the implementation of the School Improvement Program (SIP). This structured approach involves several key steps:

during the preparation phase, the school improvement unit and stakeholders collect data on the school's current state; this informs the development of 3-year and annual plans with goals, objectives, and priorities for improvement activities (MoE, 2007); the plan is then executed, with the school improvement committee overseeing the process and reporting on progress; finally, the school undergoes annual evaluations to assess improvements, identify new priorities, and receive feedback from external bodies, all with the aim of continuously enhancing the effectiveness of the education system.

The importance of school improvement as a process for enhancing the quality of students' learning and strengthening the capacity for change in schools is widely recognized. It has become the dominant approach to bringing about educational change (Hopkins, 2002). The SIP is essential for schools to provide quality education by improving the conditions in which teaching and learning take place. In an era of constant change, this program is crucial for schools to survive and enhance their quality (Hopkins et al., 1994). The primary focus of the program is on students' learning and their learning outcomes. High-performing schools support students' learning through the implementation of best practices across various elements within the four domains of schooling (Gallagher, 2004).

The main goal of school education is to promote students' learning and achievements, and teaching is the key to achieving desired learning outcomes. The study of school improvement emphasizes the central role of teaching and learning in the pursuit of sustained school improvement (Hopkins et al., 1994). Teaching and learning are fundamental factors that make a difference in the minds of learners, influencing their knowledge, skills, attitudes, and capacity to contribute to contemporary societies. Classroom conditions, including student and teaching-related factors, significantly impact the teaching and learning process (Hopkins, 2002).

The school learning environment encompasses the internal characteristics, both psychological and physical, that influence staff, students, and the teaching and learning processes within the school (Reynolds, 1996). Therefore, schools are expected to create a conducive climate and culture that facilitate effective teaching and learning. Addressing school culture directly is essential for achieving school improvement. When the school environment is suitable for teaching and learning processes, it greatly contributes to the quality of education (MoE, 2007). A stimulating school environment encourages purposeful student activity and supports a wide range of activities that facilitate learning. According to a study conducted by Gezahegn and Abebe (2019), the school environment consists of physical, psychosocial, and service delivery elements. The study also indicates that the physical learning environment varies from modern, well-equipped buildings to open-air gathering places.

The quality of administrative support and leadership is another critical element in school processes. Education systems benefit from decentralized management, which brings services closer to students, parents, and communities. Effective leadership is not solely dependent on a single leader but can be distributed among individuals within the school, fostering collaborative cultures and positive relationships (Harris, 2005). Effective leaders in schools are those who can build high-performing work teams.

Schools become more effective and caring when they are actively involved in the community. To create a good and safe learning environment, schools must enhance family and community involvement. This involvement leads to improved academic performance, reduced disciplinary problems, higher staff morale, and better utilization of resources (Adelman and Taylor, 2007). The Ministry of Education (MoE, 1994) has outlined basic principles for community involvement strategies in schools, including conducting village meetings to understand the interests and challenges related to children's education, identifying leaders for school-based communities, and giving parents a role in the day-to-day management of the school.

Furthermore, the stakeholders of the school improvement program, such as principals, school improvement committees, parents, teachers, and students, should actively participate in all phases of program implementation, particularly in monitoring and evaluation. Monitoring and evaluation mechanisms are important to ensure functional progress and achievements, aligning with the Ministry of Education's general education quality improvement packages (MoE, 2007). Among the four domains, teaching and learning receive particular attention as they play a crucial role in determining the success of schools in promoting students' learning outcomes (MoE, 2011).

According to the information presented in Figure 1, the improvement program comprises four domains and 12 elements (MoE, 2007). The Ministry of Education has developed these domains with the intention of decentralizing them to the regions and subsequently disseminating them to the lower educational sub-sectors within the country. This dissemination will be accomplished through various forms of training, specifically targeting educational leaders, experts, and school teachers.

To sum up, the school improvement and effectiveness literature has evolved significantly in recent decades, moving beyond simplistic input–output models toward a more nuanced understanding of the multifaceted and context-dependent nature of school improvement. Contemporary frameworks emphasize the importance of considering the school as a complex, dynamic system embedded within broader ecological contexts (Reynolds et al., 2014; Creemers and Kyriakides, 2015).

School improvement is not merely about implementing standardized interventions, but rather a recursive process of organizational learning and adaptation that takes into account the unique circumstances, resources, and challenges of each school (Hargreaves and Fullan, 2012; Fullan, 2016). Key domains that have been identified as critical for effective school improvement include leadership and school culture, curriculum and instruction, professional development and teacher quality, student and community engagement, and data-driven decision making. These domains interact in complex ways and require a holistic, systemic approach to school improvement, rather than fragmented, piecemeal interventions (Leithwood et al., 2019; Hargreaves and Fullan, 2012).

In the context of Ethiopia, the challenges faced in implementing school improvement efforts may be shaped by factors such as resource constraints, centralized educational governance, teacher professional development needs, and cultural norms around community engagement (Habtamu, 2012). Carefully considering how these contextual factors interact with the key domains of school improvement may provide valuable insights for designing and implementing more effective and sustainable school improvement strategies in Ethiopia.

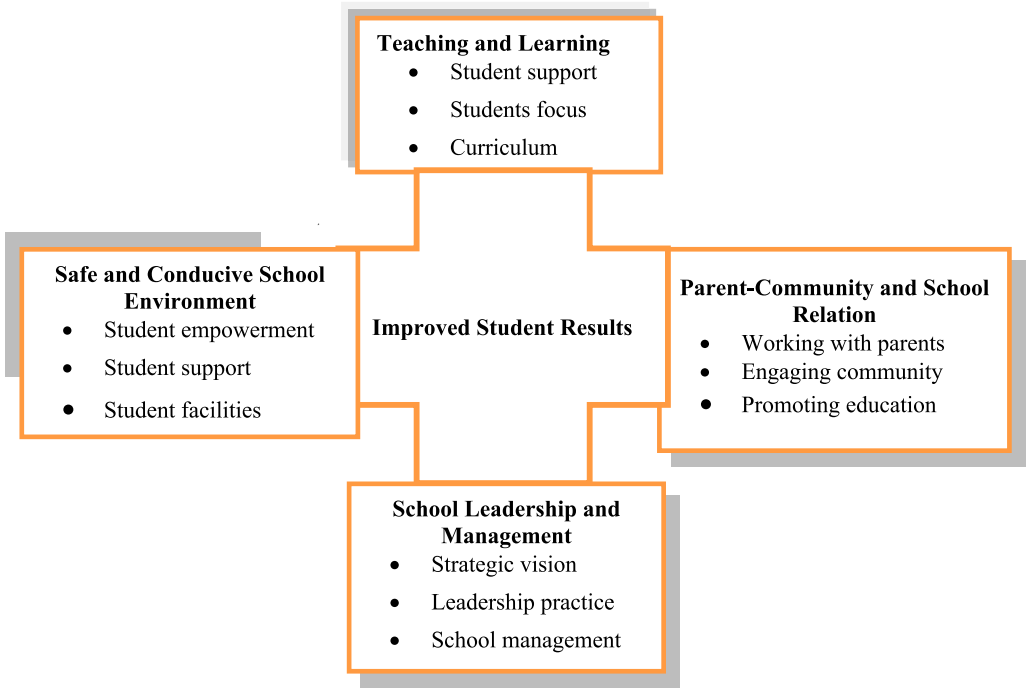


FIGURE 1
Domains and elements of the school improvement program (SIP). Source: adopted from school improvement blue print manual (MoE, 2007).

3 Research methods

3.1 Study area description

Gamo Gofa Zone is one of the 15 zones located in the Southern Nations, Nationalities, and Peoples Regional State of Ethiopia. The administration of the zone consists of 15 rural districts and two city administrations. The capital town of the zone is Arba Minch, situated 505 km to the south of Addis Ababa, the country's capital, and 255 km from the regional city, Hawassa.

According to the 2017/18 annual abstract from the Gamo Gofa Zone Education Department, there are a total of 902 schools, 12,445 teachers, 238 supervisors, 902 directors, and 542,867 students. The focus of the present study is on four districts within the zone: Bonke, Boreda, Demba Gofa, and Geze Gofa (Figure 2).

3.2 Research design

The current study employed a descriptive survey research design to gather information about one or more groups of individuals, such as their characteristics, opinions, attitudes, or past experiences (Leedy and Ormrod, 2005). This design was chosen because it allows researchers to obtain reliable and pertinent data from diverse groups regarding the actual implementation of the problem under investigation. It also facilitates the collection of a substantial amount of quantitative data from a sample population within a specific timeframe, which can then be quantitatively analyzed using descriptive and inferential statistics (Best and Kahn, 2005). Moreover, this descriptive survey approach was well-suited to capture a comprehensive understanding of the target population's experiences, perceptions, and opinions related to the problem of interest. The quantitative data collected can provide valuable insights to inform future research and interventions.

3.3 Research method

The study employed a quantitative research method which involves the systematic empirical investigation of observable phenomena via statistical, mathematical, or computational techniques (Neuman 2000). This method is well-suited for collecting a large volume of data from a defined sample within a limited timeframe (Best and Kahn, 2005).

Moreover, quantitative research is commonly used to address specific research objectives and questions (Engel and Schutt, 2016). It allows researchers to measure and analyze relationships between variables, test hypotheses, and draw inferences about a population based on a representative sample. This method is particularly effective for assessing the opinions, attitudes, and behaviors of a large target population. The use of quantitative methods facilitated the gathering of numerical data that could be statistically analyzed to identify patterns, trends, and relationships. This enabled the researchers to generate objective, quantifiable insights about the topic of study. Hence, by collecting and analyzing numerical data, the researchers were able to produce findings that could be generalized to the broader population and replicated in future studies.

3.4 Study population, sampling, and sample size

Regarding the sampling process, a simple random technique was employed to select teacher and student groups. Census and availability

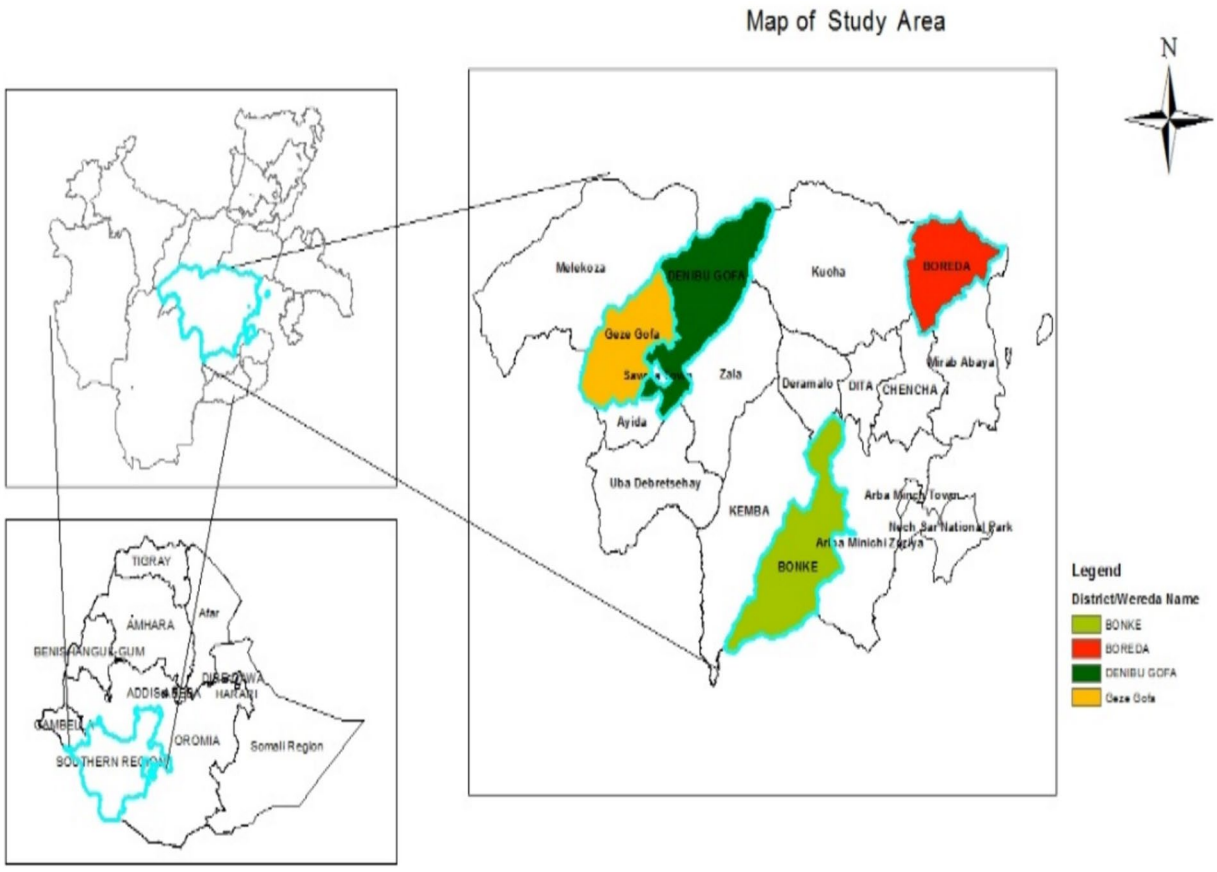


FIGURE 2
Geographical map of the study area.

sampling techniques were used to obtain principals and school improvement committees, respectively. Out of a total of 15 districts and two city administrations, four districts were chosen. Similarly, out of 152 primary schools, 16 schools were selected. Furthermore, 99 teachers were chosen from a pool of 411 teachers, while 396 grade seven and eight students were selected from a total of 3,470 students. Additionally, 32 school principals were selected from a group of 42 and 44 school improvement committee members were chosen from a pool of 91 members.

The selection of 571 participants in total was based on the recommendation to include at least 10–20% of the total population to determine the desired sample size (Neuman, 2000). These participants were chosen to represent the population from which each stratum was drawn (Table 1).

3.5 Data collection instruments

A survey questionnaire consisting of close-ended items was utilized to gather quantitative data from students, teachers, principals, and school improvement committees. This approach offers the advantage of efficiently collecting information from a large number of respondents within a short timeframe and at a reasonable cost. The items in the questionnaire were designed based on the main domains, elements, standards, and indicators of the SIP, which were originally developed by the Ministry of Education of the Country, Ethiopia. The questionnaire consisted of a total of 24 items, organized as follows: the first seven items pertained to the teaching-learning domain, the next nine items were related to school leadership, four items were focused on the conducive school environment, and the remaining four items addressed community participation. A five-point rating Likert scale was employed, with the following scale: very high-5, high-4, medium-3, low-2, and very low-1, to collect data from the respondents.

To analyze students' academic results during different phases of SIP implementation, a thorough review of academic records from grade four zonal and grade eight regional examinations was conducted.

3.6 Reliability and validity

The initial reliability test of the research instrument, conducted with 30 participants at Kamba primary school, yielded a Cronbach's alpha of 0.71. After making corrections such as rewording ambiguous questions and adjusting the item set, the Cronbach's alpha increased to 0.86 upon re-testing. The survey items were also reviewed by subject matter experts for validity. The overall reliability coefficient for the study variables was found to be >0.8, which is considered an acceptable level (George and Mallery, 2003).

TABLE 1 Participants of the study.

Types of respondents	Bonke			Boreda			Dembagofa			Gezegofa			Total		
	P	S	%	P	S	%	P	S	%	P	S	%	P	S	%
Schools	40	4	10	37	4	10.8	39	4	10.2	36	4	11.1	152	16	10.5
Principals	8	8	100	9	9	100	9	9	100	6	6	100	32	32	100
Teachers	100	26	26	90	32	35.5	108	21	19.4	113	20	17.7	411	99	24.1
Students	931	105	11.3	532	85	16	1,058	108	10.2	949	98	10.3	3,470	396	11.4
SIC	29	11	37.9	20	9	45	20	11	55	22	13	59.1	91	44	48.3
Total	1,068	150	14	651	135	20.7	1,195	149	12.5	1,090	137	12.6	4,004	571	14.3

P, Population; S, Sample size; SIC, School improvement committee. Source: Gamo Gofa Zone Education Department (2019/20).

3.7 Methods of data analysis

Descriptive statistics, including measures such as mean and standard deviation, were employed for statistical analysis to assess the level of implementation across the main SIP domains. Bar graphs were utilized to visually present and compare the academic performance of the reviewed students during various strategic periods. Additionally, one-way ANOVA was employed to identify any significant differences in implementation among the four program domains and the four districts. Before application of the ANOVA test, its preconditions like randomization, normal distribution and homogeneity of variance were checked.

4 Results and discussion

This section is dedicated to presenting the results and discussing the major findings of the study. The findings are organized according to three themes that were developed based on the research questions. Descriptive statistics were utilized to assess the level of implementation of the SIP in four domains. To facilitate this assessment, a five-point Likert scale was employed, with the following ranges: very high (4.50–5.00), high (4.00–4.49), average (3.00–3.99), low (2.00–2.99), and very low (1.00–1.99). The implementation of SIP domains across different districts was compared and analyzed using one-way ANOVA. Additionally, the section includes a presentation of students' academic results during various SIP strategic eras. The major findings are discussed within each theme, supported by empirical evidence and relevant literature.

4.1 The extent of SIP implementation in the four main domains

Regarding the magnitude of SIP implementation, the data obtained from principals, school improvement committees, teachers, and students of the four districts are commonly treated using descriptive statistics; mean and standard deviation as indicated in Table 2.

In Table 2, the analysis indicates that the implementation of the Geze Gofa district SIP across four domains is at an average level. The mean scores for each domain are as follows: teaching-learning ($M = 3.99 \pm 0.655$), school leadership ($M = 3.83 \pm 0.696$), conducive school environment ($M = 3.53 \pm 0.963$), and community participation ($M = 3.23 \pm 1.122$). Notably, the Geze Gofa district shows a high level of implementation in teaching-learning and school leadership domains.

Similarly, in the Demba Gofa district, the mean values indicate an average level of implementation across all domains: teaching-learning domain ($M = 3.96 \pm 0.625$), school leadership ($M = 3.87 \pm 0.710$), conducive school environment ($M = 3.54 \pm 0.947$), and community participation ($M = 3.35 \pm 0.979$). However, the schools in the Demba Gofa district are very close to a high level in the teaching-learning and school leadership domains.

Furthermore, the analysis reveals that schools in the Boreda district are at an average level across all four domains. However, the teaching-learning and school leadership domains show a good potential for performing at high levels. Lastly, the Bonke district results indicate that schools' performance in implementing teaching-learning ($M = 3.75 \pm 0.862$), school leadership ($M = 3.67 \pm 0.890$), conducive school environment ($M = 3.28 \pm 1.169$), and community participation ($M = 2.98 \pm 1.184$) are nearly at the average extent of implementation.

To sum up, the analysis reveals that the implementation of the SIP varies across the districts. Geze Gofa and Demba Gofa districts perform well in teaching-learning and school leadership. Boreda district shows potential for high performance, while Bonke district's implementation is moderate in all domains. The overall SIP implementation with regard to the main domains are presented in Table below.

The scores presented in Table 3 demonstrate the average scores for the implementation of the SIP across four main domains. The mean score for the overall implementation of SIP in these domains was 3.89 ± 0.711 for teaching-learning, 3.79 ± 0.762 for school leadership, 3.43 ± 1.007 for conducive school environment, and 3.33 ± 1.064 for community participation.

The overall implementation of the School Improvement Program (SIP) across the four domains was found to be at a moderate level, as evidenced by an average score of 3.58 ± 0.722. Likewise, previous studies have identified several key factors limiting SIP implementation, including lack of learning facilities and poor community participation (Dabesa and Cheramlak, 2021), inadequate financial and material resources, low follow-up and support from education officials, lack of commitment from the school community, and poor cooperation from parents and partner organizations (Kalayou, 2011), absence of a well-prepared plan, poor understanding of SIP at the school level, weak monitoring and evaluation, lack of leadership capacity, insufficient stakeholder involvement, and insufficient attention to SIP (Yishak and Triegaardt, 2022). Similarly, the major hindering challenges hindering

TABLE 2 Descriptive statistics of SIP domains among districts.

District		Main SIP domains			
		Teaching learning	School leadership	Conducive school environment	Community participation
Geze Gofa	N	137	137	137	137
	M	3.99	3.83	3.53	3.23
	SD	0.655	0.696	0.963	1.122
Demba Gofa	N	149	149	149	149
	M	3.96	3.87	3.54	3.35
	SD	0.625	0.710	0.947	0.979
Boreda	N	135	135	135	135
	M	3.89	3.83	3.35	3.34
	SD	0.646	0.716	0.901	0.910
Bonke	N	150	150	150	150
	M	3.75	3.67	3.28	2.98
	SD	0.862	0.890	1.169	1.184

N, No. of observation; M, Mean; SD, Standard deviation.

TABLE 3 Overall extent of SIP domains implementation.

Main domains	No of observation	Minimum	Maximum	Mean	Standard deviation
Teaching learning	571	1.14	5.00	3.89	0.711
School leadership	571	1.00	5.00	3.79	0.762
Conducive school environment	571	1.00	5.00	3.43	1.007
Community participation	571	1.00	5.00	3.33	1.064
Grand mean	571	1.06	5.00	3.58	0.722

effective implementation of SIP were found to be scarcity of instructional materials, lack of adequate budget, improper utilization of school grants, absence of incentive mechanisms, and failure to search for additional budgets (Solomon, 2020).

However, Gezahegn and Abebe (2019) found that the preparations made for SIP implementation were satisfactory, while Kifle and Tariku (2014) suggested that the participation of different stakeholders, such as teachers, students, parents, principals, and supervisors, in the school improvement program is weak due to a lack of coordination toward common goals, and recommended that school management should take responsibility for organizing the efforts of various stakeholders to ensure effective SIP implementation. Similarly, Marzano (2003) noted that the SIP initiatives in South Africa faced challenges such as a lack of material resources, limited capacity of educational leaders, poor participation, and a lack of safe institutional environments. Hopkins (2002) also observed the difficulty in changing school management and work culture to effectively implement SIP in developing countries.

The ANOVA results in Table 4 showed significant differences among the four main domains implemented in the schools of selected districts. The *F*-values and associated *p*-values were as follows: teaching-learning ($F = 9.039$, $p = 0.003$), school leadership ($F = 6.117$, $p = 0.014$), conducive school environment ($F = 4.106$, $p = 0.043$), and community participation ($F = 10.246$, $p = 0.001$). The F-tests and corresponding *p*-values indicated that there are significant variations in these domains, with $p < 0.05$ for each. This refers that the implementation of the four main domains differs significantly across the schools, highlighting the importance of addressing these areas for effective SIP implementation.

Likewise, the analysis of SIP implementation in different districts demonstrates a moderate level of effort across all domains, that is consistent with previous studies by Dereje (2012) and Lemessa (2016). Contrarily, Gezahegn and Abebe (2019) found that most schools implementing SIP performed moderately in four domains, with weak performance in community involvement. However, they noted that schools excelled in teaching-learning and school leadership, while putting less effort into improving the school environment and community participation. This suggests an imbalance in emphasis on different domains. Hence, MoE (2006) suggests that creating a safe and healthy school environment is crucial for school improvement, and Adelman and Taylor (2007) also emphasized the importance of schools being closely connected to the community for effectiveness and care. Likewise, enhancing community involvement can lead to improved academic performance, reduced disciplinary problems, increased staff morale, and better resource utilization (MoE, 2006; Adelman and Taylor, 2007).

Jeilu (2010) emphasized the need for continuous improvement even in the highest-ranked schools, particularly in the teaching-learning process, empowering stakeholders, creating conducive learning conditions, and enhancing leadership. In addition, MoE

TABLE 4 ANOVA results used to determine the difference in SIP implementation among the domains.

Variables		Sum of squares	Df	Mean square	F	Sig.
Teaching learning	Between groups	4.505	3	4.505	9.039	0.003
	Within groups	283.573	567	0.498		
	Total	288.078	570			
School leadership	Between groups	3.520	3	3.520	6.117	0.014
	Within groups	327.439	567	0.575		
	Total	330.959	570			
Conducive school environment	Between groups	4.146	3	4.146	4.106	0.043
	Within groups	574.561	567	1.010		
	Total	578.708	570			
Community participation	Between groups	11.433	3	11.433	10.246	0.001
	Within groups	634.923	567	1.116		
	Total	646.356	570			

(2011) highlights the importance of giving equal attention to the four domains, with teaching and learning being crucial for student outcomes. Challenges identified by Kalayou (2011), Mengistu (2017), Solomon (2020), and Solomon (2016) include scarcity of instructional materials, inadequate budgets, improper utilization of school grants, lack of incentives, lack of commitment from the school community, poor parental cooperation and support, exclusion of stakeholders in the planning process, and insufficient training for effective SIP implementation (Dabesa and Cheramlak, 2021). These challenges have limited the program's effective implementation.

4.2 The difference in implementation of SIP domains among districts

In 2006 Ministry of Education of Ethiopia launched SIP as a national program in all schools to improve student results. Particularly primary schools have been implementing a three-year strategic plan using SIP documents like school improvement framework, school improvement program implementation manual, and school improvement guideline. During this session, the researchers tried to show the significant difference among districts with regard to the main SIP domain implementation in primary schools using a one-way ANOVA.

According to Table 5, the statistical analysis ($F = 3.444$ and Sign = 0.017) and ($F = 3.900$ and Sign = 0.009) show that there is a significant difference in the implementation extent of teaching-learning and community participation domains among the four districts. However, the analysis of the school leadership domain ($F = 2.112$ and Sign = 0.098) and the conducive school environment domain ($F = 2.399$ and Sign = 0.067) reveals that there is no statistically significant difference in the implementation of SIP in these two domains across the schools in the four districts. This finding is consistent with the idea that school improvement should be the responsibility of each individual school, as mentioned by Stoll and Fink (1996). High-performing schools achieve student learning outcomes by employing effective practices across various elements within the four domains of schooling, as highlighted by Gallagher (2004). The Ministry of Education of Ethiopia acknowledges that the specific practices within these domains may vary from country to country and from one location to another based on their respective priorities (MoE, 2006).

In general, the study found that there was a significant difference in the implementation of the teaching-learning and community participation domains of the SIP among four districts. However, there was no significant difference in the implementation of the school leadership and conducive school environment domains. The importance of school improvement was emphasized, and it was noted that practices within these domains may vary based on priorities.

4.3 The students' academic result difference in three SIP implementation strategic era

Simultaneously, the researchers examined records pertaining to students' academic achievements, which is the primary objective of implementing the SIP. In order to accomplish this, we analyzed 9 years' worth of data from three different strategic eras of the SIP, evaluating the results of zonal examinations for fourth-grade students, as well as the regional examination results for eighth-grade students. The findings were then presented in two bar charts, illustrating the percentage of students who were promoted based on the zonal and regional examinations across four districts. The charts also provide a comparative representation of the zonal examination results.

According to Figure 3, the data regarding the first two reviewed periods of implementing the SIP strategy in the districts from 2011 to 2013 and 2013 to 2016, indicates that over 90% of students were promoted to the next grade level, and this improvement was consistent for both males and females. However, in the period from 2016 to 2019, the percentage of promoted students dropped to 72.53%. Additionally, the graph shows that in the first two strategic eras of SIP implementation at the zonal level, the results for grade four students increased from 83.81 to 87.58%. However, in the third reviewed strategic era, the rate of promotion for zonal students decreased by 66.41%.

TABLE 5 ANOVA showing the difference among districts regard to main SIP domains.

Variables		Sum of squares	df	Mean square	F	Sig.
Teaching learning	Between groups	5.156	3	1.719	3.444	0.017
	Within groups	282.922	567	0.499		
	Total	288.078	570			
School leadership	Between groups	3.658	3	1.219	2.112	0.098
	Within groups	327.301	567	0.577		
	Total	330.959	570			
Conducive school environment	Between groups	7.253	3	2.418	2.399	0.067
	Within groups	571.454	567	1.008		
	Total	578.708	570			
Community participation	Between groups	13.069	3	4.356	3.900	0.009
	Within groups	633.287	567	1.117		
	Total	646.356	570			

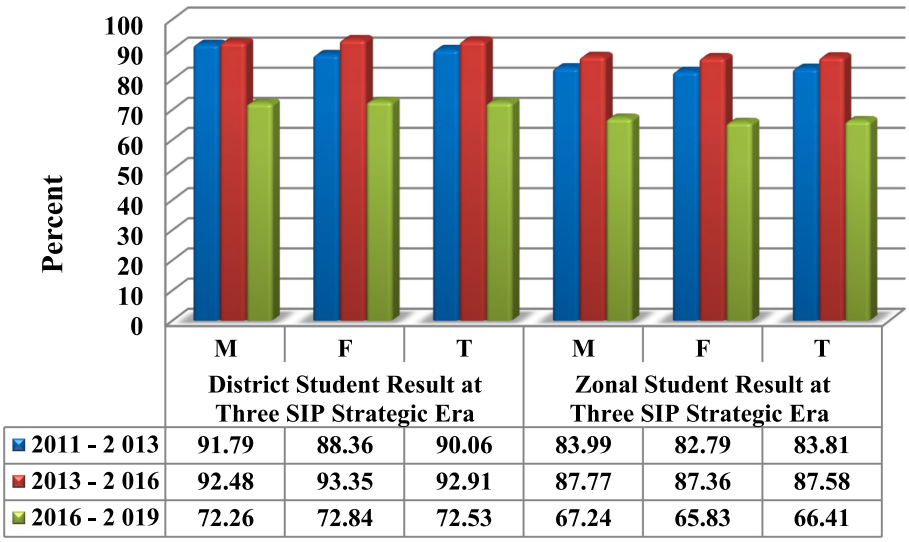


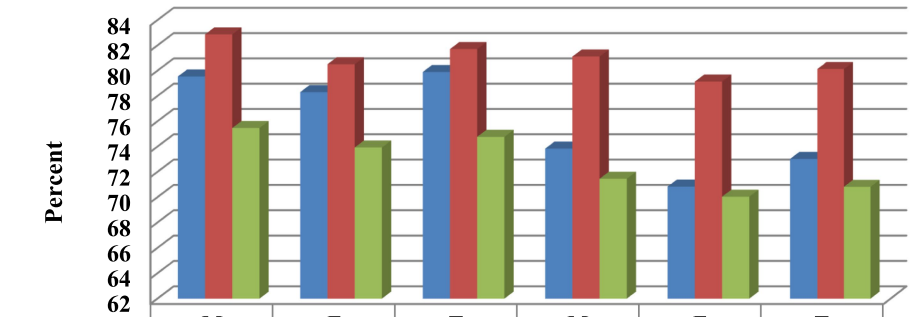
FIGURE 3
A bar graph of the percentage comparison for grade four students' results. Source: Gamo Gofa Zone Education Department (2019/20).

According to the bar graph shown in Figure 4, there was an improvement in the percentage of students promoted in the primary school leaving regional examination during the first and second reviewed strategic eras of the districts. This improvement was observed in both males and females, with an average of 80% of students being promoted to the next grade level. However, in the third reviewed strategic era, the percentage of promoted students decreased to 74.77%. The zonal data also showed a similar trend, with an improvement from 73.03 to 80.13% in the first and second reviewed strategic eras. However, in the third reviewed strategic era, the zonal rate of promoted students decreased by 10%.

Based on the information presented in the charts, it can be inferred that the implementation of the SIP in the districts has implications for student performance. The results of the grade four zonal examinations indicate that effective implementation of SIP is crucial in the first cycle primary schools of the study districts. Similarly, the grade eight regional examination results suggest that the SIP is not yet properly implemented and requires careful attention in the study districts.

Likewise, the concept of school improvement involves enhancing the input and process of teaching and learning to improve student outcomes. The SIP aims to improve the quality of education and enhance students' learning achievements and outcomes. It is recognized as a vital strategy for schools to thrive and maintain quality in a changing educational landscape (Hopkins et al., 1994; Hopkins, 2002; MoE, 2006; Jeilu, 2010). The main focus of the program is to improve students' learning and learning outcomes. The purpose of school improvement, as stated by the Ministry of Education (MoE, 2007), is to enhance students' learning and their outcomes at a higher level.

Similarly, according to Yishak and Triegaardt (2022), the success of school improvement is directly linked to the systematic planning, monitoring, and evaluation processes implemented by school leaders. This contributes to higher student achievement. To ensure effective



	District Student Result at Three SIP Strategic Era			Zonal Student Result at Three SIP Strategic Era		
	M	F	T	M	F	T
2010 - 2 013	79.54	78.31	79.9	73.84	70.84	73.03
2013 - 2 016	82.87	80.51	81.71	81.12	79.14	80.13
2016 - 2 019	75.47	73.93	74.77	71.46	70.04	70.82

FIGURE 4
A bar graph of the percentage comparison of grade eight students' results. Source: Gamo Gofa Zone Education Department (2019/20).

school improvement, key stakeholders like teachers, students, and parents should be encouraged to actively participate in the planning and implementation. The central goal is to improve student performance, so school leaders must properly execute the school improvement agenda by raising stakeholder awareness, fostering collaborative responsibility, implementing and refining the main SIP domains, continuously monitoring progress, and addressing challenges that arise.

5 Conclusion

The findings indicate that the extent of implementing the SIP in its main domains in the primary schools of the Gamo Gofa districts is moderate. Additionally, the analysis reveals significant differences in the implementation extent across various key undertakings of the program. Regarding the differences in domain implementation among the four districts, the study reveals a significant disparity in the extent of implementation in the teaching-learning and community participation. However, no noticeable mean difference is observed in the implementation of the school leadership and conducive school environment domain. Furthermore, an examination of students' results in grade four zonal examinations and grade eight regional examinations during three strategic eras confirms the inadequate implementation of the school improvement program in the primary schools of the study districts. These results are believed to be generalizable only to the primary schools of south Ethiopia region. However, the study is plausible that limitations could have influenced the results obtained. Firstly, it does not provide a comprehensive view of SIP implementation because it solely concentrates on primary schools and excludes secondary schools. Additionally, it fails to address the challenges faced during moderate levels of SIP implementation. Moreover, the absence of qualitative data makes it difficult to either corroborate or supplement the findings obtained from quantitative data.

However, this study provides empirical evidence on the implementation of SIP in primary schools in southern Ethiopia. The findings reveal variations in the extent of SIP implementation across its key domains, highlighting uneven progress. The study, hence, establishes a connection between program execution and educational outcomes, shedding light on systemic challenges inhibiting school effectiveness.

Overall, the moderate and uneven implementation of the nationally mandated SIP program underscores the complexities of large-scale educational reform in developing countries like Ethiopia. The observed disparities across districts in implementing critical domains suggest the importance of attending to local contexts and capacity building needs when rolling out system-wide initiatives. Accordingly, the following recommendations are forwarded to improve SIP implementation in particular, and primary school effectiveness in general:

- At school level, use the revised school improvement Blueprint and Ministry of Education's framework to emphasize enhancing the four domains, particularly school environment and community participation.
- Adopt incentive mechanisms to encourage best practices in SIP implementation at the zonal, district, and school levels.
- Regional education Bureaus and zone education sectors should provide training to stakeholders on planning, preparing, and implementing strategic plans for SIP, with a focus on teachers, principals and school improvement committees.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The research conducted in this study received ethical approval from the Ethics Committee of the School of Pedagogical and Behavioral Sciences at Arba Minch University. The approval reference number is SPBS/971/2019 and it was issued on 02/12/2019. It is important to note that prior to the study, written informed consent

and assent were obtained from the parents/guardians and children aged 12 years and above, respectively. We, the authors, further confirm that the involvement of children under the age of 18 in this article has been conducted with ethical approval from the Arba Minch University committee, as acknowledged within the article.

Author contributions

SS: Data curation, Methodology, Writing – original draft, Writing – review & editing. MK: Conceptualization, Software, Supervision, Validation, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. The authors would like to thank Arba Minch University's Research Directorate for funding this research project through the research coordination office of School of Pedagogical and Behavioral Sciences with the project code: GOV/AMU/TH09/SPBS/PEDAGOGY/2/2010 for data collection and statistical analysis payment.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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