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Articles

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Message from Editor-in-Chief

It brings us great pleasure to introduce Dilla Journal of Education (DJE) from Dilla University's Education Stream. This volume of DJE, as the first issue of 2022, provides the professional community with diverse insights into the Ethiopian education system and related challenges. On behalf of the editorial board, advisory board, and university management, I would like to thank the authors of the articles published in this issue as well as acknowledge the wonderful assistance that both the authors and editors received from peer-reviewers.

I am sure it will take time for this journal to really make its mark on the education sector, but good things happen to those who wait and continue in the face of difficulty. I would also like to thank the university's research wing management for their unwavering support and encouragement in our endeavor. More supplements on significant scientific themes in education are in the works. But, of course, the most crucial roles in keeping this journal developing and flourishing belong to the authors, editors, and reviewers of today and tomorrow.

Daniel Gebretsadik Ayele, PhD

Editor-in-Chief

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Effects of Cooperative Learning on the Academic Achievement and attitude towards cooperative learning: the case of Dilla College of Teacher Education First Year Mathematics Students

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Abstract

The aim of this research was to examine how cooperative learning influences the academic performance and attitudes of first-year mathematics students at Dilla College of Teacher Education in Ethiopia. A quasi-experimental design was adopted for the study. Through random assignment, one class ($n_1 = 38$) was designated as the experimental group, while another class ($n_2 = 39$) served as the control group. Both groups were given a pre-test prior to the intervention. Following eight weeks of instruction, a post-test was administered to the two groups. The data were analyzed using a paired t-test to compare mean differences at a significance level of $p < 0.05$. The findings revealed a statistically significant difference in mean test scores between the groups ($t = 9.358$, $p < 0.05$), with the experimental group achieving higher results than the control group. This indicates that cooperative learning significantly enhances students' academic performance. Furthermore, the descriptive results on students' attitudes demonstrated that most participants expressed positive perceptions toward cooperative learning, with an overall mean score of 4.3, corresponding to the "Agree" level. This suggests that learners generally hold favorable views and tendencies toward the cooperative learning approach. In conclusion, the findings confirmed that cooperative learning is more effective in improving conceptual understanding compared to traditional teaching practices. Therefore, teachers are encouraged to integrate cooperative learning strategies into their instructional processes.

1 Introduction

1.1 Background of the Study

As noted by Gocer (2010), cited in Odagboyi and Kreni (2017), learners should not be viewed as separate individuals but as members of a wider community. Children's learning experiences are shaped by their families, peers, and the larger society. The goals of individuals are often aligned with common societal objectives, creating a strong interdependence among them (Odagboyi & Kreni, 2017). Odagboyi (2015) further emphasized that classroom groups characterized by supportive peer relationships promote academic success, while classrooms dominated by peer rejection and interpersonal conflict hinder learning. Instructional strategies such as cooperative learning fulfills several psychological and social needs. A meta-analysis conducted by Johnson, Johnson, Roseth, and Shin (2014) investigated how achievement relates to motivation under three conditions: positive interde-

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pendence (students working together toward shared goals), negative interdependence (students competing), and no interdependence (students working individually). The study confirmed that positive interdependence environments generate higher levels of both motivation and achievement compared to competitive or individualistic situations.

Slavin *et al*. (2014) also argued that science teaching methods designed to strengthen classroom instruction through science-reading integration, cooperative learning, and the use of technology tools—hold great potential in boosting students' academic performance in science.

As noted by Johnson and Johnson (2015), cooperative learning involves far more than merely organizing students into groups. Its effectiveness relies on certain essential components: (a) positive interdependence, in which group members recognize that their success is linked to one another; (b) Process of developing small-group skills and interpersonal as students required to be explicitly educate social skills for effective collaboration; (c) individual accountability, ensuring that each member assumes responsibility for achieving group goals; and (d) arrangement of group, having members reflect won progress and how well they maintain working relationships. Cooperative learning, when implemented effectively, helps students develop critical thinking, problem-solving, and teamwork skills. It also allows them to build on one another's experiences, leading to more comprehensive outcomes and sustained learning.

A study by Zakaria *et al*. (2010), as cited in Girma (2018), compared cooperative learning with traditional teaching in a school in Miri, Sarawak. Results showed that cooperative learning produced better academic outcomes than conventional methods. Similarly, Antil, Jerkins, Wayne, and Vadasy (1998), cited in Kefale (2015), observed that teacher-centered approaches such as lectures, explanation, questioning, and guided practice often focus on individual goals, encourage competition, and may disadvantage students who learn more slowly. In such traditional models, minority or less-advantaged learners may fall behind their higher-achieving peers (Kefale, 2015).

Tesera and Desta (2006) highlighted that, despite widespread criticism of teacher-centered pedagogy, Ethiopian classrooms remain dominated by lecture-based approaches. Students typically listen passively and copy notes, while interactive strategies such as problem solving, cooperative learning, and group work are rarely applied. Mekonnen (2011) also observed that this teacher-led pedagogy places learners in a passive role, which is educationally undesirable. Hence, research findings indicate that in Ethiopia, cooperative learning is often overlooked, despite being widely advocated. At the same time, institutions like Dilla College of Teacher Education are expected to integrate cooperative learning into their teaching practices in order to align with national educational objectives and to prepare competent teachers.

Nevertheless, personal observations and prior experiences suggest that many instructors continue to rely on traditional teaching strategies, leaving cooperative learning approaches largely unused. To bridge this gap, the current study examines the role of CL on learners' academic performance. Additionally, the study provides valuable insights into students' perceptions of cooperative learning and its impact on their learning experiences.

Accordingly, the present study was guided by the following fundamental research questions:

1. How do students perceive and respond to cooperative learning?
2. Does the use of a cooperative learning strategy produce statistically significant improvements in students' academic performance?

1.2 Literature Review

Basic concepts of CL

Scholars have provided various definitions of cooperative learning (CL), though most share common themes with only slight variations. Cooperative learning should not be confused with simple group work. Rather, it involves structured collaboration where students actively assist one another in achieving shared goals.

As Jacobs (1997), cited in Tina (2014), pointed out, CL is more than just grouping students and assigning a task. It is an instructional tool through which teachers promote mutual assistance and ensure active participation of all members, giving each student the responsibility of supporting their peers.

Wilkinson (1994), as referenced in Bolukbas (2011), explained that under cooperative learning, the attainment of individual goals depends on group general success. Consequently, students who wish to succeed must also support their teammates. This structure enables advanced learners to assist slower ones, ensuring that all members strive to improve both individually and collectively, since group success depends on each person's contribution.

Similarly, Kagan and Kagan (1998), cited in Berhanu (2016), described CL as process of structured peer-interaction collaboration emphasized, positive relationships, active engagement, equal participation, and equal status among learners. This method can be applied across subjects, including languages, mathematics, and social sciences. Ogunleye (2011), cited in Berhanu (2016), further defined it as a system where learners pursue shared academic goals collaboratively, rather than competing or working in isolation. Despite differences in wording, these definitions converge on the central principle of working together and helping one another.

Benefits of using Cooperative learning (CL) on academic performance

Beyond its definition, numerous advantages are linked to the application of cooperative learning in classroom instruction across grade levels. Researchers widely argue that CL is more effective than competitive or individualistic learning. Some of the key benefits include:

(A). ***Learners can improve their social skills*****:** With in real-world settings, individuals often need to collaborate within families, workplaces, and communities for mutual benefit. Yet, schools frequently prepare students to compete rather than cooperate, fostering a mindset where others' failure enhances one's own success. Cooperative learning reverses this by cultivating interpersonal skills and promoting group-based achievements. Freeman (2000), cited in Kefale (2015), emphasized that CL encourages collaboration instead of competition. Johnson and Johnson (1990), as referenced in Odagboyi and Kreni (2017), essential social skills fostered in CL include effective communication, encouraging peers, constructive feedback, critical questioning, and maintaining group focus.

(B). ***Instruction can be tailored more effectively to meet individual learners' needs*****:** CL allows for tailored support, as students can receive help not only from teachers but also from their peers. Long and Porter (1985), cited in Kefale (2015), observed that peer assistance benefits both the learner receiving help and the one providing it. Similarly, Farivar and Webb (1994), cited in Kefale (2015), argued that helping others enhances the academic outcomes of the helper as well. Brumfit (1984), cited in Berhanu (2016), also noted that small groups enable learners to progress at their own levels, offering more individualized instruction compared to whole-class setting.

(C). ***Anxiety can decrease*****:** Students are often nervous when speaking before an entire class. However, smaller groups provide a less intimidating environment. Representing a group in class discussions can also ease pressure, since responsibility is shared. Long and Porter (1985), cited in Kefale (2015), and Brown (2001), cited in Berhanu (2016), both confirmed that small-group activities create greater security and confidence for students.

(D). ***Positive attitude and Motivation towards class can increase*****:** Because CL promotes student-centered interaction, it allows communication to occur at a pace suited to group members' understanding. Unlike traditional classes, where the pace may be too fast for some and too slow for others, students in CL groups adjust to one another's needs. McKernan (1996), cited in Kefale (2015), highlighted that this cooperative atmosphere fosters encouragement, emotional bonds, motivation, and a more positive outlook toward learning.

Students' attitude towards Cooperative Learning

Attitude is a critical factor in learning. As Emina (1986), cited in Odagboyi and Kreni (2017), observed, attitudes shape motivation in education, including CL. Teachers must engage learners' interest and ensure that the cultivation of positive attitudes is deliberately planned and integrated into both the curriculum and daily learning activities.

Tina (2014) reported that 75% of students expressed favorable attitudes toward CL, noting that it increased their motivation to participate. Similarly, Burden (2004), as referenced in Hagose (2012), reported that learners who hold positive attitudes are more likely to be strongly motivated to attain their academic objectives. Fahad (2009) also demonstrated that many students view CL as essential in improving retention and that they are generally effective in participating when CL is used. These findings suggest that attitudes toward cooperative learning significantly influence its success in classrooms.

1.3 Theoretical model of the study

Although different models of CL exist, the current study employed the Student Teams Achievement Division (STAD) model. STAD is a collaborative learning method developed by Robert Slavin and colleagues at Johns Hopkins University. As explained by Innovative Learning (2009), cited in Monchai and Sanit (2013), STAD groups students of mixed ability, gender, and background into teams of four or five. The teacher presents a lesson, after which team members work together to ensure understanding of the material. Later, students take individual quizzes without group assistance, and their marks are linked to their previous mean score. Marks are given based on individual improvement, thereby motivating students to help each other learn.

Keramati (2009), cited in Monchai and Sanit (2013), conducted a study on physics students and found that those taught using STAD achieved much better than other groups taught through conventional methods. This supports the argument that CL, and STAD in particular, enhances academic performance compared to traditional approaches.

1.4 Study Objectives

General Objective

To examine the effects of cooperative learning strategies on academic achievement and students' attitudes towards cooperative learning at Dilla College of Teacher Education first-year mathematics department students.

Specific Objectives of the Study

More specifically, the present study was proposed:

1. To evaluate students' attitude towards cooperative learning strategies
2. To analyze whether or not cooperative learning strategies significantly affect the academic achievement of students

2 Materials and Methods

In this research, a pre-test and post-test quasi-experimental design was employed, aligning with a quantitative approach. Two groups were involved in the experiment. Students were randomly assigned to different teaching methods: the control group was taught using the independent learner (IL) or traditional method, while the experimental group was instructed through the cooperative discussion group (CDG), specifically using the Student Team Achievement Division (STAD) model. In the CDG, one high-achieving student facilitated learning for peers of varying performance levels. As highlighted in a study by Mattingly and VanSickle (1991), cited in Molla and Muche (2018), the cooperative learning achievement division (CLAD) model is among the most effective instructional strategies. In CLAD, students are grouped based on their performance levels (high, medium, and low achievers) and are held individually accountable for their contributions. For the success of the group, every individual must play their role responsibly.

Accordingly, in this study, the experimental group received instruction through cooperative learning for eight weeks, while the control group was taught using the conventional lecture method. The subject matter covered was general biology, specifically focusing on the central nervous system unit, which

was delivered using the cooperative learning approach.

2.1 Population of the Study

The study was conducted at Dilla College of Teacher Education, Dilla, Ethiopia, between March 2009 and May 2010 E.C. The target population consisted of first-year mathematics department students.

According to data from the college registrar's office, the total number of first-year mathematics students was 77, including 66 males and 11 females.

2.2 Sample and Sampling Techniques

The entire population of 77 students participated in the study. Using simple random assignments, students grouped into two: 1st class (n1 = 38) was assigned as the experimental-group, and 2nd class (n2 = 39) used as the control-group. Both groups were mixed in terms of gender, achievement levels, ethnicity, as well as language backgrounds, reflecting the diversity of the student body.

2.3 Data Collection Methods

An achievement test containing 50 items was administered to measure a student's achievement in a general biology course to conduct a post-test after treatment. All questions were objective type items, including true or false items, multiple choice items, and matching items. The time allowed was 50 minutes, and each item was allocated 1 mark. The maximum score for the achievement test was out of 50. The questions were used to assess a learner's performance before treatment and to measure the student's achievement after treatment. The content validity of the test items was checked by the researcher before the examination. To test their validity and reliability, the items were cross-checked and reviewed by biology and measurement and evaluation expert instructors. Thus, the validity of the test item was confirmed as valid as it could measure what it was planned to measure. The questioners, which were adapted from Berhanu (2016) by the current researchers, were also used to evaluate the attitudes of students towards cooperative learning strategies. It contains 14 items, and the validity was measured using Cronbach's coefficient alpha and the result of the test was.83.

2.4 Methods of Data Analysis

Data analysis followed a quantitative approach. Responses were coded numerically and organized for entry into SPSS version 21. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe students' attitudes toward cooperative learning.

Inferential statistics, specifically the paired sample t-test, were used to comparison the mean scores post-test and pre-test of the experimental-group and control-group. This allowed for testing whether differences in achievement between groups were significant statistically.

3 Results

The primary aim of this research was to examine the impact of cooperative learning strategies on both the academic performance and attitudes toward cooperative learning among first-year mathematics students at Dilla College of Teacher Education. In doing so, findings secured via quantitative methodologies are presented as follows:

As presented in Table 1, students' attitudes toward cooperative learning were examined using 14 items. The findings indicate that learners generally expressed positive views about cooperative learning, with 74% strongly agreeing and 22.1% agreeing that it is beneficial (overall mean = 4.7). A large proportion of respondents also emphasized that cooperative

learning groups should be composed of students with varied abilities, as 50.6% strongly agreed and 35.1% agreed with this statement (mean = 4.3). Furthermore, the majority of students believed that cooperative learning contributes to enhancing self-esteem, with 45.5% strongly agreeing and 39% agreeing (mean = 4.2).

Table 1: Results on students' attitude towards cooperative learning

No	Items on Attitude towards CL	F &%	5	4	3	2	1	Total	Mean
1	I think cooperative learning is advantageous for students' learning.	F	57	17	2	0	1	77	4.7
		%	74	22.1	2.6	0	1.3	100	
2	I think group members in cooperative learning should be heterogeneous in ability	F	39	27	8	3	0	77	4.3
		%	50.6	35.1	10.4	3.9	0	100	
3	Cooperative learning improves students self esteem.	F	35	30	6	4	2	77	4.2
		%	45.5	39	7.8	5.2	2.6	100	
4	Cooperative learning increases students' productivity	F	42	26	6	3	0	77	4.4
		%	54.5	33.8	7.8	3.9	0	100	
5	Cooperative learning improves respect of others opinions among students.	F	28	41	7	0	1	77	4.2
		%	36.4	53.2	9.1	0	1.3	100	
6	Cooperative learning affects students' academic achievement positively	F	37	11	10	13	6	77	3.8
		%	48.1	14.3	13	16.9	7.8	100	
7	Cooperative learning facilitates students to use higher level thinking strategies.	F	41	25	9	0	2	77	4.3
		%	53.2	32.5	11.7	0	2.6	100	
8	Cooperative learning encourages students to create new ideas	F	35	33	6	2	1	77	4.4
		%	45.5	42.9	7.8	2.6	1.3	100	
9	In cooperative learning, group members should not be formed based on friendship.	F	34	28	4	6	5	77	4.1
		%	44.2	36.4	5.2	7.8	6.5	100	
10	Cooperative learning is important both for students and teachers.	F	37	26	5	6	3	77	4.1
		%	48.1	33.8	6.5	7.8	3.9	100	
11	I think students should know the essential elements of cooperative learning for successful learning.	F	34	33	7	2	1	77	4.3
		%	44.2	42.9	9.1	2.6	1.3	100	
12	Cooperative learning is a valuable instructional approach.	F	34	33	7	2	1	77	4.3
		%	44.2	42.9	9.1	2.6	1.3	100	
13	In cooperative learning positive interdependence among group members ensures effective learning.	F	32	29	9	5	2	77	4.1
		%	41.6	37.7	11.7	6.5	2.6	100	
14	I think cooperative learning makes students responsible for their learning	F	48	20	4	3	2	77	4.4
		%	62.3	26	5.2	3.9	2.6	100	
	Total Mean								4.3

Similarly, many participants highlighted that cooperative learning boosts productivity, with 54.5% strongly agreeing and 33.8% agreeing (mean = 4.4). Slightly more than half of the respondents indicated that cooperative learning positively influences academic achievement, with 48.1% strongly agreeing and 14.3% agreeing (mean = 3.8). In addition, 53.2% strongly agreed and 32.5% agreed that cooperative learning enables students to apply higher-order thinking strategies (mean = 4.3).

The data also reveal that most respondents considered cooperative learning important for both students and teachers, with 48.1% strongly agreeing and 33.8% agreeing (mean = 4.1). A significant number of students also believed that teachers should be knowledgeable about the essential elements of cooperative learning in order to ensure its successful application, with 44.2% strongly agreeing and 42.9% agreeing (mean = 4.3). Likewise, a majority of participants perceived cooperative learning as a valuable instructional method, with 44.2% strongly agreeing and 42.9% agreeing (mean = 4.3). Finally, most respondents affirmed that cooperative learning promotes student responsibility for their own learning, with 62.3% strongly agreeing and 26% agreeing (mean = 4.4).

Taken together, the responses suggest that students generally maintain a favorable attitude toward cooperative learning. The overall mean score of 4.3, which approximates the "Agree" category, reinforces the conclusion that learners have positive perspectives, inclinations, and tendencies toward cooperative learning.

The paired t test shows that there was no significant difference in general biology pre-test scores (P =.31) between the experimental group (M = 28.51, SD = 8.1) and the control group (M = 26.44, SD = 9.7). The magnitude of the difference in the means (mean difference = 2.07). This implied that the academic status of the learners in both groups was highly comparable before exposing them to different teaching methods.

Table 2: Paired t-test result on pre-test achievement means scores for the experimental and control group

Study Group	N	Mean	SD	Std. Error	t-value	df	p-value
Experimental	38	28.51	8.1	1.38	7.358	37.5	.31
Control	39	26.44	9.7	1.52			

Sig. level p< 0.05

A paired t-test was employed to compare the mean post-test scores of the control and experimental groups after eight weeks of treatments. There was a significant difference in mean test scores between the two groups of participants, i.e., the t statistic, t = 9.358 and p =.003 at the p 0.05 level of significance, two-tailed with the experimental group (Mean = 37.26, SD = 6.2) scoring higher than the control group (Mean = 26.13, SD = 4.1). The magnitude of the differences in the means (mean difference = 11.13) The results confirmed that the experimental group who had engaged in learning through cooperative learning produced a higher overall improvement in academic scores on the general biology post-test. This means that working cooperatively has significant effects on academic achievement scores in general and test scores in general biology courses in particular.

Table 3: Paired t-test result on post-test achievement means scores of the experimental and control group

Study Group	N	Mean	SD	Std. Error	t-Value	df	p-value
Experimental	38	37.26	6.2	1.00474	9.358	37	.003
Control	39	26.13	4.1	0.64907			

Sig. level p< 0.05

4 Discussions

The findings of this study indicate that students hold a generally positive attitude toward cooperative learning. Specifically, the overall mean score for attitude-related items was 4.3, reflecting a favorable perception. As outlined in the analysis section, this high mean value demonstrates that participants view

cooperative learning in a positive light. Consequently, it can be concluded that the respondents' overall attitude toward cooperative learning was encouraging in this context.

These results align with the studies of Mekonnen (2011) and Hagose (2012), which revealed that both teachers' and students' perceptions and attitudes significantly influence the successful adoption of new instructional approaches.

Moreover, the results showed that students who were taught using cooperative learning strategies achieved significantly higher post-test scores compared to those taught through the conventional lecture-based method. This suggests that cooperative learning was more effective than the traditional approach in enhancing students' academic performance in biology.

For students who provided help to their peers, the cooperative learning environment also created opportunities to strengthen their own academic skills. This observation is consistent with Farivar and Webb (1994), cited in Kefale (2015), who argued that peer assistance benefits not only the learners being supported but also those offering the support.

Similarly, Brumfit (1984), cited in Berhanu (2016), emphasized that organizing students into small groups allows for greater individualization of instruction. Each group can work at its own capacity and pace, unlike a whole-class approach where instruction is delivered uniformly.

The present findings also reinforce the results of Slavin *et al*. (2014), who found that classroom strategies such as cooperative learning, science-reading integration, and the use of technological tools significantly improve science teaching and learning outcomes.

Overall, the results of this study confirm that students with no prior knowledge of biology content performed better when taught through cooperative learning compared to those taught using traditional lecture methods. The statistically significant difference ($p < 0.05$) in post-test scores between the groups highlights the effectiveness of cooperative learning in improving academic performance. These results are consistent with earlier research findings that have demonstrated the superiority of cooperative learning over conventional teaching methods.

5 Conclusion

The study demonstrated that the majority of students developed a positive attitude toward the use of cooperative learning in their educational experiences. In addition, the findings revealed that cooperative learning significantly enhanced academic achievement in general biology compared to the traditional lecture-based method. This confirms that cooperative learning fosters a deeper conceptual understanding and is more effective than conventional approaches. The results further showed a clear difference in academic performance between students taught through cooperative learning and those taught through traditional methods, indicating that cooperative learning is a suitable strategy for improving student outcomes in higher education institutions.

6 Recommendation

Given that cooperative learning was found to improve students' academic performance, it is strongly recommended as an alternative instructional method within the current educational reform efforts in Ethiopia. To ensure effective implementation, both instructors and students should receive appropriate training on how to apply cooperative learning strategies in classroom practice. Teachers are encouraged to recognize the value of cooperative learning and integrate it into their teaching-learning processes.

While the present study supports the effectiveness of cooperative learning, it is important to note that the sample size was limited to 77 participants. Fu-

ture studies should therefore involve larger groups of students to provide more comprehensive insights into the impact of cooperative learning, both within the institution studied and in schools across its catchment area.

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Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

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Managing the Ethiopian Education Systems amid Emergencies: Lessons from COVID-19 Global Crisis

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Abstract

This study, which was based on the Pragmatism research philosophy, sought to determine the extent to which the COVid-19 global pandemic had disrupted the school system in the SNNPR and the Oromia Regional States of Ethiopia. Both quantitative and qualitative data strands were collected simultaneously using an embedded research design. The surveys were completed by 268 teachers and 575 pupils in order to determine the level of disturbance and the strategies in place. In addition, 10 school principals and 10 Wereda education office heads took part in the interview. The study identified that the CoVID-19 global pandemic has significantly disrupted ($F=3.76829$, $P<0.05$) the education systems in the above two regions. The government's policies and tactics to avert the scenario were not properly executed at the grassroots level. As a result, in order to solve such an unusual educational crisis, this study developed an integrative model incorporating system variables, administrative variables, academic variables, and student variables. Therefore, this study recommends challenging 'reinventing the wheel' by applying diversifying teacher training practices, improving school-level technologies, and adapting emergency responsive education policies at the school level.

1 Introduction

There are multiple increasing risks to humanity's survival in today's globe, such as climate change, drought, and various diseases.Human life, however, continues to exist as a result of many interventions and responses to the threats listed above (Wilhite & Pulwarty, 2017; Butler, 2018; Bloom & Cadarette, 2019). This implies the world has to build a solid infrastructure that allows humans to adapt and respond to a wide range of dangers and crises, including the Novel Corona virus disease.

The Coronavirus pandemic has become a major threat to the global economy, health system, education, and other social services. Many governments were unable to respond to the pandemic as quickly as possible when it broke out. When the pandemic first broke out, many countries were unable to respond as swiftly as feasible. The pandemic's difficulty is exacerbated by the lack of a treatment, which is causing havoc on both developing and industrialized economies around the world. Even in terms of economic crises, scholars argue (Han *et al*., 2020; Yaya *et al*., 2020; World Economic Forum, 2020) that COVID-19 is the worst since the global financial crisis of 2008 when the world was struck by a severe recession followed by financial crises. The pandemic is recently causing severe

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crises in the United States, India, Brazil, France, and other countries of Europe and Africa (Sintema, 2020; CartaxoS *et al*., 2021). Aside from rising death tolls, the pandemic has had a global impact, resulting in higher unemployment rates, the closure of many businesses, and an increase in the number of poverty-stricken households, especially in developing countries (Miks & McIlwaine, 2020).

The pandemic has morphed into an education crisis as a result of these unprecedented challenges. Starting from the closure of schools, the pandemic has resulted in sudden disruption of the teaching-learning system (Aborode *et al*., 2020). Because of this, more than 1.5 billion of the world's students are forced to be out of their schools and stop their learning routines (Miks & McIlwaine, 2020; United Nations, 2020a). As Aborode *et al*. (2020) note out, unlike on other continents, this has resulted in African countries' education systems deteriorating, with 98 percent of kids unable to learn. This extraordinary disruption has been claimed to have spread across the continent, with COVID-19 causing school closures in practically every country in Eastern and Southern Africa. The closures of schools and universities are said to have impacted over 70% of the world's inhabitants (Khodr, 2020; UNICEF, 2020).

In addition to the closure of schools, the pandemic was making the pre-existing education disparities worse by reducing the opportunities for many of the most vulnerable population such as; children, youth, and adults, girls, refugees, persons with disabilities, and forcibly displaced persons – to continue their learning (United Nations, 2020b). Learning losses also threaten to extend beyond this generation and erase decades of progress, not least in support of girls and young women's educational access and retention (United Nations, 2020a). In certain nations, educational institutions were chosen as isolation centers amid the COVID-19 pandemic. As a result, several governments declared states of emergency to reduce the disease's spread as a means of immediate measure to mitigate the crises. Moreover, schools were closed, international flights were halted, corporate centers, marketplaces, and government bureaucracies were shut down in some cases at the very beginning of the spread of the pandemic (UNESCO, 2020; United Nations 2020a). Within the first several months after the pandemic's arrival, practically every country in the world took similar steps.

The Ethiopian government, cognizant of this deadly pandemic, has taken some measures to reduce the virus's impact after the first case was recorded on 13 March 2020. Despite the population's strong unwillingness to abide by health professionals' advice, international flights were limited; educational institutions were completely closed; transportation providers were forced to provide services reducing by half; many COVID 19 checkpoints were set up; and several marketplaces and business centers were partially closed (UNCDF, 2020; WHO, 2020; MoH-EPHI, 2020). The Ethiopian government also stated that efforts were made to help pupils by school principals and instructors, as well as through government radio broadcasts. Finally, in light of the COVID-19 outbreak that occurred throughout the academic year, an automatic promotion system was implemented for all school children (MoE, 2020).

The Ministry for Health (2020) and the World Health Organization (2020) proposed that schools could be reopened safely after the establishment of strict precautionary measures to prevent COVID-19 schools and their surroundings, given the long-term impact of school closures and their long-term implications. In this regard, it is reported that ensuring hygiene and safety, minimizing the class-student ratio, implementing half-day schooling, and supplying other COVID-19 standard facilities were some of the major precautionary measures suggested by the institutions. Following these initiatives, the teaching-learning process resumed after nine months of school closure (in November 2020) across the country (York *et al*., 2020).

Despite the reports on the extent to which the Ethiopian education system resumed, rethinking of delivery of the teaching-learning processes after the reopening of schools has paramount importance. It is, therefore, the researchers' belief that the relationship between the rhetoric statements discussed in the above sections and the current practices needs to be addressed through scientific investigations. To that end, this study seeks to assess issues about managing the Ethiopian Education System amid

COVID-19: the disruption, responses, and the way forward focusing on secondary schools of Oromia and SNNPR Regional states, as well as to propose alternative solutions for such crises. Grounded on this objective, the hypothesis was formulated to see if the level of school disruption and the responses affect their performance or not. Hence, the hypotheses were:

Null hypothesis (H_0) = COVID-19 does not disrupt the performance of the education system. The alternate hypothesis (H_1) = The school responses affected the performance of the education system.

2 Empirical Literature Review

2.1 Impact of COVID-19 Pandemic on Education

The corona virus pandemic has been significantly affecting not only human health but also the socio-economic development of countries across the world. It continues to affect people regardless of color, race, gender, ethnicity, or any other human identity. The educational sector appears to have been the most severely affected of all development sectors, necessitating more uncompromising mechanisms for resolution (Fegert *et al*., 2020; World Economic Forum, 2020; Han *et al*., 2020). However, this has not been true for all countries in terms of its consequences, which have disproportionately impacted low-income countries (United Nations, 2020a). COVID-19 has a variety of effects on educational systems.

The first manifestation of the COVID-19's impact was school closure. The pandemic has resulted in the total closure of schools in over 200 countries around the world, with "91.4 percent of the total number of enrolled learners in these countries momentarily required out of school" (Aborode *et al*., 2020:7). As a result, more than 1.6 billion students were forced to stay at home to enforce social distancing to de-escalate the spread of the pandemic. Except for the consequences, regardless of the continental and regional disparities in economic growth and infrastructure development, the school closure and staying at home were arguably the same across the world (Miks & McIlwaine, 2020; United Nations, 2020a). Furthermore, Aborode *et al*. (2020) stated that, unlikely in Africa, one of the continents whose educational systems have been typically affected by this deadly pandemic, as more than 98 percent of teaching and learning was disrupted due to country-wide lockdown. It is also clear that this continent is a home for 98 percent of out-of-school children as a result of the pandemic (Aborode *et al*., 2020). This unprecedented disruption has been reported to have been replicated across the globe and the region, with COVID-19 closing of schools in 20 of 21 countries in Eastern and Southern Africa.

Secondly, the pandemic exacerbates pre-existing educational disparities by limiting opportunities for the most vulnerable groups with diversified identities to continue their education (United Nations, 2020b). Learning losses also threaten to outlast this generation and undo decades of progress, particularly in support of girls and young women's educational access and retention (United Nations, 2020:2a).

Ethiopia, as one of the Sub-Saharan African countries, is forced to share a portion of this global shock to education systems caused by the COVID-19 pandemic. The closure of schools, with a 3.4 percent share of GDP (Planning and Development Commission, 2020), has disrupted the teaching-learning processes from preschool to tertiary levels, leaving over 26 million students without any learning options for about nine months as a result of the sudden closure of schools across the country (World Bank, 2020). More than 700,000 teachers and school administration employees were partially out of work since the schools were closed in the mid-March" (Khodr, 2020). One of the coping mechanisms was providing devices and internet access to those who consider remote learning. However, the most vulnerable students were also those with the least access to the hardware and connectivity needed for distance learning solutions implemented during school closures (United Nations, 2020b).

2.2 Responses to the Crises

The pandemic has compelled the world to take multifaceted measures to keep people safe while also resuming education systems. The World Health Organization issued updated guidelines on how to mitigate the spread of the pandemic in response

to the virus's outbreak (WHO, 2020). Following that, many countries took measures in addition to the WHO guidelines to control the disease's spread. According to Inter Press Services, most of the world was locked down, and people were urged to work from home. Some countries like the United Kingdom (Savage & Bachelor, 2020) and Germany (Chazan, 2020) even used military force to enforce coronavirus restrictions and reduce the number of infected people (IPS, 2020).

Within the first six months, one of the reactive mechanisms was to keep social distancing to minimize the spread of the COVID-19 pandemic during the closure of schools. The United States is one of those countries where many schools have been closed (Asgari, 2020). The closure of schools in Brazil is necessary, given that the country lost more than 4000 people within a single day due to the Coronavirus. The reactions of other countries including India (Maria & Lívia 2021), Australia (Michael, 2020), and some African countries including Egypt, South Africa (Aborode *et al*., 2020), and Ethiopia (Mengistie, 2020:572) to the pandemic are similar. The closure of schools around the world was part of a global response to mitigate the spread of COVID-19.

To meet the learning needs of their students during the outbreak of the pandemic, almost the entire developed world has shifted from face-to-face learning to remote learning options (Joshi *et al*., 2020; Asgari, 2020; Maria & Lívia, 2021; Joshi *et al*., 2020; Kvalsvig & Baker, 2021). The remote learning mechanism, as a part and parcel of this endeavor, includes the distribution of instructional materials (curriculums, worksheets, and printouts), radio education, educational television, and online instructional resources (Onyema *et al*., 2020). The following table summarizes the experiences of some countries in terms of COVID-19 responses to address the education needs of their school-age community.

Table 1: Education Responses to the pandemic in some Countries

Country	Case-wise level (as categorized by CDC 2021)	No. of cases	Education responses
United States	High	33,971,207	Massive schools closure Access for various remote learning platforms (Asgari, 2020)
India	High	27,233,249	Massive School Closure Access to continuous education; child protection & training on Gender-Based Violence (GBV) (Joshi *et al*., 2020)
Brazil	High	16,275,440	Massive school closure Online support for parents and students Self-paced formalized lessons About 40% of schools deliver online instruction (Maria & Lívia 2021)

These countries were chosen based on the Center for Disease Control (CDC) ranking list and the number of coronavirus cases. Three high-ranking countries and two low-ranking countries were chosen to evaluate their educational responses during the outbreak. From Table 2, it is important to draw a lesson that, many developed countries like the US are well enough in taking COVID-19 standard responses in their education systems. On the contrary, developing countries such as Morocco, Senegal, and Ethiopia (Mengistie, 2020; Desalegn *et al*., 2021; Chowdhury & Jomo, 2020) are among the few countries that attempting to launch a remote learning platform to increase access to distance teaching and learning resources despite its contention on accessibility.

3 Methodology

3.1 Sampling

As a sample, the South Nations and Nationalities People's Region (SNNPR) and Ethiopia's Oromia Regional states were studied. These two regions account for more than half of the country's population. Because Oromia regional state is larger in terms of area and population, two zones were taken from SNNPR and three from Oromia regional state.Wolaita and Gedeo zones were included in the sample from SNNPR whereas West Guji, West Arsi, and South West Shoa zones were included from Oromia regional state using a simple random sampling technique. These zones fairly represent the two regions as they have different geographical settings. Two schools (one from the Urban zone and the other from the Rural zone) were purposefully chosen from each zone based on their student demographics. A total of 268 teachers and 575 students were proportionally selected from these schools. The interview also included Wereda education office heads and school principals from the sample schools.

3.2 Research Design

This study, which was based on the Pragmatism research philosophy, used a mixed research approach in which quantitative and qualitative data results were integrated to provide a better understanding of the current CoVD-19 global epidemic. Consequently, embedded design, in which the two data sets were collected simultaneously and analyzed separately, finally integrated with the discussion section was employed. As noted by Creswell (2012:544), this is a Quantitative (QUAN) dominated research supported by the qualitative (Qual.) data to see the convergence or divergence of the two data strands.

3.3 The Data

In this study, both quantitative and qualitative data were utilized. A survey questionnaire was used to obtain quantitative data from teachers (n = 268) and students (n = 575). In addition, data was gathered through interviews with sample school principals and Wereda education office heads.

3.4 Data Analysis

The quantitative data was examined using descriptive and inferential statistics in the study (frequency, mean, standard deviations, and multiple regression model). The pairwise Granger's test for casual correlations between these two variables was also used to evaluate hypotheses (level of school disruption and their performance). In addition, the qualitative data was thematically examined depending on the question's purpose to see where the data diverged and where it converged with the quantitative data.

3.5 Instrument validity, Reliability, and Ethics

Content validity of the instruments was maintained using two experts from the psychology department and two from the Department of Educational Planning and Management (EdPM), Dilla University, in which their valuable comments were included before administering the instruments. In addition, the reliability of the instruments was measured using Cronbach's Alpha to see the internal consistency of the instruments. Finally, all ethical principles were adhered to by receiving an ethical clearance letter from the Dilla University Research Ethics and Review Board Committee (DU RERB).

4 Results and Discussion

4.1 Results

4.1.1. Practices of school activities amid Covid-19 as measured by its level of Disruption

The level of disruption in the system is used to measure the practices of school activities during COVID-19 in this phase of the study.To investigate the actual practice of the education system during the outbreak of the pandemic, lists of essential variables were considered. The extent of disruption in school activities is summarized in Table 2.

Table 2: Level of disruptions of school activities amid COVID-19

S. No.	Variables	$\bar{X}$	SD	Prob.
1	The level of teaching-learning process	4.09	1.18	0.00*
2	Provision of educational materials	4.02	1.05	0.005*
3	The level of motivation	4.01	1.07	0.09*
4	The level of assessment practices	4.14	1.03	0.00*
5	The degree of monitoring of the teaching-learning process	3.97	1.07	0.016*
6	The level of academic performance of students	3.88	0.97	0.025*
7	The condition of school calendar	4.11	1.06	0.031*

Mean values ranging from 1-2.49 indicates insignificant disruption in the system, 2.5-3.49 moderate disruption, > 3.50 shows a high disruption

In the Ethiopian education system, almost all school activities were disrupted as a result of school closures due to the outbreak of the COVID-19 pandemic across the globe (see Table 2). More specifically, for the variables treated in the study, the mean value (= 4.09, SD = 1.18) indicates the level of face-to-face teaching and learning has been highly disrupted during the school closure. Similarly, the mean values (=4.02, SD=1.05; =4.01, SD=1.07; =4.14, SD=1.03; =3.97, SD=1.07; =3.88, SD=.97; =4.11, SD=1.06) indicate the school closure as a result of the CVID-19 pandemic highly disrupted the provision of instructional materials, the level of students' and teachers' motivation, the level of assessment practices, the degree of monitoring of the teaching-learning process, the level of academic performance of students and the condition of the school calendar, respectively. As one can observe from the figures, the COVID-19 pandemic significantly disrupted the practices of the education system of the country as $P < 0.05$ in all cases.

Concerning the level of disruption, participants were interviewed about the extent to which the pandemic disrupted the teaching and learning process in general in their respective schools. Participants 3, 5, and 6 from West Shoa, Wolaita, and Gedeo Zones respectively described how the pandemic mainly disrupted the system of education during the school closure period. More specifically, participant 5 vowed the issue as:

"*... The teaching and learning processes in my school during the school closure were highly disrupted as many of us were panicking about the situation. Even though the officials declared the process of teaching and learning needed to be sustained with the online modality, by then, most school teachers and students were less aware of managing online instruction*".

Besides, participant #2 from the Gedeo zone explained the situation of schooling during the crisis as follows;

"*To be frank, I am very much ashamed to tell you that our students had not acquired all the required competencies which they were supposed to possess. They are all promoted to the next grade without taking appropriate assessments and regardless of their academic competencies. This, for sure, will result in poor scores in the upcoming national examinations for which our students will sit. So, I'd say the pandemic has significantly distorted the system in which the effects could be manifested sooner or later*".

Therefore, the study participants unanimously agreed that the COVID-19 global pandemic has significantly disrupted the Ethiopian education system.

Hypothesis Testing

COVID-19 has been assumed to have no effect on the educational system's performance from the start. The researchers used a paired Granger's test for casual correlations between these two variables, as shown in table 3, to determine whether the pandemic had an impact on educational achievement and to accept or reject the null hypothesis.

Table 3: Null hypothesis testing (H_0)

Null Hypothesis (H_0)	**F-Statistic**	**Prob.**
COVID-19 does not disrupt the performance of the education system	3.76829	0.0265*

**Indicates the rejection of null hypothesis at p < 0.05 level of significance*

The above table shows the casual relationship between COVID-19 disruptions and the practices of school performance. As can be observed, the probability value (p = 0.2625, 0.05) implies the rejection of the null hypothesis. From this, it is possible to infer that the COVID-19 pandemic significantly disrupted the performance of the education system, and this supports the results of the descriptive evidence in Table 2 and the interview results presented.

Table 4: The long- and short-range effects of COVID-19 on the education system

Variables	**Mean**	**SD**
Content incompletion	4.23	1.02
Assessment inadequacy	4.03	1.13
Students' Dropout	3.94	1.19
Grade Repetition	2.22	1.47
Emotional and Behavioral Disorders	3.86	1.23
Withdrawal	3.13	1.46
Unplanned marriage	3.65	1.50
Loss of jobs	3.21	1.42
Teachers' Turnover	3.41	1.23

Table 4 shows the short and long-term effects of covid-19 on the education system. The mean value (x = 4.23, SD = 1.02) shows that respondents agreed on the incompleteness of courses. Similarly, the mean score (x = 4.03, SD = 1.13) indicates that learning assessments were inadequate. In the same fashion, mean values (x = 3.94, SD = 1.19, x = 3.86, SD = 1.23, x = 3.65, SD = 1.50) confirmed that the COVID-19 pandemic has resulted in school dropouts, exposed students to emotional and behavioral disorders, and led students to unplanned marriages, respectively. On the other hand, the mean value (x = 2.22, SD = 1.47) shows the pandemic doesn't result in grade repetitions. This implies that, regardless of the disruptions in the teaching and learning process across the education system (see table 2), no student was left behind to repeat a given grade level. However, no evidence was found to indicate whether the global crisis caused the turnover of teachers, withdrawal of students from the system, and loss of jobs or not.

4.1.2 School Responses to COVID-19 Pandemic

Under this section of the study, the researchers took a look at the responses of the schools to the pandemic situation to maintain the functioning of the education system. A total of twenty variables were employed to consider the responses made in a real sense. The lists of variables were further grouped into three grand variables for the sake of ease of analysis and interpretation of results. To this end, variables including adequate preparation to face the crisis, training of teachers to manage online instruction, the adequacy of hygiene and sanitation supply, the existence of an emergency treatment center, the recruitment of additional teachers as per the government's directive, the construction of additional classrooms, and service delivery as per the standard of the COVID-19 protocol were teamed up under the administrative response variable. Another variable considered grand was the academic response variable. Under this category,

there existed specific academic indicators such as the provision of adequate online instruction, the distribution of materials to students, the existence and adequacy of online tutorials, and the adequacy of online assessment offered. Indicators that most probably resembled structural issues were considered and classified under system response. These concerns were a response subject to being made system-wide, not at a specific school level. The adaptive nature of the curriculum thought to be in such a crisis; classroom size to maintain social distance; class to student ratio was as per the government's directive; the adjustment of the school calendar; and the introduction of a multiple shift system are examples of such variables. The last theme was the variable branded as the student's response. Whether most students had access to online services at home and the extent to which students were familiar with managing online courses were grouped into this sub-theme.

Table 5: School Response (SD in the parenthesis)

Variables	Academic Response	Administrative Response	System Response	Student's Response
Mean	2.00	2.27	2.77	1.80
	(1.20)	(0.95)	(0.87)	(1.13)

Table 5 shows the extent to which schools respond to the pandemic. For the sake of analysis, the variables were categorized into academic responses, administrative responses, system responses, and responses related to students. The mean scores of all variables (x = 2.00, SD = 1.20, x = 2.27, SD = 0.95, SD = 2.77, SD = 0.87, x = 1.08, SD = 1.13) revealed that the school's response to the pandemic was considered to be low. Just to be relative, the response from the system (structural activities) is far superior to any response made by the schools.

Key informants were interviewed on the condition by which the education system responded to the outbreak of the pandemic across the globe. Concerning the responses made, most informants confirmed that most activities related to the teaching-learning process were found to be performed at home with sets of tasks given by teachers, including worksheets and assignments. They also stressed the use of social media, such as telegrams, as a means of sharing materials and activities from teachers to students and vice versa. The interviewee, however, revealed that regardless of all the attempts made, the responses were not found to be tremendous in fulfilling all the learning requirements and standards. Exclusively, participant 1 from Southwest Shoa stated:

"*I am a principal in a relatively better school where infrastructure like internet access and personal hygiene materials is available. Because the internet is available in the school, teachers should be able to manage their classes. Most students were also urban dwellers whose families could afford such access. With these all-favourable situations, we were not able to manage the classes as they were supposed to be managed*".

From this, one can come to understand that the way schools respond to managing the process of teaching and learning during a crisis could be labeled as poor practice.

Participant 4 is from a rural school in the Gedeo Zone. He reported that "at least one or no attempt was made in response to sustain schooling during the pandemic, mainly when the schools had undergone a closure". The researchers led him to another question: why so? Why didn't you come up with a way to respond in such a way that educational activities, particularly teaching and learning activities, could be maintained and sustained? In response, not only this informant, but also many others, confirmed a lack of materials and resources to manage normally. On top of that, they didn't hide that almost all the school community, including school leadership, teachers, students, and other staff, lacked the required awareness and skills to deal with such crises.

From the above premises, it is valid to conclude that schools were lacking the required awareness and

skills to manage instruction online on the one hand, and the nonexistence of materials and resources that are imperative for digital learning on the other hand. Hence, one can dare say that because of these factors, the education system was found to be less responsive to sustaining schooling, mainly during the closure.

Table 6: Regression Result (prediction of response variables on school performance)

Dependent Variable: School performance during COVID-19			
Variable	**Coefficient**	**Std. Error**	**Prob.**
C	3.299752	0.352993	0.0000
Admin Responses	0.341852	0.178424	0.0583
Academic Responses	0.115712	0.119403	0.3349
System Responses	0.496154	0.157158	0.0021*
Students Response	0.055087	0.116274	0.6367
R-squared	0.119613		
Adjusted R-squared	0.084		

***Sig at $\alpha < 0.05$*

As the table shows (see Table 6), there was no statistical evidence that the effects of the academic, administrative, and student-related responses were significant on the school's performances as proxed by the students' academic performances. It is only the system response that significantly affects the performance of the education system with a p-value of ($p = 0.0021$). The adjusted R-squared ($r = 0.084$) also shows only 8% of the variations in school performance during the pandemic are associated with the responses made to the pandemic. This implies the responses have made an insignificant contribution.to the educational performance while the system was entangled with the global crisis.

Table 7: Alternate hypothesis testing (H_1)

Hypothesis:	F**-Statistic**	**Prob.**
The school responses affected the performance of the education system	1.92550	0.1513

Table 7 shows the relationship between the responses and the performance of the education system. As can be observed, the probability value ($p = 0.1513$, > 0.05) implies the rejection of the alternate hypothesis. From this, it is possible to infer that the responses made by the school system to the COVID-19 pandemic are insignificant in maintaining school performance.

4.2 Discussions

This study confirms that the COVID-19 pandemic had a significant impact on the country's education system. For example, the face-to-face teaching and learning process was halted for approximately ten months. As evidenced by hypothesis testing, the causal relationship between COVID-19 disruptions and school performance was found to be strong. The result implies that the null hypothesis is rejected with a probability of $F = 0.0265$, P 0.05. The qualitative results also concurred that there were disruptions in teaching-learning processes and most of the community members were panicked about the situation. Even though the new modality was declared, poor and remote communities were not able to perform it because of a lack of technological accessibility and skills. For these reasons, the students do not acquire all the required competencies that they are supposed to possess.

In this regard, this is similar to the study findings of Onyema *et al*. (2020) that found the pandemic has had a negative impact on the education systems of Sub-Saharan African countries. This manifests itself in a variety of ways, including learning disruptions, decreased access to educational facilities, teacher joblessness, and increased student debts. The Ethiopian education system was also experiencing the same fate as these countries in terms of disruption. Despite this, many educators and students in some Sub-Saharan African countries relied on technology to ensure continued learning online during the pandemic (Khodr, 2020; Aborode *et al*., 2020).

The regression analysis conducted also showed that the main effects of the pandemic on school performance are the incompleteness of courses to be taught, the inadequacy of learning assessments, and the large number of school dropouts. Furthermore, it was revealed that students were subjected to emotional and behavioural disorders and that their homestays led to unintended changes in their lives. However, it was clear that the pandemic did not result in grade repetitions. This means that, despite disruptions in the teaching and learning processes throughout the education system, no student was forced to repeat a grade level. Some of the interviewees also reported that there are some better schools, where infrastructures like internet connectivity and its devices are fairly available. Even though the school communities have technological infrastructure and all-favourable situations, they were not able to manage the classes as they were supposed to be managed. This finding is consistent with previous research, which found that students received limited school support during school closures (York *et al*., 2020), implying that schoo; ls were underperforming in terms of dealing with the disruption.

The impact of COVID-19 on the education system has persisted to the point where teaching and learning processes have resumed following the reopening of schools. Following this, students and teachers were unmotivated to teach and learn once the schools reopened. Furthermore, schools face a poor assessment and monitoring system for their students' performance, as well as an interrupted academic calendar. As a result, the education system of the country was forced to implement an automatic promotion mechanism for its students, with inadequate learning assessments. Previous research has also discovered that many schools lack the physical infrastructure to support this, such as fewer classrooms and insufficient hand-washing facilities (Tamirat, 2020; York *et al*., 2020).

In terms of dealing with crises after school reopening, the independent variables (school responses) were computed into three categories: systemic, administrative, and academic responses that contribute to crisis-resilient school systems. In this regard, it was found that school responses to the pandemic were deemed negligible. It is also reasonable to infer that the systemic response is far superior to any other response mechanisms implemented by schools, implying that the responsibility for responding to the emergency-led crisis seems solely left to the structural level of the government. This finding is similar to a previous study by the United Nations (2020a:37) that indicated"... in the absence of an effective education response, COVID-19 is likely to cause the greatest disruption in educational opportunities for Ethiopian children in a generation or more." Another study found that there was a significant learning loss among students as a result of the country's education system's lack of a rapid response plan (Belay, 2020).

Finally, the Ethiopian education system lacks established emergency management strategies for such unintended crises as the COVID-19 pandemic, as well as any other type of emergency incident. There is not even a single line that articulates an emergency response plan for education among the strategic directions of the existing education policy and the newly introduced education roadmap, which is why the entire face-to-face teaching-learning system encountered an obstacle for approximately nine months before schools reopened (MoE, 1994; 2017). This implies that there is a clear gap between the rhetoric and current practices.

It is, therefore, critical that the country's education system be informed with possible policy options for sustaining the teaching-learning process in the event of future crises. To that aim, the present researchers have been told that the outcomes of

the study will be utilized to establish an integrative model for crisis-resilient school systems across the country (See Figure 1).The model is grounded in response mechanisms such as systemic, administrative, and academic response mechanisms, as well as possible indicators for each category. The findings of previous studies have emphasized the importance of developing policy responses and implementing appropriate mechanisms to deal with such unforeseen crises in the future, which prioritize people and their rights in terms of education and other aspects of socioeconomic development (United Nations, 2020c; Ataguba, 2020; Cancedda *et al*., 2020; Babbar & Gupta, 2021).

4.3 The way forward to Crises Resilient School System

The synthesis of the variables in the study came up with the model, which is used to create a resilient school environment that can cope with various forms of crisis. A total of twenty (20) variables were categorized into three major constructs in responding to the crisis. System variables represent the general functioning of the school with the existing school set up to overcome the crisis. The existence of a platform for managing online courses, the existence of adequate classrooms, the creation of emergency treatment sections, room for adjusting the school calendar, and the introduction of multiple shift systems were considered. On the other hand, school leaders and other stakeholders are expected to take administrative measures for the smooth functioning of the teaching-learning process with minimum disruption. In this regard, the use of adaptive curriculum, the provision of adequate internet services, adequate preparation to keep sanitation, orientation to the school community, the creation of emergency treatment centers, recruitment of new teachers, building additional classrooms, and the provision of other standardized services as per the CoVID-19 protocols were supposed to be fulfilled. Similarly, to harness the academic performance of students, adequate offering of online courses, dispatching of teaching-learning materials, provision of online tutorials, students' motivation, and applying variable online assessment techniques were part of the academic variables. As shown in the picture, the interplay of these important criteria will decide the pandemic's successful aversion at a low cost.

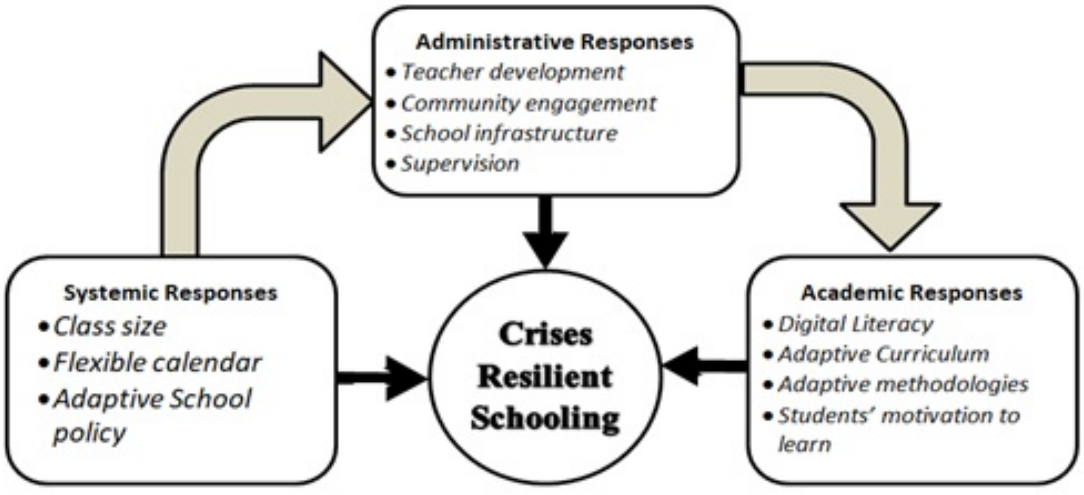

Figure 1: Integrative model for crises resilient school system

5 Conclusions

This study was an empirical analysis of managing the Ethiopian education system amid the COVID-19 global crisis. More specifically, it focuses on the level of disruption, impacts, and responses made to sustain the system. As the study identified, all school activities, mainly tasks related to the teaching and learning process, were highly disrupted by the pandemic. The situation was more likely to occur during the periods of the school's closure.

Schooling during these times was highly disrupted, implying that students were not adequately taught, assessed, and simply promoted to the next grade, providing them with the minimum learning competencies by compromising quality education. It also has a strong implication that the schooling system that Ethiopia is experiencing is not resilient to such crises that, perhaps, arise at one or another time. As stipulated explicitly, the pandemic, mainly the closure, has made students drop out of the system and exposed them to different social engagements, resulting in adverse consequences like marriage and pregnancy, since the school system has no or little experience of letting students actively engage in the process of teaching and learning. This means that the disruption has caused significant disruptions in both short- and long-term time courses.

Another important variable dealt with in this study is the way schools were managed to sustain schooling, which we call the study response to COVID-19. The study tried to look into the responses to the pandemic from a system perspective: academic responses, administrative and different student-related responses. The result revealed that only the systemic responses have made significant contributions to the school's performance during the pandemic. On the other hand, the remaining grand variables have made insignificant contributions to the performance of schooling in the education system. In a nutshell, the responses made to sustain the education system were found to be less significant. Regardless of the rhetoric, in which the government has claimed that adequate responses have been made both at the systemic and grass-root levels, the reality shown in this study implies that strategies set by the government to avert the situation were not adequately implemented at grass-root levels. By implication, the country was undergone with inadequate education strategies that are supposed to respond to the emergency contexts.

6 Recommendations

This study confirmed that the COVID-19 global pandemic has seriously disrupted the Ethiopian education system. Alternative strategies to mitigate the effects of the pandemic were not adequately implemented at the grass-root level-schools. The disruption, on the other hand, provided a lesson on the need for a paradigm shift in traditional teaching methods, infrastructure development, teacher training, and the implementation of multiple emergency response policy alternatives.

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Conflict of Interest

This research was entirely funded by Dilla University. However, the university will not take any responsibility for the results beyond reporting purposes. All the authors are affiliated with Dilla University as teaching and research staff. For publication purposes, we all, as group members, confirm that we have thoroughly read and approved the manuscript to be published in this journal.

Ethical Approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

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Students with Disabilities Inclusion in Higher Education: Forgotten Issue in Disability Literatures

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Abstract

The purpose of this study was to look into the inclusion of disabled students in higher education institutions. A quantitative technique was utilized in conjunction with a cross-sectional survey design. A total of 246 SWDs were chosen from five Ethiopian public HEIs using a stratified proportionate random sampling technique. Frequency, percentage, mean, standard deviation, correlation, one-sample t-test, multiple regressions, Independent samples t-test, and One Way ANOVA were used to examine data acquired through a college student experience questionnaire. The pupils were found to be enrolled in the institutions, according to the findings. When compared to male students, female students scored higher on inclusion. Pupils who were blind were more included than students who were deaf or had physical limitations. However, the pupils' inclusion does not seem to be affected by their year level. The conclusion is that, despite the fact that inclusion has been discussed in disability literature for a long time, there is no scale to quantify it in higher education. As a result, the advice is that a scale be devised, and that males who are deaf and have physical limitations, for example, be assisted by institutions.

1 Introduction

1.1 Background of the Study

In Ethiopia, the number of public higher educational institutions (HEIs) has expanded from 11 to 45 in the recent few years. Undergraduate enrollment went from 447,693 in 2010/11 to 593,571 in 2013/14; masters enrollment increased from 10, 211 in 2007/08 to 58, 286 in 2013/14; and third-degree enrollment increased from a low base of only 258 in 2007/08 to 3169 in 2014 (Ministry of Education, 2015:24).

However, the number of students with disabilities (SWDs) at higher education institutions (HEIs) remains low (Tirussew *et al*., 2014; Ahmed, 2016). Those who have enrolled in HEIs are facing a variety of problems, ranging from academic to social to physical. On instance, according to Yared (2008), Ethiopian HEIs have no defined policy for SWDs, and the available provision, if any, is minimal.

Furthermore, Almaz (2011) found that Ethiopian HEI students exhibit a negative attitude toward students with visible disability in her research. Birhanu (2015) found that SWDs face a lack of understanding regarding disability, instructor and student misconceptions, negative attitudes, and a lack of effective training materials in his study of three well experienced HEIs (Haramaya, Ad-

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dis Ababa, and Adama Science and Technology universities). Abebe (2017) conducted a comparison research with Kenya and Tanzania, visiting ten technical and vocational education and training (TVET) colleges in five areas of Ethiopia to assess the availability of policy and legal frameworks, as well as the training packages provided to SWDs. He discovered that the institutional training of SWDs was inadequate due to a lack of proper strategy, priority, and implementation, as well as a shortage of facilities and qualified human resources. Yohannes (2015) carried out a qualitative case study at Hawassa and Mekelle Universities to examine the experiences of students with visual impairments (SWVIs). The study found that these students encountered challenges such as being placed in departments unrelated to their interests, rigid curricula, non-inclusive assessment methods, and unsupportive learning and institutional environments.

Ethiopia, on the other hand, aspires to and is determined to have an inclusive society in all of its growth and development domains in the future (Ministry of Labor and Social Affairs, 2012, p.IV). The aforementioned studies, on the other hand, made no attempt to record whether SWDs were included or not in the institutions using a standardized scale; instead, they chose to describe only problems, despite they were informative about the condition of SWDs in the institutions. As a result, a study of this nature in the country is worthwhile.

1.2 2. Statement of the Problem

The majority of studies on SWDs at HEIs, both internationally and locally, focus on the diverse kinds of problems (in academic, social, and physical areas) that students face in the institutions. As we can see in the survey of related literature section on SWDs' "inclusion" in HEIs, research tended to focus on relaying qualitative experiences as inclusion demonstrations. Even yet, they place a greater emphasis on academics and less on social and physical elements. Furthermore, there is no "inclusion scale" that can be used to study the inclusion of SWDs in HEIs, according to the researchers' expertise and reach in the disability literature. The current study did not address the problem; instead, it used a scale to suggest what the scientific community and other stakeholders in the field should do in the future, both worldwide and nationally.

The study guided by the following questions:

1. to what extent are students with disabilities included in the higher education institutions?
2. is there a substantial difference in the enrollment of disabled students in higher education institutions due to demographic characteristics (gender, disability types, and year levels)?

1.3 Review of Related Literature

Examples of Studies focusing on Challenges of SWDs in HEIs both Internationally and Nationally

On the academic challenges, those studies reviewed internationally (e.g. Abu-Hamour, 2013 cited in Edna, 2016; Alsalem, & Doush, 2018; Blinn, 2017; Erten, 2011 cited in Birhanu, 2015; Joseph, 2010; Mccray, 2013; Matonya, 2016; Moores, 2010 cited in Suubi 2013; Ntombela & Soobrayen, 2013; Oppong, Fobi & Acheampong, 2018; Suubi, 2013; Zambrano, 2016) indicated that the challenges are related to faculties' expressed in not allowing late comers, non-accommodative methodology, assessment, evaluation, poor knowledge of legislation and lack of teaching experience with SWDs, family poverty/financial, HEIs' settings suitable for non-deaf students only, lack of department cooperation, information inaccessibility and non-uniformity function of HEIs, non-availability of sign language interpreters, ill-prepared interpreters, lack of guidance counseling service, and technology and lack of computer skills.

The local studies (e.g., Endalkachew & Dessalegn, 2017; Getachew, 2018; Teferi, 2018; Tirussew *et al.*, 2014; Walga, 2018; Yared, 2008; Yohannes, 2015) unraveling the academic challenges of Ethiopian SWDs in HEIs more or less came up with similar findings with studies discussed in the international ones. Yet, two things need to be stressed in the findings. First, the findings talk about only some HEIs in the country. Namely, Adiss Ababa, Hawassa, Gondar, Semera, Dilla, Haramaya, Axum, Bahir

Dar, Mekelle, Jigjiga, Debretabor, Adama Science and Technology, Jimma, Welkite, Mizan-Tepi, and Mekelle Universities in particular and dominated by Addis Ababa University in general. Second, SWDs who participated in the study were none other than students with visual, hearing impairments, with physical disabilities, and more of on SWVIs. May be because, these three types are mostly recognized as disability types by HEIs in Ethiopia. For example, disability offices in HEIs in the country serve only students with these disability types. Though not solved in this study, the researcher would like to suggest future studies need to incorporate other HEIs and other disability types too.

On social challenges, those studies (e.g., Chanika, 2010; Joseph, 2010; Lourens, 2015; Matonya, 2016; Suubi, 2013; Zambrano, 2016) reviewed internationally indicated SWDs' social challenges are the following: difficulty in finding oneself in HE setting, hostile environment, marginalization and disempowerment, communication problem, difficulty to make social networking, dating problem, lower expectation, and attitudinal barrier related to toilet use and sharing food.

The social problem of SWDs' as indicated by local studies (e.g., Almaz, 2011; Birhanu, 2015; Endalkachew & Dessalegn, 2017; Teferi, 2018; Tirussew *et al*., 2014; Tirussew & Lehtomki, 2010, cited in Walga, 2018; Walga, 2018; Yohannes, 2015) were primarily negative attitude of faculties' and SWODs' and its resultant hostile relationship and the uneasiness of interaction with others due to fear of sexual harassment.

On physical challenge, those studies (e.g., Blinn, 2017; Kabuta, 2014; Matonya, 2016; Mutanga, 2015; Okoye, 2010 cited in Walga, 2018) reviewed internationally indicated that there were bureaucratic problems while requesting access by SWDs, lack of health service, difficulty in daily living activity due to access inadequacy and unattractiveness, and generally the physical environment challenge seem to be more or less similar in the majority of HEIs.

The same thing was also witnessed in the local ones. A study done by (e.g., Abdulfettah, 2018; Endalkachew & Desalegn, 2017; Getachew, 2018; Teferi, 2018; Tirrusew *et al*, 2014; Walga, 2018; Yared, 2008) in different HEIs in the country reported similar findings that the physical environment of the HEIs' is inaccessible. For instance, dormitory, dining room, toilet, shower, road, recreational centers/campus playgrounds, library, and the likes were inaccessible. Therefore, some of these studies reported that SWDs were challenged in their mobility, incur mark reductions and negative relationships with faculty due to lateness from class, unable to enjoy services due to inability to access the whole campus settings, asking help from passersby while moving inroads, and fatigue in a library.

In summary, we understand that though the above studies were insightful in reporting the challenges existing in the inclusion process of SWDs in HEIs, the current researchers believe studies in the area should transcend investigating inclusion of the students using a measurement scale.

Examples of Studies focusing on Inclusion of SWDs in HEIs

It is important to note that most of the studies described in this section were not conducted using standardized measurement scales; rather, they were primarily qualitative in nature and relied on students' personal accounts. Findings at both the international and national levels reveal mixed outcomes—some positive, some negative—and in many cases, differences across disability types were reported, which were often linked to variations in campus environments.

At the international level, Matonya (2016), in a study of women with disabilities (WWDs), explained that higher education contributed significantly to self-awareness and identity formation. Participants indicated that their educational experiences helped them transition from marginalization to becoming literate and empowered individuals. They also reported opportunities to meet others facing different challenges, which enhanced their ability to interact and live in diverse communities. As a result, families and community members began to value their opinions, involve them in decision-making processes, and consult them on issues such as the education of younger relatives.

In the Ethiopian context, Yohannes (2015) investigated the perspectives of visually impaired students regarding equal learning opportunities compared with their sighted peers. Although participants acknowledged having the same opportunity to enter HEIs, they strongly argued that once admitted, the overall learning environment was far from equitable. The most common concern was the inadequate provision of learning materials, which was considerably lower compared to what was available for sighted students.

Another encouraging finding was reported by Tirussew *et al*. (2014), who examined students' self-assessment of their academic performance. Results showed that 4.6% rated themselves below average, 60.8% considered themselves average, and 34.7% identified as above average. This indicates that a substantial proportion of students with disabilities are achieving reasonably well in HEIs. With the exception of a few institutions such as Samara and Dilla Universities, the majority of respondents reported an average level of performance.

However, differences in inclusion levels have been documented across disability types. For example, Suubi (2013) found that students with visual impairments (SWVIs) generally felt more included than their deaf or hard-of-hearing peers. While some deaf students perceived higher education as manageable, others described it as highly challenging. Despite their confidence in academic abilities, both groups struggled due to limited institutional support. Suubi (2013) noted that although universities were aware of the needs of these students, little had been done to adequately address them.

Overall, levels of inclusion among SWVIs and deaf/hard-of-hearing students were not satisfactory. Many visually impaired students felt only partially included, while deaf students frequently expressed feeling excluded. Only hard-of-hearing students reported somewhat better integration. Interaction between deaf and hearing students was minimal, and relationships with instructors were often limited. Consequently, satisfaction with inclusion was much lower among deaf and hard-of-hearing students compared to SWVIs.

At both local and global levels, the number of comprehensive studies addressing inclusion remains limited. In Ethiopia, for instance, only a few investigations—such as those by Tirussew *et al*. (2014) and Yohannes (2015)—have attempted to explore the matter systematically. A key challenge is the absence of a standardized scale to measure inclusion.

Nevertheless, different initiatives have been introduced internationally to promote inclusive practices. One such initiative is the concept of the Least Restrictive Environment (LRE), established through the U.S. Individuals with Disabilities Education Act (IDEA, 1975), which emphasizes that students with disabilities should be educated in mainstream classrooms to the maximum extent possible. Another approach is the Universal Design for Instruction (UDI), which calls for integrating accessibility into course development from the outset. According to McGinty (2016), UDI provides guidelines that ensure teaching strategies and curricula accommodate diverse learners, thereby supporting the social rather than the medical model of disability. Gale and Mills (2013) further identified belief, design, and action as three central dimensions of inclusive pedagogy, stressing that teaching should value all learners and actively engage them.

Similarly, inclusive teaching and learning frameworks emphasize that curricula and assessment should be designed to engage all students in ways that are meaningful, relevant, and accessible (Hockings, 2010; 2011). This anticipatory approach acknowledges learner diversity and reduces barriers to participation. Another important concept is the development of a disability-friendly institutional climate, which, according to Huger (2011), benefits not only students with disabilities but the entire student body by fostering sensitivity, acceptance, and positive interaction across diverse groups.

Together, these frameworks advocate for higher education systems that uphold values of inclusivity, belonging, and social cohesion for both disabled and non-disabled students. However, the present study did not evaluate the extent to which such approaches are being applied in Ethiopian HEIs. Instead, it focused on how students with disabilities perceive their own inclusion in academic, social, and physical aspects of campus life.

In summary, the reviewed literature suggests that although inclusion has been widely discussed, much of the existing work has emphasized challenges rather than quantifiable outcomes. The lack of a standardized measurement tool makes it difficult to evaluate inclusion consistently. This study, therefore, aims to address this gap by assessing the inclusion status of students with disabilities in selected Ethiopian HEIs.

2 Research Design and Methodology

2.1 Description of the Study Areas

There are around 45 public HEIs in Ethiopia. Despite this, the research focused on the 10 first-generation public universities. Adama, Dilla, Addis Ababa, Arbaminch, Haramaya, Mekelle, Hawassa, Gondar, Bahir Dar, and Jimma University of Science and Technology were among them. The justification is that among the remaining 35 public HEIs, the 10 HEIs with a solid track record in accepting SWDs are deemed to have a good track record (e.g., Tirussew *et al.*, 2014). However, using simple random picking, five universities were chosen for this study: Addis Ababa, Haramaya, Hawassa, Bahir Dar, and Gondar universities.

2.2 Research Design and Approach

The study employed a cross-sectional survey design with quantitative approach. The design enabled the collection of data from respondents with in a very short period of time to investigate the relationships between variables of interest of the study, from May 1 to June 25, 2019.

2.3 Population, sample, and sampling technique

The population of SWDs from Addis Ababa, Haramaya, Hawassa, Bahir Dar, and Gondar universities is shown in Table 1. The study employed Taro's (1967) formula to calculate the sample size, n, from the study population, N, and e is the chance of error (within the desired precision of 0.05 for 95 percent confidence level). In our situation, the sample size was determined to be 264 SWDs from a target population of 773 SWDs. To choose sample SWDs from the five HEIs, proportional stratified random sampling techniques (blind, deaf, and physical impairments strata) used. Finally, the indicated SWDs from each HEI were chosen using a systematic random sampling technique based on a name list of students acquired from each of the five HEIs.

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

$$n = \frac{773}{1+733(0{,}05)^2} = 263.59 \approx 264$$

Table 1: Population, sample size, and sampling technique

University	Target Group (SWDs)	Target Population	Sample Size	Percentage from Target Population
Addis Ababa	Blind	108	37	12.1%
University	Deaf	146	50	16.3%
	Physical impairments	53	18	5.9%
	Total	**307**	**105**	**34.3%**
Haramaya	Blind	82	28	26.2%
University	Deaf	2	1	1%
	Physical impairments	23	8	7.5%
	Total	**107**	**37**	**34.7%**
Hawassa	Blind	110	37	28.5%
University	Deaf	5	2	1.5%
	Physical impairments	15	5	3.8%
	Total	**130**	**44**	**33.8%**
Bahir Dar	Blind	121	41	32.5%
University	Deaf	0	0	0%
	Physical Impairments	5	2	1.6%
	Total	**126**	**43**	**34.1%**
University of	Blind	51	17	16.5%
Gondar	Deaf	4	2	2%
	Physical impairments	48	16	15.5%
	Total	**103**	**35**	**34%**
	Total	**773**	**264**	**34.2%**

Source: Computed by the current researcher from data obtained from each sampled HEIs.

2.4 Instrument of data collection

Questionnaire

Given that the SWDs shared similar demographic characteristics such as sex, year of study, and type of disability, the College Student Experience Questionnaire (CSEQ, 4th edition) developed by Pace and Kuh (1998) was utilized in this study with permission and appropriate adaptation. The pace and Kuh's questionnaire consist of over 150 items with categories of (a) college activities, (b) the college environment, and (c) estimate of gains (Gonye *et al*., 2003). However, leaving (a) the college activities and (b) the college environment, the CSEQ was used to collect data on (C) inclusion ("estimate of gains" as put in the questionnaire) consists of about 25 items of different areas about academic, social and physical inclusions (yet, an estimate of gains is non-dimensional). Items are evaluated on a 1— 4 Likert scale: 1— very little; 2 — some; 3 — quite a bit; 4— very much. It must be understood that CSEQ "estimates of gains" were used to measure inclusion, the fact that to the reach of the current researchers they were unable to get inclusion scale none other than CSEQ.

Validity

Validity of the face and content were examined. The study took into account the following recommendation in doing so. The process of judgment entails having a group of specialists confirm the items in order to assure the assessment instrument's content validity. Domain specialists should be chosen based on characteristics such as expert knowledge, specific training, and/or professional experience in the field. When establishing content validity, it is

recommended that at least three experts be involved. The use of a large number of experts (more than ten) reduces the likelihood of agreement (Polit & Beck, 2006). The minimal number of experts necessary for content validity is three to ten (Streiner, Norman, & Cairney, 2015; Yaghmale, 2003), whereas others recommend at least two (Gable & Wolf, 2012; Waltz, Strickland & Lenz, 2016). As a result, three Ph.D. dissertation supervising committees, two from Haramaya University and one from the University of Gondar, as well as four special need and inclusive education professionals and experts from the latter HEI, were consulted to assess the face and content validity of the three instruments.

Constructive recommendations and comments were gathered from these seven professionals. Punctuation, subject-verb agreement, wordings, phrasing, ordering, additions of demographic information, and clear directions on how students fill out the questionnaire are among the suggestions and critiques. As a result, the expert feedback was taken into consideration, and clear directions on how students fill out the questionnaire. Hence, the feedback given by the experts were considered accordingly.

Reliability

First and foremost, the valid instrument (CSEQ) in its English language version was translated into Amharic by a professional translator who was unfamiliar with the questionnaires' aims at the Bahir Dar City Administration prior to the pilot test. The translation, on the other hand, contained a few faults as a result of its straight translation, which shifted the focus away from the notion. As a result, the researcher re-corrected these minor inaccuracies in order to bring the instruments up to par with an accurate translation. It was a scientific procedure. Guillemin, Bombardier, and Beaton (1993) and Beaton, Bombardier, Guillemin, and Ferraz (2007), for example, suggested that a naive translator who is unaware of the questionnaire's objective should produce the translation so that the researcher can detect subtle differences in the original questionnaire.

A pilot research was conducted at Mekelle University's Adi Haqi Campus with 30 SWDs consisting of 10 blind, 18 with physical disabilities, and 2 deaf to maintain the instrument's dependability, as shown in Table 2.

Table 2: Reliability index of measures

Variable	Sub-scale	Number of items	Cronbach Alpha
Inclusion	Inclusion	25	.93

Following the pilot study, the questionnaire item numbers were kept the same as they were in the original instruments. As indicated in the above table, the total Cronbach's alpha (α) internal consistency reliability coefficient was calculated for the total scale for CSEQ was to be .93.

Thus, it was adequately justifiable to proceed with the final data collection for the study that the scale's values satisfactorily met the standard of very good internal consistency reliability of a scale. For example, DeVellis (2003) as cited in (Pallant, 2010 p. 97) stated that, "ideally, the Cronbach alpha coefficient of a scale should be above .7" Pallant (2010, p.100) further strengthened that, "Values above.7 are considered acceptable; however, values above .8 are preferable."

2.5 Methods of data analysis

The responses collected through the questionnaire were coded and entered into an Excel spreadsheet, then transferred to SPSS version 21 for statistical analysis. Prior to analysis, the researcher carefully cross-checked each entry in Excel with the SPSS database to ensure accuracy, and no mismatches were found. To verify data quality, the minimum and maximum values of each variable were examined to detect possible outliers or impossible values; none were identified. Consequently, the dataset was confirmed to be free of entry errors, with an accuracy rate of 100%. Missing responses were recorded as "missing" and excluded from analysis using pairwise deletion (n = 10). For participants who had completed more than 80% of the items

on a given measure, the remaining missing values were replaced using mean substitution based on the responses they had provided. After this cleaning process, a total of 255 out of the initial 264 cases were retained for analysis.

Descriptive statistics such as frequencies and percentages were first computed to summarize the socio-demographic profile of respondents. Before conducting inferential analyses, preliminary checks for assumptions (including normality, linearity, absence of outliers, and homogeneity of variance) were carried out, and the requirements were adequately met.

Subsequently, inferential tests were performed to address the research questions. A one-sample t-test was used to determine the overall extent of inclusion of students with disabilities in higher education institutions. Independent-samples t-tests were applied to examine whether gender differences existed in perceived inclusion. Furthermore, one-way ANOVA tests were conducted to investigate whether significant variations in inclusion were observed across disability types and year levels.

3 Results

3.1 Respondents' demographic characteristics

A total of 178 (69.8%) males and 77 (30.2%) female SWDs participated in the study. Coming to disability type, more than half of the participants (59.6%) were blind, followed by deaf (21.1%), and with physical disabilities (19.2%). Concerning year level, 31%, 28.2%, and 25.9% were second-year, first-year, and third-year students respectively.

Table 3: Percentage of respondents across gender, disability type, and year level

Variables	Categories	Number	Percent
Gender	Male	178	69.8
	Female	77	30.2
	Total	**255**	**100.0**
Disability type	Deaf	54	21.2
	Blind	152	59.6
	Physical Disability	49	19.2
	Total	**255**	**100.0**
Year level	First Year	72	28.2
	Second Year	79	31.0
	Third Year	66	25.9
	Fourth Year	23	9.0
	Fifth Year	15	5.9
	Total	**255**	**100.0**

3.2 Extent of SWDs inclusion in HEIs

Table 4: One sample *t*-test on measuring the extent of inclusion

Variable	Mean	SD	T	Df	Sig.	Mean difference	Test value
Inclusion	72.10	13.28	11.539	254	.000	9.60196	62.5

The one-sample t-test result above revealed a significant difference between the sample mean score for inclusion and the test value, t(254) = 11.53, p = .000. The mean inclusion score (M = 72.10, SD = 13.28) exceeded the test value (62.5), indicating that the respondents' level of inclusion of SWDs was relatively higher.

Gender difference in inclusion

Table 5: Independent samples t-test comparing engagement between male and female SWDs

Gender	N	Mean	SD	t	df	sig.
Male	178	70.4719	12.95851	3.026	253	.003
Female	77	75.8701	13.35975			

As shown in the above table, there was a significant difference in inclusion between male and female SWDs (t=3.026, p<.05). Interestingly, female students had a higher score of inclusion as compared to males.

Inclusion difference across the different disability types

Table 6: School Response (SD in the parenthesis)

Variables	Academic Response	Administrative Response	System Response	Students Response
Mean	2.00	2.27	2.77	1.80
	(1.20)	(0.95)	(0.87)	(1.13)

Table 6 presents the level of school responses to the pandemic. For analytical purposes, the variables were grouped into four categories: academic, administrative, system-related, and student-related responses. The mean scores across these categories (x = 2.00, SD = 1.20; x = 2.27, SD = 0.95; x = 2.77, SD = 0.87; x = 1.08, SD = 1.13) indicated that the overall school response to the pandemic was generally low. Comparatively, the system-level (structural) response was notably higher than that of individual schools.

Table 7: One Way ANOVA comparing inclusion among deaf, blind and physically disabled students

Disability types	N	Mean	SD	F	df	sig.
Deaf	54	66.8333	14.38126	88.45	2	.000
Blind	152	74.8092	12.88448			
Physical Disability	49	69.5102	11.07008			

The one –Way ANOVA result demonstrated a significant difference in inclusion among the blind, deaf, and students with physical disabilities (F=88.45, p<.05). The Tukey posthoc test confirmed that the inclusion score of blind students was significantly higher than deaf and students with physical disabilities. This implies that blind students are in a better position of inclusion as compared to deaf and physically disabled students.

Inclusion difference across year levels

As demonstrated in the Table below, there was no significant difference in inclusion among first, second, third, fourth, and fifth-year SWDs (F=.475, p>.05). This shows that batch level does not have a significant influence on inclusion.

Table 8: One Way ANOVA comparing inclusion among first, second, third fourth and fifth year SWDs

Year levels	N	Mean	SD	F	df	sig.
First Year	72	71.2778	12.36103	.475	4	.754
Second Year	79	73.4430	13.03619			
Third Year	66	72.4394	13.91638			
Fourth Year	23	69.7826	15.00896			
Fifth Year	15	71.0667	14.31017			

4 Discussions

From the findings, only four major issues can be stated boldly. The first is, unlike those previous studies (e.g. Abu-Hamour, 2013 cited in Edna, 2016; Alsalem, & Doush, 2018; Blinn, 2017; Endalkachew & Dessalegn, 2017; Getachew, 2018; Teferi, 2018; Tirussew *et al*., 2014; Walga, 2018; Yared, 2008; Yohannes, 2015; Chanika, 2010; Joseph, 2010; Lourens, 2015; Matonya, 2016; Suubi, 2013; Zambrano, 2016; ., Blinn, 2017; Kabuta, 2014; Matonya, 2016; Mutanga, 2015; Okoye, 2010 cited in Walga, 2018) both internationally and nationally which dealt the diverse challenges of SWDs in HEIs; the present study investigated the inclusion status of SWDs in sampled HEIs which can be taken as a new research endeavor to be continued in the future by concerned researchers in the area.

The second is, worldwide, though there are initiatives in place like the least restrictive environment (LRE) (IDEA, 1975), Universal Design of Instruction (McGinty, 2016), Inclusive Teaching and Learning Movement (Hockings, 2010), and Disability-friendly Climate Concept (Huger, 2011) to realize inclusion of SWDs at all levels of education; it remains a vexed question why there is no so far inclusion scale, to measure the inclusion of the students at all different school settings.

The third is like as it was reported in the review of related literature similar to the study of Suubi (2013) differences of inclusion experiences was observed in this study due to disability types, which can be taken as consistent finding. Whereas, gender and year levels influences the level of inclusion of respondents' in the institutions though very difficult to label them as new and or consistent findings of this study the fact that exhaustive empirical evidence search was not undertaken at the review process, yet they should b taken as considerable findings.

The fourth and the most important finding as it should be, it is possible to infer the finding of the current study that respondents were found to witness inclusion, is attributed to decades of relentless efforts of policymakers, GOs, NGOs, special educational needs professionals, educators, and so on who are relentlessly working in crafting and enacting legal and policy directives, strategies, guidelines and so on disability issues for the inclusion of children, youth, and adults in schooling settings for example.

5 Conclusion and Recommendations

Depending on the finding and discussion of the current research two strong conclusions were drawn; i.e. through the issue of access and inclusion to the education of children, youth, and adults with disabilities in various school settings have been in disability literature for decades, it is a disappointing scenario that so far there is no inclusion scale to measure it, developed by special educational needs/inclusive education educators/researchers. Male students and students who are deaf and with physical disabilities are not that much included when compared to females and those blind students. Therefore, the recommendation of this study would be educators/researchers in the area should make up most effort to develop inclusion scales that can be applied to different education settings, in our case, HEIs and males and those with deaf and physical impairments need to be supported more by the institutions for example.

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Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

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Assessment of Causing Factors for Cheating During Examination

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Abstract

The basic purpose of the present study was to assess the root causes and provoking factors of cheating during an examination and to propose possible solutions to take corrective actions in public secondary schools in Gedeo zone, Southern Nations Nationalities and Peoples Region, Ethiopia. Because of the homogeneity of schools, five schools were randomly selected out of the 24 public secondary schools in the Zone. Similarly, 387 student samples were taken by using simple random sampling techniques to give equal chances to all respondents, while 10 school principals and 10 teachers were selected by availability sampling. The research adopted an embedded mixed (QUANT+qual) design. Questionnaires (quantitative data) for students and unstructured interviews (qualitative data) for principals and teachers were used as collecting instruments. Besides descriptive statistics, principal component analysis, multiple correlations, and multiple linear regression using model IBM SPSS Statistics 20 were used. The result of the study signifies the positive and direct relationships between cheating and the predictor variables. The study is expected to provide evidence-based information for curriculum developers, policy makers, educational officials, school principals, science teachers, and school communities as a whole. The report also adds new knowledge to the existing literature.

1 Introduction

1.1 Background of the Study

Academic institutions serve as environments where individuals are equipped to address various personal, professional, and societal challenges. For this reason, they place strong emphasis on upholding academic honesty and prohibit all forms of deceit or misconduct that may unjustly or unlawfully influence a student's grade on any task or course (Smita, Namrata, Apurva, & Bahubali, 2016). According to Adams and Esther is examination system is

Adams and Esther (2013) observed that examination malpractice has unfortunately become a persistent problem across many nations. According to Obimba (2002), such malpractice refers to unethical or dishonest actions by candidates or examination officials occurring before, during, or after an exam, whether inside or outside the examination venue. In the same vein, Wilayat (2009) described examination malpractice as any unlawful act undertaken by a student, either individually or in collaboration with others—such as peers, parents, teachers, invigilators, supervisors, or printers—to gain unearned or unfair academic advantages (Achio *et al*.,2012).

Cheating on an exam is one type of examination malpractice in which one can have a list of ac-

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tivities including copying from others, having or using notes, formulas, or other information in a programmable calculator or other electronic device without explicit teacher review and permission (Etter *et al*., 2006; Qaiser, G., A., & K., 2015). Moreover, cheating also includes having or using a communication device such as a cell phone, pager, or electronic translator to send or obtain unauthorized information. According to Stephen and Jude (2013), taking an exam for another student, or permitting someone else to take a test for somebody else, and asking another to give you improper assistance, including offering money or other benefits, is also considered exam cheating.

In many cases, the motivation behind students' dishonest or unlawful actions during examinations can be traced to individual characteristics such as jealousy, academic competition, fear of failure, parental expectations for high performance, and a general social tolerance for unethical conduct—all of which can increase the tendency toward cheating (Abbas & Naeemi, 2011). Many parents focus solely on the grades their children achieve, pressuring schools to produce better results without considering the methods used to attain them. In this regard, scholars note that the prevalence of cheating has risen alongside the expansion of high-stakes testing systems. Moreover, both schools and parents often fail to communicate clearly what behaviours are acceptable or prohibited (The New York Times, September 7, 2012). Simkin and McLeod (2009) describe cheating as "widespread," while the Los Angeles Times (1992) observed that although the act itself is not new, it has become normalized in today's academic culture.

Cheating is not limited to students; some teachers also engage in explicit forms of academic dishonesty. Such practices include altering students' answers, giving them correct responses during tests, or illegally obtaining examination papers beforehand and using that knowledge to prepare students (Gareth, Daniela, Trevor, & Robert, 2013). Cheating is disliked to a great extent because it breaks a rule and teachers take it as a personal offence. Thomas Lickona (2004) defines five reasons why cheating is wrong: Cheating will ultimately lower your self-respect because you will never be proud of anything you got by cheating. Cheating is a lie because it deceives other people into thinking you know more than you do. It also violates the teacher's trust that you will do your own work. Furthermore, it undermines the whole trust between the teacher and his or her class. Cheating is unfair to all the people who aren't cheating. If you cheat in school now, you'll find it easier to cheat in other situations later in life-perhaps even in your closest personal relationships. To the extent of the knowledge of researchers, to date, there is scarcity of studies conducted on the causes of school exam cheating in the Gedeo zone and the Southern Nations, Nationalities, and Peoples Region in general.

1.2 Statement of the Problem

Recently, in Ethiopian schools, exam cheating has been encouraged by school communities such as educational leaders, teachers, administrative workers, and students themselves (Dejene, 2021). As a result, it is now considered a common trend among students (MoE, 2017). The Ministry of Education also states that school students are promoted more towards exam cheating since there are weak or no legal charges and proportional punishments taken over bribery by public leaders and individuals by the government. According to the researchers' observations and preliminary interviews, during an examination, students tried to copy from other students near to them using communication devices (like mobile phones) and asked them to give improper assistance, including offering money or other benefits, etc. Therefore, this study attempted to assess the root causes or provoking factors of students' seeking to cheat during an examination in public secondary schools in the Gedeo zone. According to Lucifora & Tonello (2012) and Dejene (2021) studies, it is hard to deny that students are increasingly less able to perform well on national exams even though passing grades are constantly kept in the lower quadrant of the percentile (Aderogba, 2011; Isao & Emmanuel, 2014). On all academic levels, the growing acceptance of a variety of cheating strategies is a difficulty.

Based on the researchers' own classroom experiences, examination cheating in Ethiopia has become increasingly sophisticated, making it challenging to detect. Many students who engage in such practices

often evade punishment; some even respond casually, expressing mild regret or amusement while viewing the invigilator as overly strict or disruptive. Academic dishonesty has become a global issue affecting students at all educational levels—from primary and secondary schools to higher education institutions. In the Ethiopian context, incidents of cheating appear to be rising, a trend that may be linked to factors such as large class sizes, classroom conditions, technological access, diverse student backgrounds, and pressure exerted by teachers, parents, or peers (Adeyemi, 2010; Oko & Adie, 2016).

Ethiopia's Minister of Education now places a high value on educational quality and has been working to reduce exam cheating among students by implementing various preventive measures. Even if the government has been doing this, cheating has continued progressively rather than come to an end (MoE, 2017). Researchers believe that it must be much better to focus on corrective actions than preventive actions to minimize exam cheating. It is impossible to achieve the objective of improving the quality of education without taking corrective actions. According to the information obtained from Zone educational office stakeholders in the preliminary interview, currently, academic cheating is at a very aggressive stage. Students, in large numbers, are attempting to obtain exam answers from other students rather than completing the task themselves. They also ask their teachers for help, especially in regional and national examinations. Thus, this study tried to determine the reasons why school students are involved in exam malpractices.

1.3 Study Objectives

The major objective of this study was to evaluate the root causes and/or provoking factors of students' cheating during an examination and to propose possible solutions for cheating in public secondary schools in the Gedeo Zone, Southern Nations Nationalities and Peoples Region.

The primary focus of the study was to achieve the following explicit objectives:

- To identify the contribution of school environment for exam cheating,
- To investigate the impact of students' level of consciousness towards exam cheating,
- To describe the societal level of awareness concerning exam cheating,
- To determine the impact of exam management and poor exam preparation on exam cheating,
- To investigate the impact of dishonest actions of public leaders and prominent individuals on students' exam cheating,
- To describe the contribution of students' seeking to higher institutions for exam cheating.

1.4 Research Questions

The following research questions guided this study:

- To what extent does the school environment contribute to students' exam cheating?
- Does the level of consciousness of students have an impact on exam cheating?
- To what extent does the societal level of awareness contribute to students' exam cheating?
- Does the weak preparation of students have an influence on exam cheating?
- To what extent do the dishonesty actions of public leaders and public-figure individuals contribute to students' exam cheating?
- Does a student's desire to attend a higher education school have an impact on exam cheating?

2 Methodology

2.1 Research Design

This study has adopted a concurrent mixed (QUAN+qual) design. The study focused on an investigation of the root causes of students' cheating during an examination, especially in Gedeo public secondary schools. Finally, this study provided suggestions and recommendations for stakeholders on how to prevent students from cheating on school exams.

2.2 Sources of the Data

In this study, the primary sources of data were used. The data was collected from school teachers, principals, and students of public secondary schools in the Gedeo zone. This study considered students (target populations) as the main data sources, while teachers and principals were considered supportive data sources.

2.3 Sampling Techniques and Sample Size

In Gedeo zone, there are 24 public secondary schools. According to Creswell (4^{th} ed., 208), it is possible to select certain sites or people if they possess a similar trait or characteristic. Since schools were assumed to be homogenous in nature, five schools were selected by simple random sampling (SRS) techniques.

Student samples were also taken by using simple random sampling techniques to give equal chances to all respondents. Ten (5-male and 5-female) teacher participants, two from each school, having at least five years of work experience, were taken.

Table 1: Sample size and sampling techniques

SN	Respondents	Tot population	Sample size	Sampling technique
1	Schools	24	5	SRS
2	Principals	24	5	Availability
3	Ac/V/ Principals	24	5	"
4	Teachers	751	10	"
5	Students (G10)	12,000	387	SRS

All the teachers were first-degree holders. Ten (main and vice) principals (2 from each school) participated in the study, and all of them were first-degree holders and had more than 5 years of experience. Table 1 illustrates the summary of population and sample size, and sampling techniques used by the study.

2.4 Data Collecting Instruments

Questionnaires were used as tools to collect quantitative and qualitative data. It was prepared by the researchers by referring to different sources. The tools contained both close-ended (for quantitative data) and open-ended (for qualitative data) questions and were developed with a five-point Likert scale type, which ranges from "strongly agree" (5) to "strongly disagree" (1). Before administration to participants, the tools were validated by experts and tested by a pilot study for reliability at Damma secondary school (a non-sample school). The reliability of instruments was done by using reliability analysis at Cronback's alpha of 0.05, and it was found to be.78, which shows acceptable reliability. After some corrections had been made, we distributed 450 questionnaires to students. The return questionnaires were 387. The questionnaires consisted of 31 items. In addition to the open-ended part of the questionnaire, semi-structured interviews were conducted with school principals and teachers after validating by three judges. The interview guide was composed of six (6) items, which were in line with the basic research questions. This data was used to triangulate the findings obtained from quantitative data. Individual interviews were conducted for 15 minutes each.

2.5 Methods of Data Analysis

To analyse the quantitative data, researchers used descriptive analysis (frequencies, mean values, standard deviations, and percentages) and inferential statistics such as principal component analysis (PCA), multiple correlations, and principal component (or multiple linear) regressions using the model IBM SPSS Statistics 20. Variable reduction methods (principal component analysis) was a variable reduction method that was very important to apply to the data to reduce the number of variables, 31 items, into a manageable number and to do

further analysis, multiple regressions. With a sample of more than 200 participants, PCA was more appropriate (Dabone, Graham, & Fabea, 2015).

Multiple linear regressions were the best choice to predict the behavior of one dependent variable (cheating) with a set of continuous independent variables. Firstly, PCA was applied to reduce many "observed" items into a few suitable "artificial" variables (Sabine & Brian, 2004).

The newly named artificial variables were then analysed by using multiple regressions. Besides these, supportive qualitative data collected from school teachers and principals was discussed and embedded within the students' data.

3 Results and Discussions

3.1 Demographic Statistics

Table 2 below shows that female students (57.1%) were slightly greater in number than their counterparts. The average score of the two semesters for most of them were below 70.00. However, a few of them have average results of 80 (15%) and 90 (3.1%).

The number of participants in F/Genet S.S.S. is higher than the other schools, while Chechu S.S.S., Dilla S.S.S., and Wonago S.S.S. and Y/Cheffe S.S.S. are comparable to each other.

Table 2: Demographic characteristics of student respondents

Criteria	Responses	Students	
		Frequency	Percentage
Sex	Female	221	57.1
	Male	166	42.9
Age	16-20	387	100
G9 results	50-59	125	32.3
	60-69	112	28.9
	70-79	79	20.4
	80-89	59	15.2
	90-100	12	3.1
School name	Chechu S.S.S.	81	20.9
	Dilla S.S.S.	86	22.2
	F/Genet S.S.S.	105	27.1
	Wonago S.S.S.	53	13.7
	Y/Cheffe S.S.S.	62	16.0

Table 3: Students feeling for exam cheating during examinations

"I have a positive attitude to get answers (or any assistance from others) during examination"

	Frequency	%	Valid %	Cumulative %
Never	36	9.3	9.3	9.3
Seldom	47	12.1	12.1	21.4
Some times	27	7.0	7.0	28.4
Frequently	50	12.9	12.9	41.3
Always	227	58.7	58.7	100.0
Total	387	100.0	100.0	

As it is depicted in Table 3, students were asked to express their approach towards exam cheating. This shows that most students, except 9.3%, freely express their feelings as they seek to cheat or need assistance (or favour) from others to receive answers during examinations. This implies that, in one or another way, most students (90.7%) are delighted if they get answers during examinations. They do not worry about their futures or the knowledge they have. They will be delighted if they get answers from their classmates or teachers.

Testing the Model

The model of data analysis was tested with various tests such as the Kaiser–Meyer–Olkin (KMO) test, Model Fitting Information, Goodness-of-Fit Test, Pseudo R-Square and Test of Parallel Lines. All tests verify that the data fits well with the model.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.909
Bartlett's Test of Sphericity	Approx. Chi-Square	4413.506
	Df	465
	sig.	.000

The KMO test (Table-4) proves that the adequacy of sampling for-analysis (KMO is 0.91) is found to be marvellous, which is well above acceptable-limit of 0.5 (Field, 2009). Moreover, the p-value (.001) of Bartlett's test of sphericity 2 indicated that correlations between items were large sufficiently for PCA and the sample was randomly drawn from the population.

Table 5: Fitting Information of the Model

Model	**-2 Log Likelihood**	**Chi-Square**	**df**	**sig.**
Intercept Only	951.394			
Final	746.461	204.934	19	.000
Link function: Complementary Log-log.				

From Table-5 the model fit the test results, the statistically significant chi-square value of the baseline/intercept-only model is.0005 (p .0005). This tells us the model is going to give better predictions for the dependent variable cheating (Ari and Yildiz, 2014).

Table 6: Goodness-of-Fit Test

	Chi-Square	**df**	**sig.**
Pearson	1350.806	1417	.894
Deviance	742.302	1417	1.000
Link function: Complementary Log-log.			

Similarly, as observed above in (Table-6), the Goodness of Fit Test insures that the observed significance levels for both Pearson's and Deviance chi-square statistic values are very large, which is greater than .0005 (.894 and 1.000). Hence, the data is consistent with the model; the model fits the data well (Elamir, 2010). And according to Field (2009), If the model appropriately fits the data, the test statistic is expected to be non-significant, meaning the significance value (p-value) should exceed 0.05. This means that the model allows the variance of the underlying variable (cheating) to vary as a function of the independent variables. Thus, the regression model fits well with the data.

Table 7: Pseudo R-Square

Cox and Snell	.412
Nagelkerke	.450
McFadden	.214
Link function: Complementary Log-log.	

Furthermore, the pseudo R^2 value of Nagelkerke (Table-7) is large enough (.450) to show the model fits well with the data (Elsayed Elamir, 2010). As a result, the value denotes that the explanatory factors adequately describe the dependent (cheating) variable.

Table 8: Test of Parallel Lines

Model	**-2 Log Likelihood**	**Chi-Square**	**df**	**sig.**
Null Hypothesis	746.461			
General	671.146[b]	75.314[c]	57	.053

In addition, the p-value (.053) of the Test of Parallel Lines (Table-8) is found to be large enough. Then the data and the model predictions are similar and you have a good model (Sarita, 2015). As a result, all of these indicate that the PCA and regression model are well-suited to the data to be used in the data analysis.

3.2 Multiple Correlation and Regressions

Association statistical inference techniques were used, which included correlation and regression among the explanatory and outcome variables.

3.3 Multiple Correlations

The researchers discovered how much the variables are linked together by using correlations. correlation was run to determine the relationship between the explanatory and outcome variables, as shown in the table below (Table-9). We can see that all the six explanatory variables are positively correlated with the exam cheating. All the factors such as school environment (r =.701, p =.000), students' level of consciousness (r =.840, p =.000), societal level of awareness for cheating (r =.533, p=.000), poor exam management and weak preparation by students (r =.614, p=.000), dishonesty actions of public leaders and figures (r =.667, p=.000), and students' seeking higher institutions (r =.589, p =.000) are statistically significant.

The assumption of multicollinearity among the explanatory variables was also checked (Table-10) as it makes it hard to interpret the coefficients and reduces the power of the model to identify independent variables that are statistically significant.

Table 9: Correlations between explanatory and the outcome variables

		School environment	Students' level of consciousness	Societal level of awareness for cheating	Poor exam management & weak preparation	Dishonesty actions of public leaders & figure individuals	Seeking to higher Institution
Exam cheating	Pearson corr.	.701	.840	.533	.614	.667	.589
	sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	387	387	387	387	387	387

Table 10: Multicollinearity statistics

	Collinearity statistics			
	t	**sig.**	**Tolerance**	**VIF**
School environment	2,609	.012	.541	1.956
Students' level of consciousness	2,782	.003	.541	1.956
Societal level of awareness for cheating	2,851	.001	.541	1.956
Poor exam management & weak preparation	3,438	.010	.541	1.956
Dishonesty actions of public leaders & figure individuals	3,943	.000	.541	1.956
Seeking to higher institution	3, 356	.000	.541	1.956

Based on the coefficients output-collinearity statistics, they obtained a VIF value of 1.956, meaning that the VIF value obtained is between 1 and 10. Then, it can be concluded that there are no multicollinearity symptoms. After the multicollinearity test was completed, the linearity, multivariate normality, and homoscedasticity of the data were checked with appropriate test statistics, and there were no violations of assumptions.

Multiple Linear Regressions

Through regression, we find the perfect relationship equation of dependent and independent variables that help us predict the cause and effect relationship between variables. Principal component regression (PCR) was adopted in constructing the first 6 principal components and then using these components as the predictors in a linear regression model that is fit using least squares. The key idea is that often a small number of principal components suffices to explain most of the variability in the data, as well as the relationship with the response. Principal component analysis (PCA) was done before PCR was used because it is a popular approach for deriving a low-dimensional set of features from a large set of variables (James, Witten, Hastie, & Tibshirani, 2013). Then, using orthogonal rotation, PCA was performed on the 31 factors (items) in the student data (varimax).

The principal components are determined by eigenvalues (> 1) from these analysis results (Field, 2009; Gareth, Daniela, Trevor, & Robert, 2013).From 31 variables, only 6 components have initial eigenvalues of equal or greater than 1 and cumulative loadings of 62.19% of the total variance explained (Table-11) as depicted above. So, these components are retained for further analysis and multiple regressions of the data.

Table 11: Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	8.547	27.570	27.570	8.547	27.570	27.570	4.724	15.239	15.239
2	2.285	7.372	34.943	2.285	7.372	34.943	3.898	12.573	27.811
3	1.485	4.789	39.731	1.485	4.789	39.731	3.198	10.315	38.126
4	1.196	3.858	48.030	1.196	3.858	48.030	1.363	4.396	47.065
5	1.129	3.643	55.457	1.129	3.643	55.457	1.161	3.744	54.954
6	1.024	3.302	62.185	1.024	3.302	62.185	1.099	3.546	62.185
etc.									

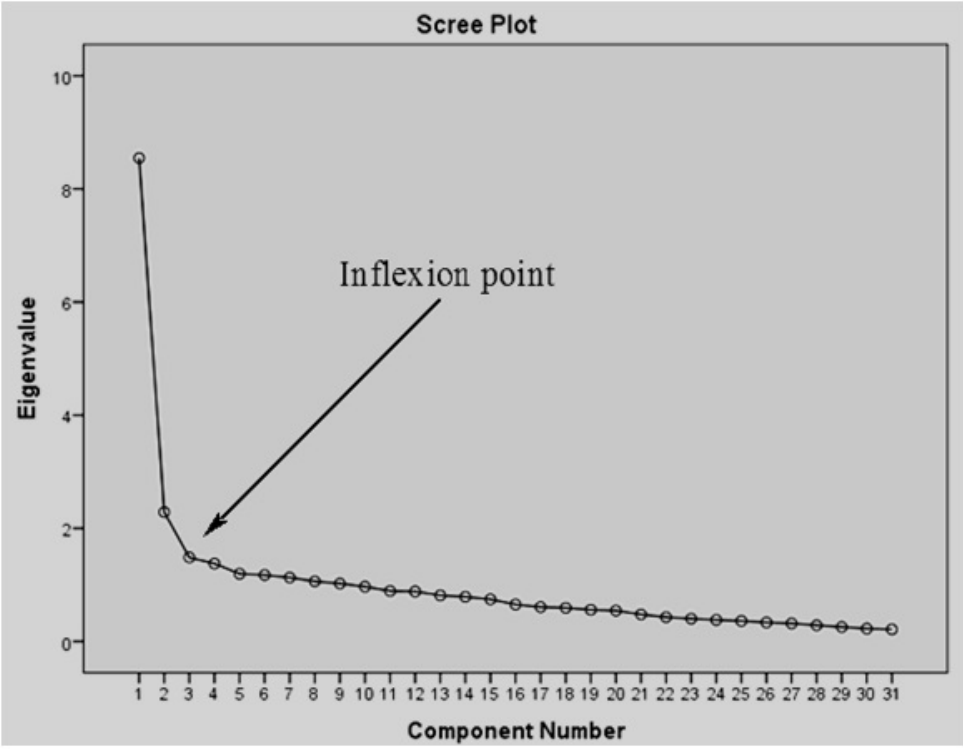

Figure 1: Scree Plot- a graph plotting each component (X-axis) against its associated eigenvalues (Y-axis)

Similarly, the scree plot (Figure-1) of the PCA shows the inflexion point happens at the third component/factor. However, given-large sample- size and Kaiser's recommendation, stating that all factors with eigenvalues larger than one should be retained, and as it is also noted from the total variance explained, the researchers chose 6 components for the final analysis.

The rotated component matrix shows the factor loadings after rotation (Table-12). It involves identifying the variables or items that demonstrate high loadings for a given component and determining what these variables have in common. The researchers retained those variables having loading values greater than their absolute values. 40. According to James *et al*. (2013), loadings greater than absolute value 0.4 represent substantive values. In such a way, similar items (observed variables) cluster together to form six principal components (PCs). These components (or artificial variables) were given new names as provided in the parentheses: component-1, PC1 (weak school environment), component-2, PC2 (low consciousness of students), component-3, PC3 (low societal awareness of cheating), component-4, PC4 (poor exam management and weak preparation), component-5, PC5 (dishonesty actions of public leaders and notable individuals), and component-6, PC6 (students seeking higher institutions).

Table 12: Rotated component matrix

Items	Components					
	1	2	3	4	5	6
Schools compound, buildings and chairs are not attractive	**.805***	.214	.180	.033	.088	-.062
Shortage of text books and other teaching materials	**.753***	.189	.196	.000	.092	-.008
Making students busy by different extra-curricular activities	**.751***	.254	.225	.041	.091	.069
Exam items are conducive for cheating	**.739***	.328	.170	.120	.097	.044
Teachers are not committed to minimize cheating	**.728***	.204	.217	.055	.233	.074
Overcrowded/ large class size classroom	**.721***	.207	.335	-.018	.009	.057
Tight exam schedule	**.636***	.297	.356	.030	-.007	.043
They dislike the subject	.161	**.822***	.103	.142	-.035	.005
They spent much of their time by television set, on internet surfing, face book conversation and or computer games	.182	**.752***	.094	.017	.019	.025
They find studying challenging or boring	.237	**.725***	.137	.127	.034	.007
Carelessness	.267	**.721***	.085	.005	.098	.158
Peer influence	.312	**.697***	.072	-.054	.177	.061
Competition among students	.221	**.645***	.069	.021	.157	.145
Society encourages exam cheating	.300	.106	**.782***	.023	-.019	.063
Fear of criticism from society members if they fail in the exam	.223	.113	**.709***	.008	.013	.015
Their participation in other economic activities such as agriculture, commerce, and transportation	.213	.098	**.658***	.166	.000	.138
They have too much work to do at home and not enough time to study	**.406***	.146	**.637***	-.091	-.167	-.014
Lack of intimate relationship between schools and parents	.235	.044	**.594***	.085	.229	.076
Their parents have no enough understanding about the consequence of cheating	.120	.123	**.449***	.089	.411	-.045
Laissez-faire leadership concerning exam administration	.015	.071	.119	**.745***	-.177	-.065
Weak rules and regulation concerning exam administration	.059	.136	.038	**.690***	.250	.052
Ineffective supervision and control during examination	.239	.243	.190	.182	**.559***	-.124
Need good grades to get into college	.193	.079	-.145	-.040	**.473***	.181
Their parents expect better result from them	.102	.137	.205	-.069	-.070	**.683***
Low preparation for exam	-.066	.213	.043	.052	.191	**.658***
Their parents burden them with home activities	.117	.038	-.144	.111	-.179	**. 740***
Everyone else is cheating such as sports stars, movie stars, leaders	-.093	.082	.132	-.156	**.411***	**.621***
Their parents encourage cheating	.114	-.007	.043	.120	**. 829***	.020
Their parents only expect completing grade ten(10) from them	.160	-.050	.032	.383	**. 561***	.112
Fear of failure	.086	-.038	-.059	.100	.001	.173
Unable to fulfil necessary educational materials such as reference books and others educational materials	-.106	.217	.193	-.121	.149	**-.427***

Multiple Linear Regressions for the Student Data

Multiple regressions are being used to predict the behavior of dependent variables (cheating) with a set of independent variables (James, Witten, Hastie, & Tibshirani, 2013). Because of having a well-fit regression model, it is straightforward to apply and predict the response variable, cheating, on the basis of a set of values for the artificial variables (the six PCs).

The p-value (.870) of the students' age is greater than.05 (Table-13, above). This suggests that students are seeking to cheat irrespective of their age differences (i.e., age doesn't appear to be related to cheating). Regarding grade 9 results, students with lower previous grade scores are less likely to be labeled as higher exam cheaters than those students with better results. That is, there are no significant differences among them regarding cheating. This implies that those high-scoring students have either a tendency to cheat or to give answers for others. Moreover, when comparing schools to each other, Dilla secondary school is likely to assign cheating signifies more (.036) than the baseline category (Y/Cheffee). While the three schools are similar in these regards, F/Genet, Wonago, and Chichu have no significant difference.

Table 13: Parameter Estimates for schools, students gender, age and their grade-9 results

	Estimate	Std. Error	Wald	df	sig.	95% Con. Interval	
						Lower Bound	Upper Bound
Chechu	-.054	.289	.035	1	.851	.620	.512
Dilla	.660	.315	4.398	1	.036	.043	1.277
F/Genet	-.300	.266	1.267	1	.260	.821	.222
Wonago	.223	.308	.525	1	.469	.380	.826
Y/Cheffe	.	.	.	0	.	.	.
Sex=1	-.326	.175	3.471	1	.062	.668	.017
Sex=2	.	.	.	0	.	.	.
Age=1	.076	.464	.027	1	.870	.834	.985
Age=2	.	.	.	0	.	.	.
G9Result=1	.190	.444	.183	1	.669	.681	1.061
G9Result=2	-.020	.404	.002	1	.961	.811	.771
G9Result=3	.064	.391	.027	1	.870	.703	.831
G9Result=4	.388	.402	.929	1	.335	.401	1.177
G9Result=5	.	.	.	0	.	.	.

Table 14: Parameter Estimates for PCs

	Estimate	Std. Error	Wald	df	sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PC-1	.510	.087	34.447	1	.000	.339	.680
PC-2	.911	.094	94.519	1	.000	.727	1.095
PC-3	.094	.041	5.256	1	.012	.014	.174
PC-4	.246	.071	12.104	1	.001	.108	.385
PC-5	.075	.032	5.493	1	.019	.012	.138
PC-6	.188	.075	6.246	1	.012	.041	.335

The parameter estimate tables (Table 14) form the core of the outputs, specifically telling us about the association between explanatory variables and an outcome-variable (Sarita, 2015). The table shows the degrees and directions to which cheating is affected by the six explanatory variables. One can see that the estimate b and the Wald statistical values are different significantly from 0, and then it can be stated that all predictors (PCs) are make a big influence to the forecast of cheating (Field, 2009). The Wald statistics for all predictor variables are less than the standard.05 (with one degree of freedom) and the regression coefficients (b) are positive. We are 95% confident that the true b-values (e.g., b1, b2, etc.) are found in ranges (like.339, -.680,.727, -1.095, etc., respectively). That is, all six variables are statistically significant and predict cheating significantly.

This result is firmly in alignment with the interview responses given by school principals and teachers. Principals and teachers believe that the principal components may cause students to cheat during taking tests and exams and when doing homework and assignments. Predictors with lower levels of significance values possess higher estimates and are considered to have enhanced effects on students' attitudes towards exam cheating. The linear combination of predictors that correlate maximally with cheating is provided as:

Cheating=$\beta_0 + \beta_1(PC1) + \beta_2(PC2) + \beta_3(PC3) + \beta_4(PC4) + \beta5(PC5) + \beta_6(PC6) + \epsilon_i$

$=\beta_0 + .510(PC1) + .911(PC2) + .094(PC3) + .246(PC4) + .075(PC5) + .188(PC6) + \epsilon_i$

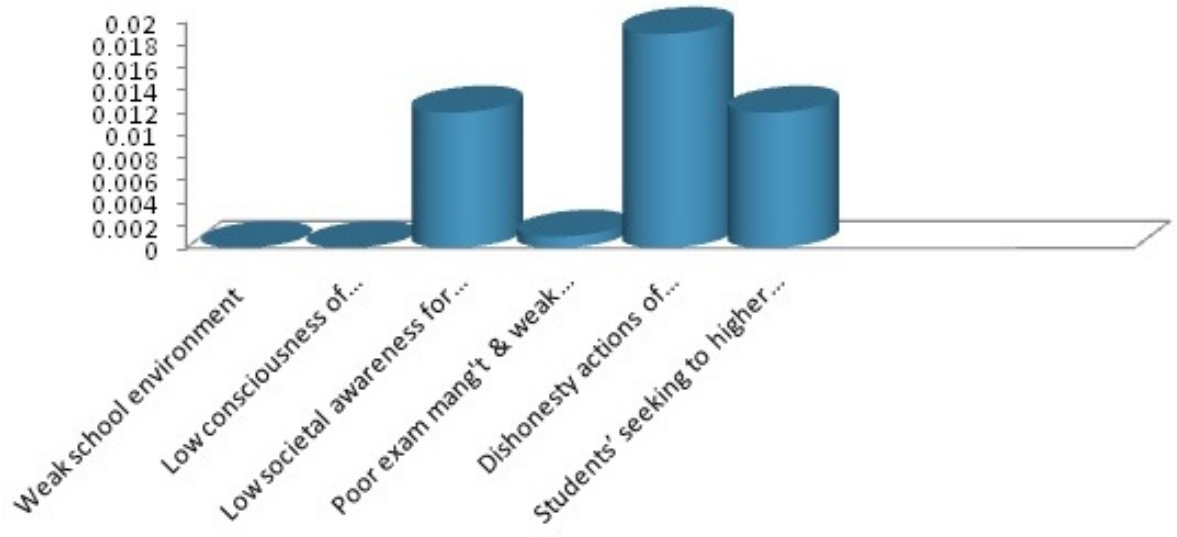

Figure 2: Significance values of the Wald statistics- the entire predictor variables have Wald statistics with levels of significance less than .05

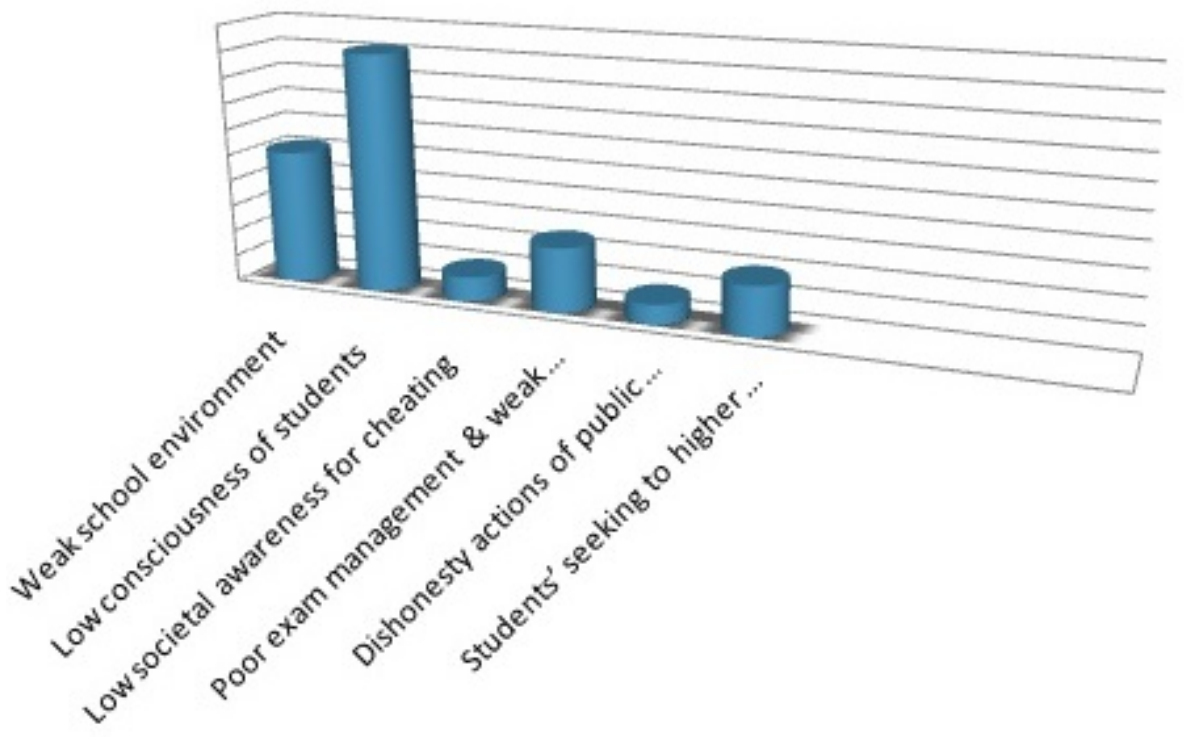

Figure 3: Regression coefficients- degree of increment of cheating for 1 increment of each predictor

The above figures (Figure-3 and 4) illustrate that, particularly, weak school environments (p =.000), low consciousness of students for cheating (p =.000), and poor exam management and weak preparation (p =.001) have very low p-values (Figure-3) and higher regression coefficients (Figure-4). They can be considered as strong causes or provoking factors for public secondary school students' dishonesty behaviours on examinations. Since the remaining factors have p-values lower than the standard and what sound like higher estimate values, they are plausibly the main causes of exam cheating in schools.

In other words, multiple regression results show that there is a high positive correlation of cheating with all the causing factors (the six PCs). When each of the predictor variables exists and becomes strong, so does exam cheating. That is, when the existence of the predictor variables increases, the chance of the occurrence of exam cheating by students also increases. On the other hand, minimizing the causing factors leads to a reduction in the attitudes of students towards exam cheating. The figure displays the plausible increment of cheating when each predictor increases by a factor of 1. Exam cheating, for example, increases by a factor of 0.911 for every one increase in poor school environments, and so on.

As it can be seen from the foregoing figures, one can perceive that the lower the levels of the significance values of the Wald statistics, the higher the bi values and that these are strong causing factors for deceptive behaviors of students during school examinations. And also, the lower the significance values of predictors, the stronger the provoking factors for cheating are and vice versa.

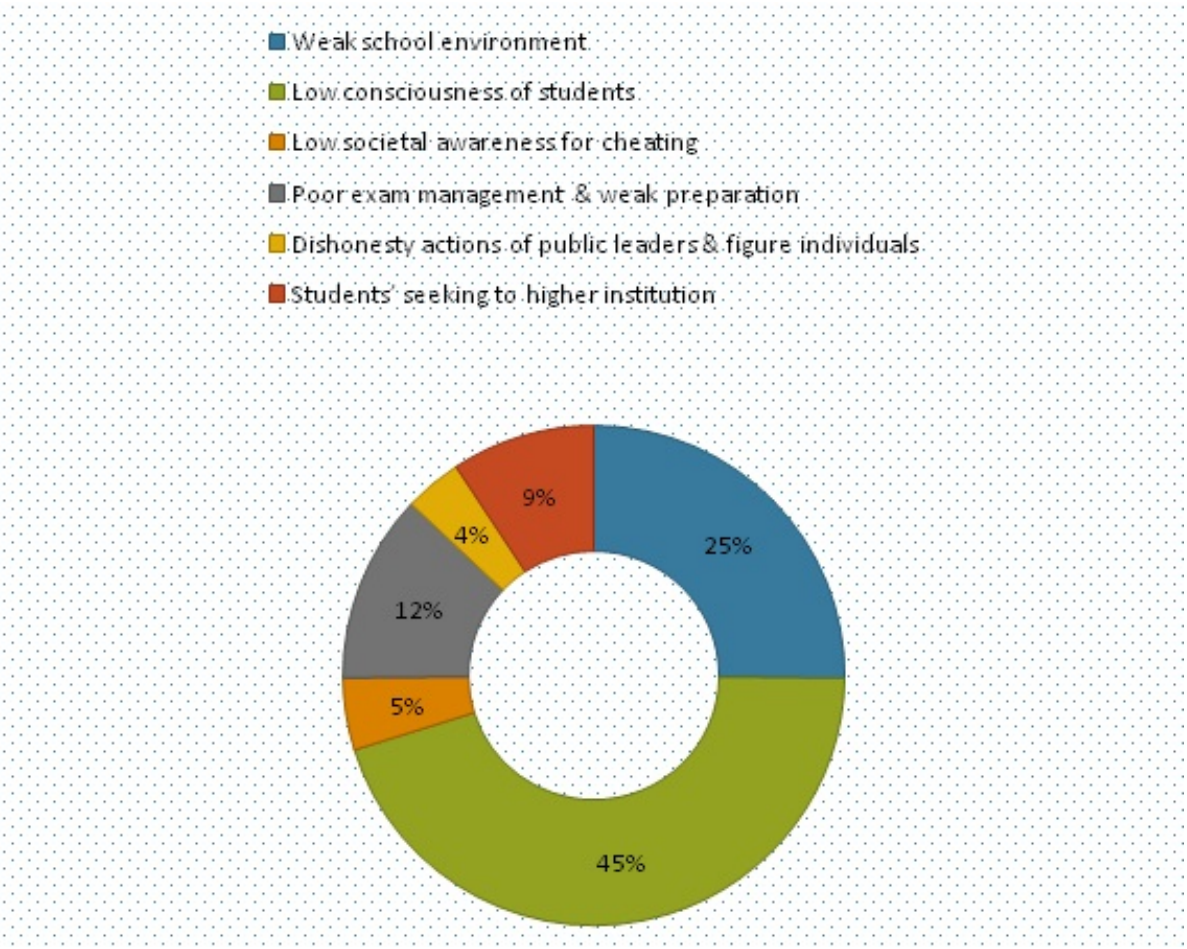

Figure 4: Degree of effect of causing/provoking factors upon students exam cheating

Specifically, 45%, 25%, 12%, 9%, 5%, and 4% of cheating incidents are attributed to students' lack of moral awareness, an unsupportive school environment, weak examination management, inadequate student preparation, the desire to gain access to higher education, limited public understanding of academic dishonesty, and the unethical conduct of influential figures, respectively. Consistent with this finding, most interview participants in the present study emphasized that both students and their parents often fail to recognize the negative consequences of examination malpractice. They noted that even when students achieve high scores through dishonest means, such success holds little real value, as the knowledge and skills required for practical application are absent.

According to Figure 5, the second strongest causing factor for exam cheating is a weak school environment (25%). A child's "school environment" refers to all the human and material resources available in the school which a child can see, hear, touch, smell, taste, feel and respond to (Chapman, 2003). It influences the physical, mental, social, and emotional development of schoolchildren. School is more than just a place where children go to study. Rather, it is a place where a child lives. The entire child-body, mind, heart, and soul-is immersed in the school environment and is dynamically interacting, influencing, and being influenced by its various aspects (Hopkins, 2001: 3).

The qualitative data collected through interviews and open-ended questionnaires indicates that there was a shortage of laboratories, laboratory equipment, facilities, and well organized libraries, and in some areas there was also a shortage of trained manpower to run laboratories and other school facilities. Based on the above figure, the next strongest causing factors for exam cheating were poor exam management and weak preparation of students for exams (12%). In line with this, the interview informants involved in the study forwarded the problem to the government. When they mention the problem, school performance evaluation mainly focuses on students' exam achievement rather than the teaching learning process and other critical aspects of school. Similarly, some non-governmental organizations (NGOS) that work with schools also use students' achievement in national examinations and the rate of promotion from one grade to another as the major criteria for supporting schools. As a result, some schools pursue high examination outcomes by any means possible. In certain cases, schools even organize events or social gatherings intended to appease invigilators and supervisors during national examinations. This suggests that examination malpractice is often carried out in a systematic and coordinated way, involving multiple stakeholders such as school leaders, administrators, and other officials.

Related studies in the area also assure the existence of similar things throughout the country. Recently, in Ethiopian schools, exam cheating has been encouraged by school communities such as educational leaders, teachers, administrative workers, and students themselves (Dejene, 2021). As a result, it is now considered a common trend among students (MoE, 2017).Based on Figure 5, another factor contributing to exam cheating was the dishonesty of public leaders and figures. In line with this, some respondents noted in their open-ended questions that cheating has become normal. Because everyone is cheating, like sports stars, top politicians, public leaders, and others who work in different top positions. Students in high schools can easily model those individuals because they were children.

Weak preparation of students during exams and non-discouraging behaviors of parents were other causes of exam cheating. With regard to this, the interview informants forwarded that the study area is known for cash crops like coffee, chat, and others. Thus, some students engage themselves in cash crop trades. Worse, during coffee collection season, they did not even attend the class lesson. Besides, since the majority of the students were from rural areas, they actively participate in agricultural work to support their families and to lead their lives. Beyond this, some students were from rural areas far away from the school. According to the informants, the above-listed problems were the major challenges for students in exam preparation. Similarly, low societal awareness and fear of students' failures were other causing factors for exam cheating. Consistent with this, responses

to the open-ended questions revealed that many students experience a lack of confidence during examinations for various reasons, even when they have adequately prepared or studied hard. Related literature in the area under consideration also shows similar things. In many circumstances, the driving force for dishonest or illicit students' behaviour during an exam may be found in some personal traits such as envy, competitive pressure, fears of failure, parents' demand for good grades, and a widespread acceptance of illegal behaviour may increase the likelihood of dishonesty within students (Abbas & Naeemi, 2011).

4 Conclusions and Recommendations

This study identifies the significant root causes of public secondary school students' deceptive attitudes and engagements during examinations.The root causes of exam cheating, based on this study, are identified to be the weak school environment, low student consciousness of cheating, low societal awareness of cheating, poor exam management and weak preparation, dishonesty actions of public leaders and prominent individuals, and students' seeking higher institutions. The result of this study is in alignment with the studies conducted by Adeyemi (2010) and Achio, Ameko, Kutsanedzie, Alhassan, & Ganaa (2012). Most of them have a direct and strong relationship with exam cheating.

Moreover, the analysis of teachers' and school principals' interview data shows that the predictor variables are serious causing factors, and this is in alignment with the students' data. Most of the teachers and principals, in most of the items, believe that the so far mentioned factors are the key factors causing and/or provoking issues of exam cheating by public secondary school students in Gedeo Zone. In particular, teachers agree that these factors could be barriers to achieving the quality of education in the country.

Thus, main and vice principals' and teachers' responses are found to be in full alignment with the responses of students. Based on the results of this study, the researchers need to recommend the following possible solutions:

- District and school officials should build conducive learning environments in classrooms and school compounds.
- School management should develop exam regulations and guidelines.
- Establishing strong exam management and supervision systems is also mandatory in schools.
- Officials need to work on multidimensional awareness creation about the negative impact of exam cheating on students' lives and careers.
- The school should establish and conduct school-parent forums regularly to create strong relationships with the community and/or student parents. This will give a chance for discussion about the impact of exam cheating on students.
- The government needs to give more emphasis and take corrective actions against public leaders who have bribery attitudes and actions, as they are bad role models for school students and younger generations in general.

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Conflict of interest

Minale Demelash and Giorgis Chinasho declare that they have no conflict of interest.

Ethical Statement

The authors believe that ethical issues are very important and should be preserved, as well as that moral practices should be engaged in.The authors have kept important ethical responsibilities such as: a manuscript should not be submitted to more than one journal for simultaneous consideration; the submitted work should be original and should

not have been published elsewhere in any form; a single study should not be split into several parts; results should be presented clearly, honestly, and without fabrication, falsification, or inappropriate data manipulation; and no data, text, or theories by others should be presented as if they were the author's own. Therefore, the authors certify that this manuscript is free from any ethical dishonesty and treat it for publication.

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PGDT Trainees' Coping Styles, Locus of Control and Sex as Predictor of Psychological Wellbeing: Evidence from Dilla University Institute of Education and Behavioral Sciences PGDT Trainees

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Abstract

Educational environments represent a critical context for investigating teachers' psychological characteristics, as these factors influence both professional development and instructional effectiveness. The purpose of the study is to explore associations among locus of control, coping strategies, gender, and psychological well-being among Postgraduate Diploma in Teaching (PGDT) trainees at Dilla University. A correlational research design was employed to address the research objectives. The target population comprised all regular and summer PGDT trainees enrolled in the Institute of Education and Behavioral Sciences at Dilla University. Using proportionate stratified random sampling, 209 participants were selected to ensure adequate representation. Data were gathered through three standardized instruments: the Ryff Psychological Well-Being Scale, the Locus of Control Scale, and the Coping Styles Scale. Statistical analyses were conducted using SPSS version 23 and included descriptive measures (mean and standard deviation) as well as inferential techniques such as Pearson's product–moment correlation, independent-samples t-test, and hierarchical multiple regression analysis. The findings shown that locus-of-control was significantly and negatively compared to overall psychological well-being and its six components—self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth ($p < .05$). In contrast, problem-focused coping and its related dimensions demonstrated a significant positive association with psychological well-being ($p < .01$). Avoidant coping strategies showed a significant negative relationship with overall well-being and its sub-dimensions ($p < .01$). Emotion-focused coping did not exhibit a statistically significant association with overall psychological well-being or most of its dimensions ($p > .05$), except for autonomy and environmental mastery, where significant relationships were observed ($p < .05$). Overall, the findings suggest that coping strategies and locus of control orientation play an important role in shaping psychological well-being among university trainees. Specifically, problem-focused coping emerged as a positive predictor of well-being, whereas avoidant coping patterns and an external locus of control functioned as negative predictors. These results carry important implications for understanding the psychological preparedness of teacher trainees and their prospective professional engagement in the teaching career.

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1 Introduction

1.1 Background of the Study

Psychological well-being has been the subject of wide-ranging empirical studies and theoretical discussions (Wissing & Van Eeden, 2002). However, there is still no universally agreed definition of the concept. In recent decades, research interest in well-being has expanded considerably (Huppert, 2009; Ryff & Singer, 1998). According to Huppert (2009), psychological well-being refers to how well life is going, characterized by both positive feelings and effective functioning. This suggests that individuals with sound psychological health are typically satisfied with life, able to handle challenges, experience happiness, and maintain supportive social connections.

In line with this, Edwards (2005) describes psychological well-being as a state of positive mental health, while Ryff (1989) conceptualizes it as a multidimensional construct shaped by personality traits, emotional regulation, identity, and lived experiences (Helson & Srivastava, 2001). It embodies living a purposeful, meaningful, and vital life (Ryff, 1989), realizing one's potential (Insel & Roth, 2006, cited in Kibret, 2015), and developing optimally through personal choices and lifestyle (Babao & Moscoso, 2008). People who exhibit these attributes are therefore considered too well in their psychological well-being. Research has further shown that well-being tends to increase across age, conscientiousness, education, and extroversion, while it decreases across neurotic tendencies (Keyes, Schmotkin, & Ryff, 2002).

Despite numerous investigations, scholars continue to emphasize that psychological well-being is complex and multidimensional, with its components still debated (Keyes *et al*., 2002; Ryff, 1989b; Wissing & Van Eeden, 2002). A significant shift in the literature was introduced by Ryff (1989), who moved from subjective accounts toward an objective approach. Her framework provided the broadly accepted model is wellbeing (Ryff, 1989b; Ryff & Keyes, 1995). This model consists of six elements: autonomy, personal growth, environmental mastery, life purpose, positive relations with others, and self-acceptance.

From the perspective of eudaimonic well-being, psychological growth and fulfillment are viewed as the fullest realization of one's capabilities, assessed through these six components. Ryff (1989) conceptualized psychological well-being as the effort to actualize personal talents and capacities.

The six elements are described as follows:

- **Autonomy**: independence and self-regulation in daily life.
- **Environmental mastery**: competence in managing surroundings and using available opportunities.
- **Personal growth**: a sense of continual development and openness to new experiences.
- **Positive relations with others**: close, meaningful, and satisfying social relationships.
- **Purpose in life**: a clear sense of direction and meaning in both past and present experiences.
- **Self-acceptance**: a positive view of oneself, including recognition of both strengths and weaknesses.

Research has consistently indicated that psychological well-being is linked to both personality traits and behavioral factors. Two such important predictors are locus of control (Uma & Manikandan, 2017; Mobarakeh *et al*., 2015; Nwankwo *et al*., 2017) and coping mechanisms (Rosario *et al*., 2011; Carnicer & Calderón, 2013; Ziba & Nahid, 2013). Demographic variables such as gender also play a role. Findings have been mixed; for instance, Mills *et al*. (1992), in a study on married couples, reported that husbands scored higher in well-being compared to wives (see Nwankwo *et al*., 2017).

Higher education settings are environments where individuals are often exposed to high levels of stress. For university students, locus of control, psychological well-being, and coping strategies significantly influence academic performance. Teachers in training programs, such as PGDT (Post Graduate Diploma in Teaching) trainees, are key players in the educational system, making their psychological well-being particularly critical. Possessing adaptive coping styles, a strong internal locus of control, and balanced psychological health contributes to

their personal and social growth, effective teaching, and prevention of maladaptive behaviors. Thus, studying the interplay of psychological well-being, coping styles, and locus of control among PGDT trainees is essential not only for improving their own lives but also for strengthening the broader educational system.

Based on this rationale, the present research seeks to examine the relationships among locus of control, coping styles, and psychological well-being in PGDT trainees at Dilla University. Specifically, the study addresses the following

Depending on the aims in the research, attempts were made to answer the following questions: First things first: what do the psychological , coping style and locus of control profiles of the participants look like? Second, do locus of control orientation, sex, and coping styles have significant relationships with psychological wellbeing dimensions? Third: Do locus of control, sex, and coping styles have significant joint or unique predictive validity for psychological wellbeing?

1.2 Review of Related Literatures

Within psychological research, psychological well-being is regarded as one of the most influential variables because of its strong relationship with individuals' overall health and functioning. Ryan and Deci (2001) distinguished two complementary perspectives: the hedonic view, which emphasizes happiness through desire achievement and avoidance of pain, and eudaimonic perspective, that emphases on realizing one's potential and functioning fully. Ryff (1989) advanced eudaimonic well-being model , later refined with Keyes (Ryff & Keyes, 1995), which conceptualizes well-being as the pursuit of personal growth and self-actualization. This multidimensional approach has been widely adopted in research, with various scholars examining and validating its six central dimensions (Abbott *et al*., 2006; Kafka & Kozma, 2002; Meléndez *et al*., 2009). These are autonomy, self-acceptance, personal growth, purpose in life, environmental mastery, and positive relationships with others.

The eudaimonic model suggests that psychological well-being is maximized when individuals achieve balance across these six domains (Ryff, 1989).

Specifically:

- Autonomy reflects independence and self-determination.
- Environmental mastery indicates competence in managing daily life.
- Personal growth denotes an individual's willingness to embrace change and pursue continuous self-development.
- Purpose in life signifies possessing clear goals and a meaningful sense of direction.
- Self-acceptance involves maintaining a favorable evaluation of oneself, including one's past experiences.
- Positive relations with others refer to the ability to build and sustain supportive, satisfying, and high-quality interpersonal relationships.

Additional studies indicate that a range of variables are positively linked to these well-being dimensions as well as to effective coping strategies within academic settings. These factors include Key contributory factors identified in prior research include individuals' level of self-worth (Cabanach *et al*., 2014), their perception of personal control over life circumstances (Doron *et al*., 2009), the strength and effectiveness of their social support networks (Fernández-González *et al*., 2015), and the degree to which they experience autonomous motivation and self-directed regulation (Ryan & Deci, 2000). a clear sense of life purpose (Freire *et al*., 2015), and engagement in self-actualization goals (Miquelon & Vallerand, 2008), as synthesized in the review by Freire, Ferradás, Valle, Núñez, and Vallejo (2016).

Academic stress is a critical issue for higher education students. More than the stress itself, how students cope with it strongly influences their well-being. Coping styles are generally categorized into problem-focused coping (PFCS) and emotion-focused coping (EFCS) (Wonderlich-Tierney & Vander, 2010). PFCS involves active strategies to address the source of stress, such as problem solving, while EFCS relies on emotional responses like rumination or self-blame (Kelly, Tyrka, Price, & Carpenter, 2008). PFCS is typically more effective in resolving stressors compared to EFCS. In general

terms, coping represents the cognitive, emotional, and behavioral efforts made to manage stressors or reduce their negative effects (Folkman & Lazarus, 1985). The relevance of coping to both health (Kraag *et al*., 2006) and subjective well-being (Parsons *et al*., 1996; Sheldon & Lyubomirsky, 2006; Viñas *et al*., 2015) has been well documented.

Folkman (1984) argued that problem-focused coping is most beneficial when the stressor is modifiable, whereas emotion-focused coping tends to be used in situations that cannot be changed. Although coping effectiveness depends on context (Endler *et al*., 1994), research generally supports that approach-oriented coping is more adaptive than avoidance-oriented coping (Gustems-Carnicer & Calderón, 2013; Syed & Seiffge-Krenke, 2015).

Psychological well-being, being concerned with positive functioning, is influenced by multiple individual, demographic, and social factors, such as self-esteem, optimism, gender, education, age, health, and social connections (Binder & Coad, 2010). Empirical evidence also highlights how different coping styles relate to psychological well-being. Loukzadeh and Bafrooi (2013), for instance, observed that EFCS was used more often than PFCS, but EFCS correlated negatively with purpose in life and personal growth, whereas PFCS showed a positive association with purpose in life.

More recent findings continue to emphasize that problem-focused coping is related to higher wellbeing, though reliance on focused emotion strategies is related to lower levels of well-being in both men & women (Williams & McGillicuddy-De Lisi, 2000). Supporting this, Fierro & Jiménez (2002, cited in Freire *et al*., 2016) found that passive or emotion-oriented coping correlated negatively with well-being among young university students. Similarly, González *et al*. (2002) reported that well-being was positively correlated with problem-focused coping and social support seeking, but negatively correlated with emotion-focused coping strategies.

Another key factor in understanding psychological well-being is locus of control. This concept describes whether individuals perceive life outcomes as the result of their own actions (internal locus) or as controlled by external forces like luck, chance, or powerful others (external locus) (Rotter, 1966; Keenan & McBain, 1979, cited in Reknes, Visockaite, Liefooghe, Lovakov, & Einarsen, 2019). Internals tend to actively influence their environment, while externals are more likely to feel powerless and passive (Keenan & McBain, 1979). Research has linked locus of control to positive psychological functioning (Pannells & Claxton, 2008).

Research findings consistently indicate that individuals with an internal locus of control tend to demonstrate higher academic achievement (Gifford, Briceño-Perriott, & Mianzo, 2006), increased self-motivation and social responsibility (Nelson & Mathias, 1995), reduced levels of stress and depressive symptoms (Garber & Seligman, 1980), and even greater longevity (Chipperfield, 1993). In addition, perceptions of personal control have been found to play a moderating role in both psychological and physical aspects of well-being (Brandstadter & Renner, 1990).

In contrast, an outside point of control has been shown related negatively to the wellbeing (Kulshrestha & Sen, 2006). Individuals who attribute outcomes to external forces often experience feelings of helplessness and limited capacity to change unfavorable situations (Nielsen, 1987), which in turn diminishes their overall sense of well-being (Kulshrestha & Sen, 2006).

The present research focuses specifically on PGDT trainees, a group that has been relatively understudied. Its goals are:

(a) to describe the profiles of psychological well-being across its six dimensions;

(b) to investigate how coping strategies (problem-focused, emotion-focused, and avoidance) and locus of control orientations (internal versus external), along with gender, predict these profiles; and

(c) to test whether students with higher well-being use more adaptive coping strategies and maintain an interior points of regulator associated to those lower well-being across dimensions.

2 Research Methodology

2.1 Participants

The research aimed to investigate the extent to which locus-of-control, coping styles, and gender predict school teacher (PGDT) trainees' psychological wellbeing. Hence, to carry out the study, the descriptive and correlational research designs were employed. The study population was drawn from Postgraduate Diploma in Teaching (PGDT) regular and summer program trainees who were enrolled in the 2018/19 academic year at Dilla University Institute of Education and Behavioral Science. In the study population, all the fields that are Amharic, English, Afaan Oroomo, athematics, Physics, Chemistry, Biology, Geography, History, Physical Education, Civics, and ICT were used. o achieve the objectives of the study, a sample was drawn from a total population of approximately 692 individuals (603 males and 89 females). Based on the sample size determination table developed by Krejcie and Morgan (1970), a total of 242 participants were considered adequate and therefore selected for inclusion in the study. Then, the target population was categorized by strata (i.e., stratified by field of study/department). 242 was selected with the consideration of a proportional stratified random sampling approach in terms of department and gender. The questionnaires were distributed by lottery method and finally collected from 209 PGDT trainers who properly filled them out.

2.2 Instruments

The research utilized three validated survey instruments: Ryff's Psychological Well-Being Scale, a modified form of the Adult Nowicki–Strickl, Locus of Control Scale and Adolescent Coping Styles Scale.

Psychological wellbeing scale

To assess the trainees' level of psychological well-being, the 42-item version of Ryff's (1989) Psychological Well-Being Scale was administered. Within this theoretical perspective, well-being is conceptualized as a multidimensional construct that integrates both psychological and social aspects of optimal human functioning. The scale evaluates six fundamental dimensions: self-acceptance, autonomy, environmental mastery, personal growth, positive interpersonal relationships, and a sense of purpose in life.

In the present study, the scale consisted of 42 items distributed evenly across the six subscales: self-acceptance (7 items), autonomy (7 items), environmental mastery (7 items), personal growth (7 items), positive relations with others (7 items), and purpose in life (7 items). Among these, 22 statements were positively phrased, whereas 20 were negatively worded and reverse-scored to ensure response balance. Participants responded using a six-point Likert-type scale ranging from strongly disagree to strongly agree. An example of representative item is: "Generally, I feel that I have control over a circumstances of my life."

Scores on each subscale can vary depending on the individual's responses, with bigger values showing higher psychological wellbeing in that, domain. An aggregated score across all six subscales provides a composite index of the respondent's overall psychological well-being.

The control scale of Locus

Trainees' Points of controller orientation was assessed using an adapted version of the Adult Nowicki–Strickland Internal-External Locus of Control Scale (ANS-IE) (Nowicki & Duke, 1973). This tool was originally developed on the basis of Rotter's theoretical framework and has been widely applied in studies of personality assessment.

The original ANS-IE contains 40 items, each requiring a "Yes" or "No" response. Scores are coded in the external direction, with higher values reflecting a stronger external orientation (Nowicki & Duke, 1993). Thus, an individual's entire score of the scale in the interval 0 to 40. A score above the median indicates an external locus of control, while scores below the median suggest an internal orientation.

The choice of this instrument was guided by its established reliability and its frequent use in psychological and educational research, making it suitable for identifying whether respondents perceive outcomes as determined primarily by their own actions

(internal) or by outside forces like luck, chance, or others powerful issue.

Coping scale

The study adopted the coping scale locally used by Shemsu (2010). The scale was developed on the basis of the general short form of self-reported The adolescent coping scale (ACS) was used as an instrument in this study. As described by Shemsu (2010), the original scale contains 19 items (18 structured and one open-ended item) which were developed by Frydenberg and Lewis (1993). The adolescent coping scale was chosen because the wording of the items in the original scale was not ambiguous and it retained the narrow band of coping distinctions. Moreover, the scale was developed for adolescents but is also used to assess young adults' coping behaviours (Frydenberg and Lewis 1998). The questionnaire items were designed to measure on a 4-point likert scale, ranging from "does not apply to me" to "applies to me always". The adopted scale has 31 items (13 items for the problem-focused coping subscale, 9 items for avoidance coping, and 9 items for emotion-focused coping subscale), which was developed by taking 18 items from the Adolescent Coping Scale (ACS).

2.3 Method of data analysis

Once all questionnaires were completed and verified for accuracy, the data was prepared for statistical analysis. The analyses were conducted by SPSS V-23.0. Both inferential and descriptive statistics were applied to address the research objectives.

At the descriptive level, statistical tools such as means, standard deviations, and frequency distributions were calculated to summarize participants' scores across the study variables.

For inferential analyses, several techniques were employed:

- An independent-samples t-test was performed to determine whether significant gender-based differences existed in locus of control, coping strategies, and psychological well-being.
- Correlation coefficient of Pearson's product–moment was employed to examine the associations between the predictor variables (locus of control, coping strategies, and gender) and the outcome variable (psychological well-being, including its specific dimensions).
- Multiple regression analysis was utilized to assess both the collective and individual contributions of the independent variables in predicting psychological well-being.
- In addition, stepwise regression procedures were implemented to determine which variables served as the most powerful predictors of psychological well-being.

All statistical tests were evaluated at a 0.05 alpha level, with significance levels reported accordingly.

3 Results

In order to examine how locus of control, coping styles, and gender contribute to predicting students' psychological well-being, a series of statistical analyses were carried out. Specifically, descriptive statistics, independent-samples t-tests, Pearson product–moment correlations, and regression analyses were employed. The findings from these analyses are summarized and presented in the following tables.

3.1 The status of Locus of control orientations, Coping styles and Psychological wellbeing of the respondents

In order to see the profiles of locus of control orientations, coping styles, and psychological wellbeing of the respondents, the following descriptive statistics, that is, mean and standard deviation, were used

Table 1: Mean and Standard Deviation of the Participant Profile of Locus of control, Coping styles and Psychological wellbeing (N=209)

Variables		Min.	Max.	Mean	Std. Dev.
Locus of control (IV)	LOC	8	38	20.20	4.882
Coping style (IV)					
Subscales	Problem Focused coping	17	52	37.80	6.936
	Avoidance Coping	10	35	19.64	5.177
	Emotion Focused Coping	11	34	23.71	4.632
	Total	40.00	115.00	81.1531	12.58722
Psychological wellbeing (DV)					
Subscales	Autonomy	13	41	26.63	4.757
	Environmental mastery	15	40	27.00	4.602
	Personal growth	17	42	28.24	5.153
	Positive relationship with other	11	41	27.39	4.905
	Purpose in life	16	89	29.13	6.652
	Self acceptance	18	40	28.13	4.696
	Total	124.00	217.00	166.517	21.92910

As it was illustrated in the above table 1, the respondents' locus of control beliefs were externally oriented (M = 20.20, SD = 4.882) rather than internally oriented. It is noted that the total score on the LOC scale between 8 and 19 is considered an internal LOC, whereas the score between 20 and 38 is considered an external LOC. As it is mentioned in the methodology section, the higher the score (i.e., above the median point) in the locus of control of orientation scale, the more external it means. With regard to the coping styles, problem-focused coping (M = 37.80, SD = 6.936) was the major coping style which was mostly used by the participants. Followed by emotion-focused and avoidance coping were (M = 23.71, SD = 4.632) and (M = 19.64, SD = 5.177) respectively.

Concerning psychological wellbeing, purpose in life (M = 29.13, SD = 6.652), Personal Growth (M = 28.24, SD = 5.153), Self-Acceptance (M = 28.13, SD = 4.696), Positive Relationship With Others (M = 27.39, SD = 4.905), Environmental Mastery (M = 27.00, SD = 4.602), and Autonomy (M = 26.63, SD = 4.757) respectively. Note that in all the sub-domains of psychological wellbeing, the observed mean (i.e., mean of each subscale) ratings are higher than the expected mean (i.e., 21), and hence the mean ratings for the total psychological wellbeing scale (166.52) are higher than the expected mean (126.52).

Table 2: T-Test Results for gender differences on LOC, Coping style, and Psychological wellbeing (N=209)

Sub-scales	Sex					
	Female (N=61)		Male (N=148)			
	Mean	Std. Dev.	Mean	Std. Dev.	T	Sig. (two tailed)
Psychological wellbeing total (DV)	164.245	19.342	167.452	22.907	-.961	.338

As can be seen from table 2 below, an independent-samples t-test was conducted and there was no significant difference between males (M = 167.45, SD = 22.91) and females (M = 164.25, SD = 19.34) in their total psychological wellbeing scores. df (207) =-.961, p =.338 (two-tailed).

3.2 Relationship between the Variables Under the Study

In an attempt to investigate the association between the independent variables (sex, locus-of- control, coping styles) & dependent variables (psychological wellbeing and its sub dimensions) in the study, a Pearson product moment correlation coefficient test was computed.

Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. As can be seen from table 3, locus of control was negatively and significantly related to all sub dimensions of psychological well-being (p 0.05). Concerning coping styles with psychological wellbeing totals and sub dimensions, table 3 is displayed as follows. Problem-focused coping style was positively and significantly related to all the sub dimensions of psychological wellbeing and its total scale (p 0.01). More importantly, a problem-focused coping style was positively and significantly related to total psychological wellbeing (r =.421, p 0.01). In contrast, the avoidance coping style was negatively and significantly related to all sub dimensions of psychological well-being and its total scale (p 0.01). In addition, the emotion-focused coping style was negatively and significantly related to only autonomy (r =.156, p 0.05) and environmental mastery (r =.143, p 0.05). However, coping style as a total scale was significantly and positively related to only the autonomy sub dimension of psychological wellbeing (r =.155, p 0.05).

Table 3 below shows that locus-of-control shown negatively and significantly compared to psychological wellbeing total with (t (207) =-3.679, p 0.01). In contrast, sex did not show a statistically significant association with overall psychological well-being (t(207) = 0.887, p > 0.05). The results presented in the table further indicate that locus of control emerged as a significant negative predictor of psychological well-being. The regression analysis demonstrates that locus of control accounted for 6.6% of the variance in psychological well-being. This suggests that participants who tended toward an external locus of control were more likely to report lower levels of psychological well-being, indicating a detrimental influence of external control beliefs on respondents' mental health status.

3.3 Predicting Psychological wellbeing from Coping styles (PFCS, EFCS & AVCS)

Other independent variables examined to predict the psychological wellbeing of the respondents were coping styles. In order to know the contribution of coping styles in predicting psychological wellbeing, multiple regression was also done.

Table 3: Results of Pearson correlation test for examining the relationship between the study variables under the study

Variables	Sex	LOC	PFCS	AVCS	EFCS	A	EM	PG	PRS	PIL	SA	PWB Total
Sex**	1.00											
Locus of control	-.028	1.00										
Problem Focused Coping	-.039	-.176*	1.00									
Avoidance Coping	-.018	.233**	.049	1.00								
Emotion Focused Coping	.000	-.028	.599**	.419**	1.00							
Autonomy	.001	-.164*	.350**	-.142*	.156*	1.00						
Environmental mastery	.039	-.171*	.411**	-.280**	.143*	.413**	1.00					
Personal growth	.114	-.166*	.289**	-.315**	-.101	.381**	.387**	1.00				
Positive relationship with other	.137*	-.185**	.311**	-.269**	.069	.360**	.485**	.467**	1.00			
Purpose in life	.021	-.163*	.230**	-.315**	-.064	.319**	.282**	.428**	.408**	1.00		
Self acceptance	-.025	-.224**	.243**	-.311**	.008	.363**	.476**	.495**	.513**	.398**	1.00	
Psychological wellbeing total	.067	-.249**	.421**	-.386**	.038	.648**	.687**	.739**	.747**	.709**	.745**	1.00

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Note: Control point PFCS stands for Problem Focused Coping, AVCS stands for Avoidance Coping, and EFCS stands for Emotion Focused Coping. A: Independence, EM stands for environmental mastery.PG: Personal development, PRS: Positive interpersonal relationships PIL: Life's Purpose, Self-acceptance and PWB total: Psychological wellbeing total

Table 4: Results of multiple regression analysis for Predicting Psychological wellbeing from three Coping styles (N=209)

Variables	Un standardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Problem Focused Coping	1.604	.231	.507	6.933	.000
Avoidance Coping	-1.538	.273	-.363	-5.626	.000
Emotion Focused Coping	-.540	.381	-.114	-1.416	.158

**p< .01

In table 4, problem-focused coping and avoidance coping is significant indicator of psychological well-being. According to the table, problem-focused coping style was significantly and positively predicted psychological wellbeing (t = 6.933, p 0.01), whereas avoidance coping style was significantly and negatively predicted psychological wellbeing (t =-5.626, p 0.01).However, emotional-focused coping style was not significantly predicted by psychological wellbeing (t =-1.416.887, p > 0.05).

The regression model summary reveals that 35% of the total variation in the dependent variable (psychological wellbeing) can be explained by the combined problem-focused coping and avoidance coping styles. The findings imply that problem-focused coping styles had a The findings indicated that problem-focused coping had a positive influence on respondents' psychological well-being, whereas avoidance coping exhibited a weaker, negative effect. Considering the standardized beta coefficients, the variable with the highest beta value—disregarding negative signs—was (β = .51, corresponding to problem-focused coping. This implies that problem-focused coping made the strongest unique contribution to predicting psychological well-being after accounting for variance which explained with other variables that the model included.

A stepwise-regression method has been employed to evaluate the relative contributions of each predictor variable in predicting the criterion variable and to identify the strongest predictor.

As it can be seen from the stepwise regression analysis table above, the predictor variables considered in this analysis are problem-focused coping style and avoidance coping style. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity were tested and satisfied. In the first step of the regression analysis, the problem-focused coping style (PFCS) accounted for 17.8% of the variance in psychological well-being. When both PFCS and the avoidance coping style (AVCS) were included in Step 2, the model's total explained variance increased to 34.3%, F(4, 421) = 53.846, p < .001. The inclusion of AVCS contributed an additional 16.6% of the variance in psychological well-being after controlling for PFCS, ΔR^2 = .343, F change (2, 421) = 52.001, p < .001. In the final model, only these two coping styles emerged as significant predictors, with PFCS showing a stronger effect (β = .421, p < .001) compared to AVCS (β = –.408, p < .001). This indicates that, among participants, the problem-focused style of coping serves the healthier predictor for psychological wellbeing.

Table 5: Result of stepwise regression analysis for predicting Psychological wellbeing from coping styles (PFCS and AVCS)

Model	Variables	Un standardized Coefficients		Standardized Coefficients					
		B	Std. Error	Beta	T	Sig.	R2	Δ R2	F
1	Problem focused Coping	1.332	.199	.421	6.684	.000	.178	.178	44.672
2	Avoidance Coping	-1.727	.239	-.408	-7.212	.000	.343	.166	52.011

**P<0.01

4 Discussions

The results of current research revealed that participants generally exhibited an exterior locus- of-control orientation, as indicated by their mean scores (M = 20.20, SD = 4.882), which exceeded the median cutoff point for internal orientation. This suggests that many PGDT trainees tend to fear of the external factors such as fate, chance, or the influence of others, rather than perceiving themselves as agents of control.

Regarding coping profiles, problem-focused coping emerged as the most frequently practiced strategy (M = 37.80, SD = . . .). This indicates that most trainees attempt to deal with stressful situations by actively addressing problems, for example by seeking solutions, drawing on social support, working harder, or engaging in constructive activities.

When considering psychological well-being, the study found that trainees scored above the expected mean across all six sub-dimensions, with a total mean (166.52) exceeding the theoretical average (126). This suggests that, overall, participants reported relatively high levels of psychological well-being.

The correlation analysis revealed a significant negative association between external locus of control and psychological well-being at both the overall and sub-dimensional levels ($r = –.249$, $p < .01$). Further regression analysis confirmed that outside points of control significantly & negatively predicted psychological wellbeing, $t(207) = –3.679$, $p < .01$. These findings are consistent with previous studies showing that trainee with an external orientation tend to show minimum levels of psychological functioning (Uma & Manikandan, 2017; Mobarakeh *et al.*, 2015). This suggests that trainees who perceive life events as being outside their personal control are more prone to reduced well-being.

Additionally, the study investigated the influence of coping strategies. Finding indicated that problem-focused coping was positively compared to psychological wellbeing, whereas avoidance coping exhibited a negative relationship. In other words, reliance on avoidance-based coping mechanisms was linked to poorer psychological outcomes. Supporting this conclusion, Farzana, Shahina, and Shah (2016) also reported that coping styles play a crucial part in changing a trainee's psychological wellbeing. Emotion-focused coping, however, showed no significant association with overall well-being, except in relation to autonomy and environmental mastery. This outcome is consistent with prior research suggesting that active problem-solving strategies enhance well-being (Parsons, Frydenberg, & Poole, 1996), whereas avoidance strategies are often linked to poorer outcomes, including higher stress and psychological distress (Murray-Harvey *et al.*, 2002).

Overall, the findings imply that trainees who adopt active, solution-oriented coping approaches experience higher psychological well-being, whereas reliance on avoidance strategies undermines their functioning. The results reinforce the idea that coping styles play a central role in shaping students' mental health and adaptive capacity. Furthermore, the dominance of external locus of control among trainees points to the need for interventions that foster internal control beliefs, which may help improve their resilience and well-being.

5 Conclusion and Recommendations

Based on the study findings, it is concluded that locus of control, especially externally oriented LOC, has a negative effect on PGDT trainees' overall psychological well-being. Similarly, the avoidance coping style has a negative effect on students' overall psychological well-being. In contrast, a problem-focused coping style has a beneficial effect on having better psychological wellbeing among university students.

Suggestions for Further Research

With regards to the numerous limitations of this study, the following suggestions are put forward by the researcher for further research: embarking on a similar study with more participants from various institutions/universities and conducting related studies using variables such as age, locality, economic status, self-concept, and a slew of others as variables that may impact university students' psychological well-being.

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Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

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The Relationship between Students Speaking Achievement and Foreign Language Speaking Anxiety

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Abstract

The present study investigated the sources of foreign language speaking anxiety and examined its relationship with students' oral performance. The participants were 135 Grade 12 students selected randomly from the social science and natural science streams at Hawassa Addis Ketema Preparatory and Secondary School. Data were gathered through a 28-item Foreign Language Speaking Anxiety Scale (FLSAS) and a researcher-developed speaking achievement test. Students' oral performance was evaluated using the speaking test, while Pearson's Product–Moment Correlation was employed to determine the relationship between anxiety and achievement. An independent samples t-test was also conducted to examine possible gender-based differences in anxiety levels and speaking performance. The findings identified four major contributors to speaking anxiety: fear of oral examinations, negative self-assessment of speaking ability, comparison with classmates, and concern about unfavourable evaluation. Statistical analysis revealed a strong inverse relationship between speaking anxiety and speaking achievement, indicating that higher anxiety levels are associated with lower oral performance. However, the results showed no statistically significant differences between male and female students in either anxiety or speaking achievement. The study highlights the importance of minimizing anxiety-provoking classroom practices to enhance students' oral communication skills.

1 Introduction

1.1 Background of the Study

English has established itself as a global medium of communication due to its widespread use in international trade, diplomacy, telecommunications, scientific writing, and entertainment. It functions as a lingua franca among both native and non-native speakers, making competence in English communication an essential skill worldwide.

In the education sector, English holds a particularly influential role. As Brown (2001) noted, since English is integral to the academic system, decisions regarding quality instruction must align with the broader educational goals. Similarly, Awol (1999) emphasized that students' future prospects are largely tied to their performance in English, while the Ethiopian Ministry of Education (2002) underscored the language's significance within the Ethiopian education system. Consequently, in most Ethiopian schools, English is taught as a subject beginning in grade one and becomes the primary medium of instruction from grade five onwards.

Effective communication skills are vital for cultural

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transmission, personal development, and active participation in society. English language teaching, therefore, aims to build learners' communicative competence and foster interest in learning the language. Instruction typically covers the four macro-skills listening, reading, speaking, and writing with students expected to apply English both inside and outside the classroom. Language learning does not occur in isolation but is embedded in social and situational contexts, where speakers rely on linguistic and communicative competence to interact successfully (Guyueguo, 1988). As noted by Cummins (1994), spoken communication constitutes a fundamental component of ESL learning; however, many students regard speaking as the most challenging among the language skills. Similarly, Levelt (1993) points out that speaking is one of the most valued human activities, as individuals devote several hours daily to persuading, narrating, instructing, and engaging in conversations with others.

Speaking itself is a highly complex activity that integrates cognitive, linguistic, and motor processes, and it plays a central role in communication. Developing oral skills not only supports learning but also strengthens social interactions (Dorgham, 2011). In line with this, Alia (2007) described speaking as a challenging mental and productive process. Brown (2001) also defined speaking as an interactive act that requires producing, receiving, and processing information. Harmer (2001) explained that oral communication involves both accuracy correct use of grammar, vocabulary, and pronunciation and fluency, or the ability to express ideas spontaneously.

Scholars in second/foreign language education widely agree that speaking proficiency lies at the heart of language learning (Biggs & Move, 1993; Ellis, 1988; Liu, 2001). However, learners' speaking skills are often shaped by a variety of factors, with anxiety being one of the most critical affective elements (Gardner, 1985; Horwitz & Cope, 1986; Gardner, Tremblay, & Masgoret, 1997). Studies, particularly in Western contexts, have consistently examined how foreign language anxiety relates to speaking proficiency and achievement. Horwitz (1986) and MacIntyre & Gardner (1994), for example, reported that such anxiety is linked to negative emotional responses in language learning. Horwitz and Cope (1986) further argued that while communicative competence should be the focus of language classes, anxious learners often find this emphasis especially difficult to manage.

Anxiety in language classrooms is a widespread phenomenon. Basic (2011) described speaking anxiety as a fear of oral expression that hinders student performance. Learners experiencing such anxiety often struggle to concentrate, worry about making mistakes, and may remain silent during group discussions instead of participating actively.

Despite various efforts by the Ethiopian government to improve English language teaching, the overall achievement of preparatory school students remains unsatisfactory. Tesfaye (2012) highlighted serious concerns about students' proficiency, noting that many who enter universities and colleges lack adequate communicative competence in English. Alarmingly, even some teachers at primary, secondary, and higher education levels demonstrate insufficient English skills.

In general, Ethiopian students and in particular grade 12 learners at Hawassa Addis Ketema Preparatory School face persistent challenges in English, with speaking being one of the weakest skills. Many students experience heightened anxiety when required to present their work or engage in classroom discussions. Therefore, this study aims to examine the relationship between speaking anxiety and speaking performance, guided by the following research questions:

1. What are the major causes of speaking anxiety for Grade 12 students?
2. Is there a correlation between students' speaking achievement and speaking anxiety?
3. Is there any statistically significant mean difference between male and female students speaking anxiety and achievement?

1.2 Review of Related Literature

Defining Language Anxiety

Anxiety can be broadly described as a psychological condition marked by inner tension, unease, and

persistent concern. As noted by Spielberger (1983, cited in Awan *et al*., 2010), it reflects an individual's internal emotional state characterized by apprehension, nervousness, and bodily activation through the autonomic system. Likewise, Sillamy (1996, cited in Idri, 2012) defined it as an affective state involving insecurity and discomfort. Within the domain of second or foreign language acquisition, Gardner and MacIntyre (1993) viewed anxiety as an unfavorable emotional response that arises when learners must perform or communicate using the target language. Collectively, these perspectives indicate that researchers have not reached a single, universally accepted definition of anxiety. Instead, the concept remains multifaceted, incorporating both emotional and physiological dimensions.

Foreign Language Speaking Anxiety

Over recent decades, extensive studies have investigated the phenomenon of anxiety in foreign language learning, addressing its causes, outcomes, and strategies to mitigate its effects (Brown, 1974; Horwitz *et al*., 1986; Krashen, 1985; Oxford, 1999; Aida, 1994; Idri, 2012). Among the various forms of anxiety, the one associated with oral communication has drawn growing scholarly attention, as speaking is often identified as the skill that provokes the highest tension among learners (Cheng *et al*., 1999; Fang-peng & Dong, 2010; Subaşı, 2010; Liu, 2007; Gregersen & Horwitz, 2002; Kitano, 2001; Tsiplakides & Keramida, 2009). For many individuals, speaking in a foreign language induces apprehension and fear of failure (Cheng *et al*., 1999).

Classrooms that emphasize oral performance frequently heighten this anxiety. Horwitz *et al*. (1986) noted that learners with speaking anxiety often feel nervous, fearful, or worried when required to speak, largely due to their belief that they must perform flawlessly. When students compare themselves to native speakers or more proficient peers, they may perceive their pronunciation or fluency as inadequate (Kitano, 2001). Anxiety can also manifest in physical reactions such as trembling, sweating, or nausea (Boyce *et al*., 2007). Some highly anxious learners may even avoid participation, skip classes, or discontinue language learning altogether.

Although speaking anxiety is a major barrier to successful language learning, it can be alleviated through intentional pedagogical approaches. By identifying the main sources of anxiety, teachers can foster a supportive classroom environment that minimizes pressure and encourages students to engage more actively in speaking activities. Creating opportunities for low-stakes practice is one of the most effective means of enhancing students' oral performance.

Theoretical Perspectives on Language Anxiety

Research on foreign language anxiety has been guided by several theoretical models. Horwitz, Horwitz, and Cope (1986) conceptualized it as a distinct affective construct that significantly impedes language acquisition. They developed the Foreign Language Classroom Anxiety Scale (FLCAS), a 33-item instrument widely employed to measure learners' anxiety levels. Their model identifies three principal components: (a) communication apprehension, the difficulty of expressing ideas; (b) fear of negative evaluation (FNE), or concern about being judged; and (c) test anxiety, arising from examination pressure. These factors collectively discourage learners from engaging in communicative tasks and may ultimately lead to avoidance of language learning.

Similarly, Krashen's (1985) Affective Filter Hypothesis emphasizes the influence of emotions—such as motivation, confidence, and anxiety—on second language acquisition. He proposed that elevated anxiety creates a "mental barrier" that obstructs the effective processing of linguistic input. Consequently, when the affective filter is high, learning becomes inefficient regardless of exposure to input. Krashen therefore advocates for low-stress, supportive classroom settings that reduce embarrassment and promote emotional comfort during communication.

2 Research Design and Methodology

2.1 Research Design

This study adopted a correlational research design to explore the association between students' speaking anxiety and their speaking performance. Such

a design was chosen because it allows investigation in natural classroom contexts, unlike experimental designs that are often conducted under controlled conditions. Thus, the correlational approach offered an opportunity to examine the relationship between variables in real-life educational settings.

2.2 Subjects of the Study

The research targeted grade 12 students at Hawassa Addis Ketema Comprehensive and Preparatory School. A total of 135 learners (74 females and 61 males) from both natural science and social science streams took part. Participants were randomly selected, and although the female group was slightly larger, the sample as a whole provided balanced representation of both genders.

2.3 Instruments of Data Collection

Data for the study were collected using two primary instruments: the Foreign Language Speaking Anxiety Scale (FLSAS) and a speaking performance test. The FLSAS, initially developed by Huang (2004) and subsequently modified by Hassan (2009), served as the main tool for assessing learners' levels of speaking anxiety. The questionnaire consisted of two major sections—the first gathered background details such as participants' age, gender, and academic stream, while the second included items designed to gauge their degree of anxiety when speaking a foreign language. Participants indicated their responses on a 5-point scale, ranging from strong agreement to strong disagreement.

The speaking achievement test was designed to assess students' oral proficiency. In line with Knight's (1992) suggestions for evaluating speaking, the test incorporated a rubric based on criteria such as pronunciation, vocabulary, grammar accuracy, fluency, communication, and interaction. Each criterion was scored using descriptive performance levels (e.g., excellent, satisfactory, needs improvement).

For this study, the speaking test was adapted from the Grade 12 English for Ethiopia textbook (old edition, p. 40). Students were asked to narrate a short story based on a series of four pictures depicting the familiar fable of the rabbit and the tortoise. Their responses were videotaped to ensure accurate and repeated evaluation.

In this particular study, Knight's (1992) criteria were used. These criteria are:

- Communicating clearly and effectively without making practically any mistakes in all aspects (9 - 10 points).
- Making few mistakes in pronunciation, intonation, vocabulary, grammar, fluency and interaction (7 -8 points).
- Making more mistakes and not clear some of the time to be heard (5 - 6points).
- Making lots of mistakes in all aspects and very hard to understand (3 - 4 points).
- Unable to perform the task at all (1 - 2 point).

2.4 Data Gathering Procedure

First, the speaking test from the old English for grade 12 students' text book was administered. As mentioned earlier, the test was narrating the story in the picture. While students' were narrating the story, they were videotaped. This was done to help the researcher watch the video so many times and evaluate the students' performance. After the students finished the test, 135 students were asked to rate the foreign language classroom speaking anxiety scale (FLSAS). For the administration of the questionnaire, first, the teacher with his colleague who teaches in the same school gathered the students in a school hall. Then gave a brief explanation of the main objectives of the questionnaire and asked them to respond honestly and frankly and then all the questionnaires were collected.

2.5 Method of data analysis

The data were processed using SPSS version 20. Descriptive statistics, including means and standard deviations, were employed to summarize students' responses from the FLSAS. To explore the association between speaking anxiety and performance, Pearson's product–moment correlation was calculated. In addition, an independent samples t-test was carried out to identify any statistically significant differences in speaking anxiety and achievement between male and female participants.

3 Results

Two groups of students from the same school participated in the study. The first consisted of 70 students from the natural science stream, while the second included 65 students from the social science stream, all at grade 12 level in Hawassa Addis Ketema.

Data were collected through two instruments: the Foreign Language Speaking Anxiety Scale (FLSAS) and a speaking achievement test. The questionnaire responses were analyzed item by item to identify the main sources of speaking anxiety. Around the FLSAS choices were worded negatively; therefore, these were opposite recorded to ensure consistency in interpretation.

To classify levels of anxiety, scores were grouped into three categories: low, moderate, and high. Considering that the minimum possible score was 28 and the maximum 140, the total range (112) was divided into three equal parts. A score up to 65.3 represented low anxiety, between 65.3 and 102.6 indicated moderate anxiety, and above 102.6 reflected high anxiety (Hanssen, 2009).

As shown in Table 1, several items for the moderately and highly anxious groups had median scores of 4.00 or above, suggesting strong agreement with those statements. In contrast, only a few items received such high ratings from the low-anxiety group. This indicates that students with higher levels of anxiety were more likely to view multiple classroom situations as stress-inducing.

For the purpose of analysis, only items that met certain response thresholds were considered. Specifically, for the moderately anxious group, items with an agreement rate (agree/strongly agree) of 50% or more were selected. For group highly anxious, questions having shared agreement/disagreement rate of 70% or higher were included in the analysis. Items reflecting facilitating conditions (such as items 2, 3, 13, 15, 20, and 21) were excluded, since they do not directly represent sources of anxiety. The subsequent table summarizes the items selected for examining both moderate and high levels of anxiety.

Table 1: Descriptive statistics of the responses of low, moderately and highly anxious participants to 28 items on the FLSAS

Item No	Min.	Max.	Median	Min.	Max.	Median	Min.	Max.	Med.
1. I feel anxious while speaking English in class	1	2	1	1	5	4	1	5	4
2. I feel less nervous about speaking in English in front of others when I know them. (+)	3	4	4	1	5	4	4	5	5
3. I feel very relaxed about speaking in English class when I study the planned contents before the class. (+)	3	5	3.5	2	5	4	4	5	5
4. I am anxious in class when I am the only person answering the question asked by my teacher in English class. (+)	1	2	1	1	5	3	4	5	5
5. In English class I start to panic when I know I will be graded in oral activities.	1	1	1	1	5	4	5	5	5
6*. I fear giving a wrong answer while answering questions in English class.	1	1	1	1	5	3	1	5	5
7. I enjoy English class when I know that we are going to discuss in English. (-)	1	4	4	1	5	3	1	5	5
8. I feel very embarrassed when I speak in English at the front of the class. (+)	1	2	2	1	5	3	1	5	5
9. Because of being corrected by my teacher, I am afraid of going to the speaking class. (+)	1	1	1	1	5	3	3	5	5
10. I feel nervous when I take part in a group discussion in class. (+)	1	3	2	1	5	3	3	5	5
11. I think my classmates speak English better than me, I am nervous about speaking in oral activities.	1	2	1	1	5	3	1	5	4
12. I worry about oral presentation tests in English.	1	4	2.5	1	5	4	2	5	4
13. I would feel better about speaking in English if the class were smaller. (+)	1	4	4	2	5	4	1	5	4
14. I get anxious when I cannot express my thoughts effectively while speaking English	1	2	1.5	1	5	4	3	5	4
15. I am more willing to speak in English class when I know the scheduled oral activities. (+)	1	4	3.5	1	5	4	3	5	4
16*. I feel relaxed in pair-work activities (-)	1	3	1.5	1	5	3	4	5	5
17*. I like going to class when I know that oral tasks are going to be performed. (-)	1	4	2.5	1	5	3	4	5	4
18*. I know that everyone makes mistakes while speaking in English, so I am not afraid of being laughed at by others. (-)	1	4	2.5	1	5	3	4	5	4
19*. I like to volunteer answers in English class. (-)	1	1	1	1	5	3	1	5	4
20. I am more willing to get involved in class when the topics are interesting. (+)	3	4	4	2	5	4	1	5	4
21. I don't feel tense in oral tests if I get more practice speaking in class. (+)	1	4	2	1	5	4	1	5	3
22. I feel uncomfortable when my teacher asks other students to correct my oral practice in class. (+)	1	4	1	1	5	3	4	5	3
23*. I do not feel pressure when my teacher corrects my oral mistakes in class. (-)	1	4	3.5	1	5	2	1	5	3
24. Gong to English conversation class makes me more nervous than going to other class.	1	4	1.5	1	5	1	4	5	5
25. I worry about oral presentation tests in English class.	1	4	1.5	1	5	1	3	5	5
26. I feel nervous in group work activities. (+)	1	4	2.5	1	5	2.5	3	5	5
27*. During an oral test, I do not feel nervous. (-)	3	4	3.9	1	5	4	2	5	5
28. Even if I am well prepared for the planned contents, I feel anxious about speaking English. (+)	1	2	1	1	5	2	3	5	5

* The items which were reversely scored.

Table 2: Median scores and percentages of the responses to the items that were chosen to analyze for the two anxiety levels

Moderately anxious				**Highly anxious**			
	Item Number	Median	%		Item Number	Median	%
14.	I got anxious when I cannot express my thoughts effectively while speaking English.	4.00	73.3	5.	In English class, I start to panic when I know I will be graded in oral activities.	4.00	93.3
27*.	During an oral presentation test, I do not feel nervous.	4.00	65.6	27*.	During an oral presentation test, I do not feel nervous.	4.00	87
12.	I worry about oral presentation test in English.	4.00	62.2	1.	I feel anxious while speaking English in class.	4.00	78.4
1.	I feel anxious while speaking English in class.	4.00	59.7	11.	If I think my class mates speaking English better than me, I am nervous about speaking in oral activities.	4.00	84
				14.	I get anxious when I cannot express my thoughts effectively while speaking English.	4.00	82
				25.	I stumble when I answer questions in English.	4.00	80.3
				12.	I worry about oral tests in English class	4.00	78.4
				6.	I fear giving a wrong answer while answering questions in English class.	4.00	74
				24.	Going to English conversation class makes me more nervous than going to other class.	4.00	71.4

* The items which were reversely scored

Considering the finding in table 2, when the data from the highly anxious group were examined, nine major classroom situations emerged as significant triggers of speaking anxiety. The highest-rated causes were linked to oral examinations, particularly being graded during oral activities (item 5) and oral tests in general (item 27). This was further reinforced by responses to item 12, which also addressed oral presentations.

Another common factor was general classroom speaking anxiety (item 1), as many students expressed unease when required to speak in front of others. Related to this, several participants reported discomfort about conversation classes (item 24) and about answering questions during class discussions (item 25).

Comparison with others also surfaced as an important issue. Responses to item 11 revealed that students often felt anxious when they believed their classmates spoke better English than they

did. Similarly, item 14 indicated that students' self-assessment of their speaking ability influenced their confidence, with negative self-evaluation leading to heightened anxiety. Finally, item 6 reflected the fearing of responding incorrect answer, which related with the fear of to be evaluated negatively.

For the ascetically group of anxious, four main situations were identified, all of which overlapped with those of the highly anxious students. The most significant was difficulty in expressing ideas effectively (item 14). Oral tests (items 27 and 12) were also major concerns, along with general anxiety about speaking in class (item 1).

Taken together, the results suggest that both moderately and highly anxious learners are influenced by four central factors: oral examinations, self-assessment of speaking ability, comparison with peers, and fear of negative evaluation. Items such as 1, 24, and 25 were considered broader indicators of general speaking anxiety rather than distinct categories.

To check the correlation b/n speaking achievement & speaking anxiety, the scattered plot was used. The scattered plot is a plot that is used to check the relation of two variables.

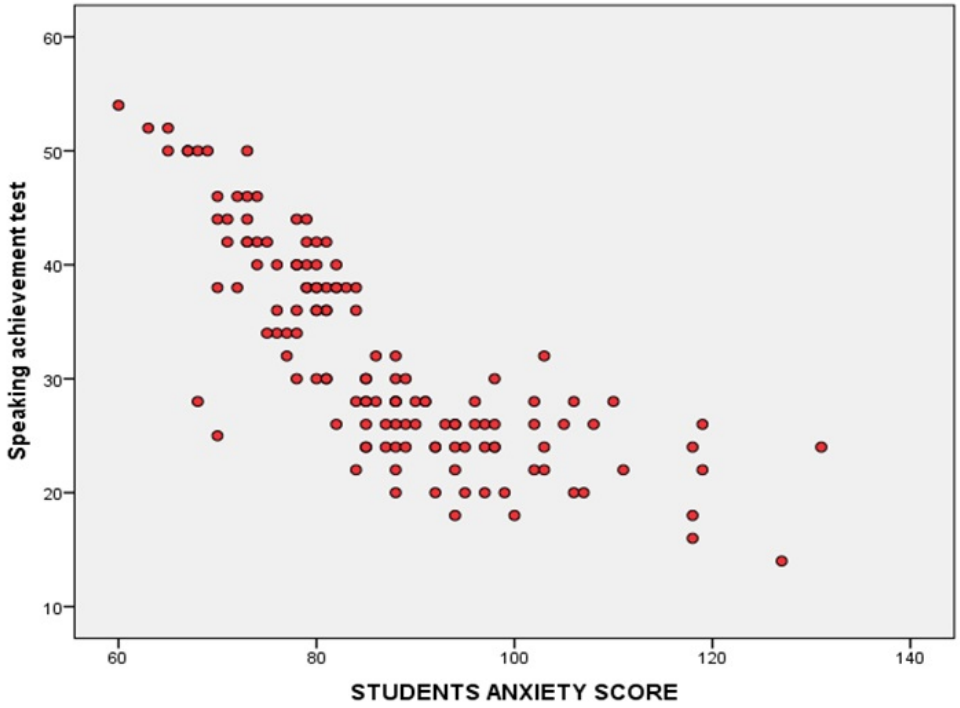

Figure 1: Descriptive statistics of male and female on the result of achievement and anxiety

The scatter plot illustrates a clear negative association between speaking test performance and anxiety speaking foreign language across the sample. Learners who obtained bigger scores on the speaking comprehension-test (displayed on the vertical axis or 'y') generally showed lower levels of anxiety (represented on the horizontal axis or 'x'). Conversely, students with lower achievement scores tended to report higher levels of speaking anxiety.

The pattern in the plot demonstrates that as one variable (speaking test score) increases, the other (anxiety score) decreases. In other words, lower test performance is associated with greater anxiety. This trend confirms the presence of a negative correlation between the two measures, justifying the use of a Pearson product-moment correlation to analyze their relationship.

Table 3: Correlation coefficient between language anxiety and English speaking achievement

Students anxiety score	Pearson Correlation	1	-.759**
	Sig. (2-tailed)		.000
	N	135	135
Speaking proficiency test	Pearson Correlation	-.759**	1
	Sig. (2-tailed)	.000	
	N	135	135

**. Correlation is significant at the 0.05 level (2-tailed).

Based on Table 3, the correlation coefficient was found to be -.759, which is statistically significant at the 0.05 level. This negative correlation suggests that higher levels of anxiety are associated with lower achievement. In statistical terms, when the correlation is negative and the significance level falls below the threshold, it implies that anxiety has a detrimental effect on students' performance. The present study confirmed that anxiety hinders the achievement of grade 12 students, a result consistent with previous research in this area.

The third research question examined whether male and female students differ significantly in their speaking anxiety and performance. To examine this issue, an independent-samples t-test was conducted. As shown in Table 4, male students recorded a mean anxiety score of 100.57 with a standard deviation of 14.82. The corresponding mean and standard deviation for the comparison group were also calculated.

Table 4, indicated that the mean and standard deviation for male students' anxiety level was 100.57 and 14.82. The mean and standard deviation for female students' anxiety level was 102.67 and 14.19. The mean and standard deviation for male students' speaking achievement was 33.44 and 8.68. The mean and standard deviation for female students' speaking achievement was 30.95 and 9.67.

Table 4: Descriptive statistics of independent samples *t*-test

	N	Minimum	Maximum	Mean	Std. Deviation
Anxiety score of male	61	80	171	100.57	14.826
Speaking proficiency test of male	61	20	52	33.44	8.680
Anxiety score of female	74	75.00	142.00	102.6757	14.19831
Speaking proficiency test of female	74	14.00	54.00	30.9595	9.67760

Table 5: Independent samples t-test of males and females in tests of speaking achievement and anxiety of speaking

Independent Samples Test										
		Lerner's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df.	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference	
									Lower	Upper
Students anxiety score	Equal variances assumed	.259	.612	-.839	133	.403	-2.102	2.505	-7.057	2.853
	Equal variances not assumed			-.836	125.879	.405	-2.102	2.516	-7.080	2.876

As shown in Table 5, the t-test value for anxiety level is -.848, and the significant value is .398. The t-test value for achievement is 1.579, and the significant value is .117. Since the significant value for both anxiety and achievement is greater than .05, it can be concluded that there is no statistically significant difference between male and female students' anxiety level and achievement.

4 Discussion

The first research question aimed to identify the main sources of speaking anxiety. The results indicated four broad factors contributing to students' anxiety: oral presentation tests, self-evaluation of their speaking ability, comparisons with peers, and fear of negative judgment. These outcomes are consistent with the works of Horwitz *et al*. (1986) and MacIntyre & Gardner (1994), who argued that language anxiety plays a significant role in triggering students' negative emotions toward language learning. The results also align with Horwitz and Cope (1986), who emphasized that focusing on the oral component of language forces students to comprehend what others say and attempt to express themselves in the target language. Nevertheless, because English is the medium of learning, the demand for communicative competence creates notable challenges, especially for anxious learners.

The research question 2 examined the association between students' speaking performance and their speaking anxiety. Findings revealed a strong negative correlation between the two variables, showing that higher anxiety is associated with lower achievement. This result mirrors the conclusions of Horwitz (1986) and MacIntyre & Gardner (1994), who reported that foreign language anxiety produces unfavorable emotional responses in learners. It also supports Horwitz and Cope's (1986) claim that focusing on spoken aspects of language requires students to process what others say while articulating their own thoughts in English an expectation that becomes especially demanding for those experiencing high levels of anxiety.

The third research question investigated whether gender differences exist in speaking anxiety and performance. The analysis showed no statistically significant difference between male and female students regarding either variable. This finding corroborates Hassan (2009), who likewise observed that gender does not significantly influence speaking anxiety or achievement levels.

5 Conclusion

This study aimed to examine the primary causes of speaking anxiety and to explore its relationship with speaking performance among grade 12 students at Hawassa Addis Ketema. The findings identified four main sources of anxiety: oral examinations, peer comparison, self-evaluation of speaking ability, and fear of negative assessment. Students' responses to the questionnaire further revealed that linguistic challenges (such as pronunciation difficulties and limited vocabulary), teachers' approaches, and large class sizes also contributed to their speaking anxiety in this context. Since anxiety is recognized as a critical factor influencing second language learning, its negative impact on students' language performance has long been acknowledged. Therefore, reducing speaking anxiety is essential to improving learners' oral performance.

The results also demonstrated a strong negative relationship between students' speaking anxiety and their speaking achievement, with a correlation coefficient of .759, which was statistically significant at the 0.05 level. Regarding gender, the analysis showed that girls exhibited slightly higher anxiety levels (.403) associated to males (.405). However, this variation was not statistically significant.

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Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical approval

Consent was sought from the research participants. Confidentiality was maintained in reporting information.

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