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DILLA JOURNAL OF EDUCATION

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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

Dilla Journal of Education (DJE)

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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 purpose of this study was to investigate the effects of cooperative learning on academic achievement and attitudes towards cooperative learning of first-year mathematics students at Dilla College of Teacher Education in Ethiopia. In doing so, a quasi-experimental study design was employed. Simple random allocation was conducted, one class ($n_1 = 38$) being considered as the experimental group, and the other class ($n_2 = 39$) being considered as the control group. A pretest was administered for both groups before conducting intervention. After eight weeks of instruction, a post-test was administered for both experimental and control group participants. Data analysis was conducted through a paired t-test to determine performance by comparing the mean of both groups at a p 0.05 level of significance. The results confirmed that there was a significant difference in mean test scores between the two groups of participants, $t = 9.358$, p 0.05, with the experimental group scoring higher than the control group. This shows that cooperative learning has great power to improve their academic performance. The descriptive result on students' attitude towards cooperative learning revealed that the majority of the respondents have a positive attitude towards cooperative learning with an over-all mean score of 4.3, which tends to the value of "Agree". This confirms that students have positive outlooks, views, and a propensity towards cooperative learning. To conclude, the results indicated that the cooperative learning approach enhances conceptual understanding more than the regular teaching method. Thus, teachers have to incorporate cooperative learning methods into their teaching-learning process.

1 Introduction

1.1 Background of the Study

According to Gocer (2010), as cited in Odagboyi and Kreni (2017), learners are not isolated individuals but part of a larger society. Children's learning is affected by their homes, parents, peers, and the community as a whole. The goal structures of individuals are directed at the same communally held objectives, and there exists a high interdependence among the goal attainments of individuals (Odagboyi and Kreni, 2017). Odagboyi (2015) also noted that classroom groups with supportive friendship patterns enhance academic learning, while interpersonally tense classroom environments in which peer group rejection is strong and frequent get in the way of learning. Cooperative learning helps satisfy many psychological conditions of man. In a follow-up meta-analysis that examined the degree

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to which achievement is positively associated with motivation in positive (i.e. students are linked together to achieve goals), negative (i.e. students compete to achieve goals), or no interdependence (*i.e.*, students work individually) situations, Johnson, Johnson, Roseth, and Shin (2014) confirmed and found that situations characterized by positive interdependence resulted in greater motivation and achievement than negative or no interdependence situations.

A study by Slavin, Lake, Hanley, and Thurston (2014) ascertained and stated that science teaching methods focused on enhancing teachers' classroom instruction throughout the year, such as cooperative learning and science-reading integration, as well as approaches that give teachers technology tools to enhance instruction, have significant potential to improve science learning and academic performance.

According to Johnson and Johnson (2015), cooperative learning is more than just asking students to sit and work together. Research has identified some components that mediate the effectiveness of cooperative learning, such as: (a) positive interdependence, which allows students to perceive that they are linked with each other in such a way that one cannot succeed unless everyone succeeds; (b) interpersonal and small group skills, which means that students must be taught social skills for high quality cooperation; (c) individual accountability, which gives each member of the group a sense of personal responsibility toward goal achievement; and (d) group processing, which exists when group members discuss how well they are achieving their goals and maintaining their working relationships (Johnson and Johnson 2015). It is thought that the use of a learning plan prepared in line with cooperative learning provides students with more efficient thinking and problem-solving skills and develops students' cooperation skills, enables them to present more extensive studies by making use of their shared experiences, and supports long-lasting learning by supporting peer learning.

A quantitative study done by Zakaria et al. (2010) as quoted in Girma (2018) on the effects of cooperative learning compared to methods that are more traditional with students from a school in Miri, Sarawak indicated that the cooperative learning approach resulted in higher achievement than the traditional teaching approaches (Girma, 2018). According to Antil, Jerkins, Wayne, and Vadasy (1998), as cited in Kefale (2015), traditional instructions, such as lectures, explanations, answer-question routines, assigning reading, and guided practice, focus exclusively on individual academic goals. Traditional methods of teaching were teacher-centered and often created classroom atmospheres in which learners competed with each other. The traditional model fosters competition rather than cooperation, which is favored by the major students. Educators also believe that minority students might fall behind higher-achieving students in this kind of learning environment, *i.e.*, traditional models of competitive learning (Kefale, 2015).

Tesera and Desta (2006) pointed out that despite the strong criticisms of the conventional teacher-based approach in education, the teaching and learning process in most schools in Ethiopia has persisted as being teacher-dominated. Most classes are characterized by a situation where students are made to listen to their teachers and copy notes from the blackboard. Learning by doing, problem solving, cooperative learning, and group approaches are limited. Furthermore, Mekonnen (2011) also said that educators broadly agree that teacher-dominated pedagogy places students in a passive role, which is undesirable. Therefore, from the above research findings, it is possible to understand that in most schools in Ethiopia, cooperative learning is neglected, though ideally the strategy is contemplated. Likewise, Dilla College of Teacher Education is expecting to practice cooperative learning strategies so as to realize the national educational objectives and produce effective teachers. However, from experience and researchers' personal observations, most teachers use old methods of lesson delivery and almost all cooperative learning methods have been put aside by most teachers. In an attempt to contribute to bridging the above revealed gap, this study tried to evaluate the effects of cooperative learning on academic achievement. In addition, it also contributes some basic knowledge or insight about the impacts of cooperative learning and attitudes towards it on behalf of students and any concerned bodies.

Thus, this study addressed the following basic research questions:

1. What is the students' attitude towards cooperative learning?
2. Does the cooperative learning approach have statistically significant effects on the academic achievement of students?

1.2 Review of literature

Basic concepts of cooperative learning

The term cooperative learning has been defined by many scholars. However, most of these attempts to define cooperative learning reflect more or less the same ideas without any radical change. Cooperative learning (CL) is not a simply collaboration or group working as students help other students within groups of four or five persons in an effort to reach goals. Jacobs (1997) as cited inTina (2014) states that CL is more than just putting students in groups and giving them a task, but it is a tool which teachers use to encourage mutual helpfulness in the groups and the active participation of all members, and therefore each of them has his/her responsibility to help all the group mates.

In cooperative learning method the realization of individual objectives is dependent on the overall success of the group. Therefore, the ones who want to be successful are forced to help other group members (Wilkinson, 1994) as cited in Bolukbas (2011). In addition, he states that cooperative learning enables fast learners to help respectively slow learners in terms of improving their skills. In other words, every learner struggles to develop both themselves and other group members because they are aware of the fact that the success of the group depends on the performance of each individual.

According to Kagan & Kagan (1998) as cited in Berhanu (2016), cooperative learning is types of structured peer interaction emphasizing positive human relationships, collaboration between peers, active learning, academic achievement, equal participation & equal status of students in the classroom. It can be used to teach any subject matter, whether that can be foreign language, math, social studies, *etc*. Ogunleye (2011) as cited in Berhanu (2016), also states that cooperative learning refers to a method for organizing learning, in which students are working with their peers towards a shared academic goal rather than competing or working separately from their peers. Although people have attempted to define cooperative learning somehow in different ways, there are some similar concepts in their definitions. Their similarity is that the idea of working together and helping one another is emphasized.

Benefits of using Cooperative learning (CL) on academic performance

In addition to what has been said in the concepts of cooperative learning, many potential benefits arise when cooperative learning is used in the classroom instruction at different levels of grades. Researchers also have argued about the superiority & effectiveness of cooperative learning over competitive and individualistic learning on different grounds.

Some of the benefits of using CL that have been suggested by different scholars are presented as follows:

(A). Students can enhance their social skills: In real life, people need to collaborate with others. In their families, on their jobs, and in their social lives, they need to be able to work with others to everyone's mutual benefits. However, schools have not done enough to prepare students to this purpose. Often times, the students are conditioned to compete with others and view others as enemies who obstruct their own success. Other pupils' failure increases one's own chances of success.

In CL groups, the students can exercise their collective skills and practice working with others to achieve mutual benefits for everyone rather than thinking competitively and individualistically (Freeman, 2000) as cited in Kefale (2015). An essential element of cooperative learning is the appropriate use of interpersonal and small group skills. These social skills include staying with the group, using quiet voices, giving direction to the group's work, encouraging participation, relating present learning to past learning, criticizing ideas without criticizing people, asking probing questions and requesting further rationale (Johnson & Johnson 1990) as cited in Odagboyi & Kreni (2017).

(B). There can be more individualization of instruction: In cooperative learning groups, there is the potential for the students to receive individuals' assistance from teacher and their peers (Long & Porter, 1985) as cited in Kefale (2015). Help from peer's increases both for the students being helped as well as for those giving the help. In other words, for the students being helped, the assistance from their peers enables them to move away from dependence on teachers and gain more opportunities to enhance their academic performance. For the students giving help, the cooperative learning groups serve as opportunities to increase their own academic performance (Farivar & Webb, 1994) quoted in Kefale (2015). Moreover, Brumfit (1984) as quoted in Berhanu (2016) argues "Placing students in small groups assists individualization for each group, being limited by its own capacities, determines its own appropriate level of working more precisely than can a class working in lockstep, with its larger numbers".

(c). Anxiety can decrease: Students often feel anxious to speak in front of the whole class. In contrast, there is less anxiety connected with speaking in the smaller group. When a student represents the group and reports to the whole class, he/she feels more support because the answer is not just from one student alone, but from the whole group (Long & Porter, 1985) as quoted in Kefale (2015). Therefore, Brown (2001) as cited in Berhanu (2016) says, "In group activities, the security of the student will be improved and each individual is not entirely on public display".

(D). Motivation and positive attitude towards class can increase: As cooperative learning groups are interactive; the pace of communication becomes more student-centered than in traditional classroom. In a traditional classroom, a teacher is bound to proceed too slowly for some students and too fast for others. In contrast, students adjust the pace of their communications in cooperative learning groups to the understanding level of their peers. They know if they go too fast, the team will suffer. Over time there develops considerable attention among team members to the understanding level of others (McKernan, 1996), cited in Kefale (2015). Thus, in cooperative learning groups, the students can encourage and help one another. That is, the cooperative atmosphere of working in a small group may help them develop affective bonds among themselves. This, in turn, greatly increases motivation and positive attitude towards their class.

Students' attitude towards Cooperative Learning

As saying of Emina (1986) as cited in Odagboyi & Kreni(2017), attitude is the basis of motivation in learning in general and cooperative leaning in particular. One of the most critical issues for teaching and learning is for the teacher to capture the affection of the learner. This is the key to learning. It will be a catastrophic omission in the process of teaching if the formation of preferred attitude and its evaluation is not deliberatively planned for, and included in the curriculum and in their every day of activities (Odagboyi & Kreni, 2017).

Tina (2014) also corroborated and indicated that 75% students gave positive attitudes towards cooperative learning in enhancing their motivation to speak and engage in learning. Attitude plays an important role in teaching learning process. A learner's attitude to the learning will impact the learner outside the classroom. The study done by Burden (2004) cited in Hagose (2012), showed that a positive attitude would motivate learners to achieve their learning goals. Many research works have been conducted on students' views and classroom practice of cooperative learning. According to Fahad (2009), a study on students' attitude and perceptions towards the effectiveness of mobile learning confirmed that many students believe the importance of CL to improve their retention in the teaching and learning process. Also, in his class students were effective in implementing cooperative learning activities as requirements.

Theoretical model of the study

There are various models regarding cooperative learning approach in teaching-learning process. However, the current researchers followed STAD model for the purpose of current study.

STAD stands for student team achievement divisions; it is a collaborative learning strategy in which small groups of learners with different levels of

ability work together to accomplish a shared learning goal. It was devised by Robert Slavin and his associates at Johns Hopkins University (Innovative Learning, 2009) as cited in Monchai & Sanit (2013), students are assigned to four- or five-member learning teams that are mixed in performance level, gender, and ethnicity.

The teacher presents a lesson, and then students work together within their teams to make sure that all team members have mastered the lesson. Finally, all students take individual quizzes on the material, at which time they may not help one another. Students' quiz scores are compared to their own past averages, and points are awarded on the basis of the degree to which students meet or exceed their own earlier performance. In term of learning achievement using the STAD, a study of Keramati (2009) as cited in Monchai & Sanit (2013), entitled "The effect of cooperative learning on academic achievement of physics course", it is found and explained that experimental group students taught by cooperative learning (STAD technique) are more successful than control group students. At this point, it is found that cooperative learning increased academic achievement of students to a higher level when compared to conventional teaching method (Monchai & Sanit, 2013).

2 Objectives of the Study

2.1 General Objective of the Study

The general objective of this study was to investigate 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.

2.2 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

3 Materials and Methods

In this particular study, a pre-test and post-quasi-experimental study design was employed for its quantitative approach. To that end, an experiment constituted two experiment groups. Accordingly, the students were randomly assigned to each of the teaching methods, namely, independent learner (IL) as the control group and the experimental groups (cooperative discussion group or CDG), in which one top-achieving student leads the other different academic performance levels of students based on the cooperative learning achievement division or student team achievement division (STAD). As revealed in the study by Mattingly and VanSickle (1991), as cited in Molla & Muche (2018), cooperative learning regarding achievement division (CLAD) was the most successful teaching method in which students are organized based on their academic performance into top achievers, middle achievers, and lower achievers discretely. Further, they stated that through CLAD, students must be held individually accountable, and to achieve group objectives, the students must pay for their roles autonomously. This is to mean that the experimental group took learning by the cooperative learning method while the control group thought by the traditional or usual method for eight weeks. The subject matter used and taught in this study was general biology and the central nervous system part or portion covered via a cooperative learning approach.

3.1 Population of the Study

The study was conducted during the period of March 2009 to May 2010 E.C. at Dilla College of Teacher Education Dilla, Ethiopia. The target population of the study was first year mathematics department students.

As data secured from registrar office of the college reveals, the total number of first year mathematics department students were 77, of which 66 were males and the remaining 11 were females.

3.2 Sample and Sampling Techniques

The researchers used a total of 77 students as participants in the study by using simple random assignment to categorize the research teams. One class

(n_1 = 38) is considered the experimental group, and the other class (n_2 = 39) is considered the control group. Both groups include high, middle, and low achievers, males and females, and an ethnically and linguistically diverse representation of the class due to their different backgrounds.

3.3 Data Collecting 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 student's achievement 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.

3.4 Methods of Data Analysis

The data was analyzed using quantitative methods according to the nature of the data. Regarding quantitative data collected, the process of coding items was done, that is, converting responses to numbers for the data entry. In addition, organizing close-ended and structured information was done to analyze the contents. Then, data entry and analysis were done using computer-based software and the Statistical Package for Social Scientists (SPSS) version 21 data processing program. During data analysis, both descriptive and inferential statistics were used. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used for the purpose of assessing and understanding the student's attitudes towards cooperative learning methods. Inferential statistics, specifically, paired sample t-test, were used to compare the mean score of pre-test and post-test results and to see the difference in mean between the experimental and control groups.

4 Results

The central purpose of this study was to investigate the investigative effects of cooperative learning strategies on academic achievement and attitudes towards cooperative learning of students at Dilla College of Teacher Education first-year mathematics department students. In doing so, findings secured via quantitative methodologies are presented as follows:

As shown in Table 1, in order to assess students' attitudes towards cooperative learning, 14 items were raised. To that end, the data in the table show that students had a positive attitude toward cooperative learning (74% strongly agreed and 22.1% agreed, with an agreed mean = 4.7). Most of the respondents thought that group members in cooperative learning should be heterogeneous in ability (50.6 and 35.1% of the respondents strongly agreed and agreed, respectively, and agreed mean = 4.3). A majority of respondents believed that cooperative learning improves students' self-esteem (45.5 and 39% of the respondents strongly agreed and agreed, respectively, and agreed mean = 4.2). Moreover, among the respondents, the majority believed that cooperative learning improves students' productivity (54.5 and 33.8% of the respondents strongly agreed and agreed, respectively, with an agreed mean = 4.4). On the other hand, the table shows that a little more than half of the respondents claimed that cooperative learning has positive effects on students' academic achievement (48.1 and 14.3% of the respondents strongly agreed and agreed, respectively, and the agreed mean = 3.8).

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

In addition to this, 53.2 and 32.5% of the respondents strongly agreed and agreed, respectively, towards the idea that cooperative learning facilitates students to use higher-level thinking strategies (agreed mean = 4.3). From the same table, evidence has been obtained that the majority of the respondents articulated that cooperative learning is important both for students and teachers (48.1 and 33.8%), respectively, and agreed mean = 4.1).

On the other hand, the majority of the respondents thought that teachers should know the essential elements of cooperative learning for successful learning (44.2 and 42.9% of the respondents strongly agreed and agreed, respectively, and agreed mean = 4.3). Moreover, most of the participants believed that cooperative learning is a valuable instructional approach (44.2 and 42.9% of the respondents strongly agreed and agreed, respectively, and agreed mean = 4.3). Finally, the table reveals that a large number of participants thought that cooperative learning makes students responsible for their learning (62.3 and 26% of the respondents strongly agreed, agreed, and agreed, respectively, and agreed mean = 4.4). Generally, the overall response of the participants indicates that the majority of the respondents have a positive attitude towards cooperative learning.

The overall total mean (4.3) tends to the value of "Agree," confirming that students have positive outlooks, views, prospects, and a propensity towards cooperative learning.

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 $p< 0.05$

The paired t test shows that there was no significant difference in general biology pre-test scores (p =.31) between the experimental group (Mean = 28.51, SD = 8.1) and the control group (Mean = 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 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 $p< 0.05$

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.

5 Discussions

In this study, the finding shows that respondents' attitudes towards cooperative learning are positive, i.e., the mean value of the total perception item was 4.3. As described in the data analysis section, this value (4.3) shows that the respondents have a higher score of responses. Hence, the high score of responses referred to the good attitude of respondents to the issue. Thus, the respondents' attitude towards cooperative learning is good and positive in this study. Therefore, the result is in agreement with the study of Mekonen (2011) and Hagose (2012); teachers' and students' attitudes and knowledge have a great impact on the implementation of new approaches. The findings from this study show that students who were taught through a cooperative learning approach achieved statistically significantly higher post-test achievement scores compared to those who were taught through the traditional lecture-based teaching method. This implies that the cooperative learning approach was more effective in enhancing students' achievement scores in biology than the traditional lecture-based teaching methods. For the students giving help, the cooperative learning groups serve as opportunities to increase their own academic performance (Farivar & Webb, 1994, quoted in Kefale (2015). Moreover, Brumfit (1984), as quoted in Berhanu (2016), argues, "Placing students in small groups assists individualization for each group, being limited by its own capacities, determines its own appropriate level of work more precisely than can a class working in lockstep, with its larger numbers. Also, the current study findings align with a study by Slavin, Lake, Hanley, and Thurston (2014) that ascertained and stated that science teaching methods focused on enhancing teachers' classroom instruction throughout the year, such as cooperative learning and science-reading integration, as well as approaches that give teachers technology tools to enhance instruction, have significant potential to improve science learning and academic performance. The findings from the current study showed a statistically significant difference at a significance level of p 0.05 in biology achievement scores with students who had no prior knowledge of the biology content when taught through the cooperative learning approach as compared to the traditional lecture-based teaching approach, and therefore the results are in agreement with the findings of previous research.

6 Conclusion

As the study confirms, most of the students have a positive and good attitude towards cooperative learning in their learning process. Furthermore, this study found that the cooperative learning approach promoted higher academic achievement scores in students' general biology courses as compared to the regular teaching methods. Therefore, the cooperative learning approach enhances conceptual understanding more than the regular teaching method. While using this method, there were significant differences in academic achievement in general biology courses between the two groups, and therefore the approach is appropriate to maximize students' performance in higher institutions.

7 Recommendation

Since cooperative learning improves the academic achievement of students, it is highly recommended as an alternative instructional pedagogy in the current wave of educational reform in Ethiopian higher education. To promote the implementation of cooperative learning effectively, both lecturers and students need to undergo a training course in this kind of learning. Teachers have to consider the usefulness of the cooperative learning approach and should incorporate this approach into their teaching-learning process. Although the present findings support the effectiveness of cooperative learning for students' achievement, the sample size of this study is restricted to only 77 participants. As a result, future research should include more participants in cooperative learning to provide more information on the impacts of cooperative learning in the chosen institution and its catchment area schools.

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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 crises in the United States, India, Brazil, France, and other countries of Europe and Africa (Sintema,

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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.

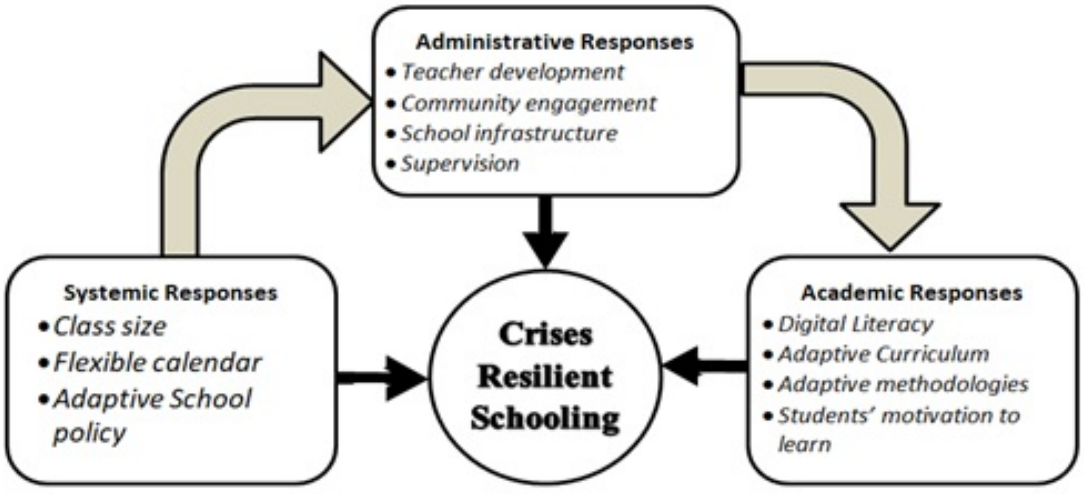

Figure 1: Integrative model for crises resilient school system

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 3,169 in 2013/14. (Ministry of Education, 2015. p.24). However, the number of students with disabilities (SWDs) at higher education institutions (HEIs) remains low (Tirussew, Daniel, Alemayehu, Fantahun, Sewalem, Tilahun & Yirgashewa, 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 experienced HEIs (Addis Ababa, Haramaya, and Adama Science and Technology universities). Abebe (2017) conducted a comparison research

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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) conducted a qualitative case study in Hawassa and Mekelle universities to investigate the situation of students with visual impairments (SWVIs). He discovered that SWVIs faced non-interest-based department placement, inflexible curriculum, non-accommodating assessment, and unfriendly learning/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 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 following research questions were posed in order to achieve the study's goal:

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)?

2 Review of Related Literature

2.1 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 transcendinvestigating inclusion of the students using a measurement scale.

2.2 Examples of Studies focusing on Inclusion of SWDs in HEIs

It must be noted in advance, the studies to be mentioned hereafter were not done using measurement scale, and they were instead qualitative in nature reporting experiences of the students. The studies reported below both at international and national levels indicated mixed results both satisfactory and unsatisfactory and sometimes different scenario among disability types; for the latter it was attributed to different challenges existing in the campus settings.

Internationally, (Matonya, 2016) in her study taking women with disabilities (WWDs) explained education contributed to their development of self-awareness and knowing their identity within the society, transforming from ignorance and illiteracy into literate, well-developed individuals. WWDs also reported meeting with people who face greater challenges than they do and thus learning how to interact and live within the diverse society. Their family and community members started respecting them, involving them in decision-making, listening, allowing them to air their views, and consulting them for advice. Families and community members were able to ask respondents for guidance and counseling regarding siblings and nephews about the importance of education.

Locally, (Yohannes, 2015) asked his respondents about their perceptions of whether they had equal opportunities in learning with their sighted students. They all agreed that they were equal in terms of

having the opportunity to join the HEIs. However, considering the overall learning environment, all three of them strongly argued that they did not have an equal opportunity to learn. They all mentioned different challenges and problems that hampered this equality. The main problem that all of them mentioned was related to materials provision which they described as minimal as compared to what was available for their sighted peers.

Yet, there was another encouraging finding from the country that reported after having SWDs to rate their academic status as below average, average, and above average. They reported that 4.6% of them had below average, 60.8% average, and 34.7% above average status. This is promising that SWDs are performing well in the HEIs. Except for a few HEIs (e.g., Samara and Dilla Universities), the data obtained from students showed that the academic status of students in most HEIs was average (Tirussew *et al*., 2014).

However, studies indicated there are differences among students with different disability types. For example, it was clear that there were differences between the inclusion of deaf/hard of hearing and SWVIs, the students with visual impairments (SWVIs) felt more included (Suubi, 2013). Deaf/hard of hearing students had mixed feelings about their studies: some found the HEIs hard while others thought they were easy. But both deaf/hard of hearing and SWVIs had confidence in their academic abilities. Despite the confidence, deaf/hard of hearing and SWVIs said they did not perform as well as they would have liked due to several challenges they encountered in their academic work. "HEIs were aware of their needs but had done little to meet them" (Suubi, 2013, p. 234).

Levels of inclusion of the SWVIs and deaf/hard of hearing students in the HEIs were not satisfactory. SWVIs felt that they were not fully included while deaf students on the whole felt excluded and 'left out'. Among deaf/hard of hearing participants, only the hard-of-hearing felt included. There were few instances of friendships between deaf students and hearing students and very little interaction between deaf students and their faculties (Suubi, 2013). He further, stated that "levels of satisfaction with their inclusion were much lower among deaf/hard-of-hearing students than among SWVIs" (p. 225).

However, both at international and local level it seemed to be very difficult to get ample studies with similar and or different reports. For example, locally only two studies Tirussew *et al*. (2014) and Yohannes (2015) were found. The lack of inclusion scale in all studies as it may.

Nevertheless, across the globe, though efforts seem to be not made to develop inclusion scale to measure inclusion of SWDs at all levels of education including HEIs, there are initiatives made to realize inclusion of the students as discussed below.

For example, the least restrictive environment (LRE): A fundamental component of special needs education that has been in place since IDEA of 1975, is that SWDs are to be educated in the "least restrictive environment" (20 U.S.C. § 1412(a)(5). LRE creates a presumption that SWDs are to be educated in the regular education classroom to the "maximum extent appropriate".

The other is the universal design of instruction: One approach for addressing accommodation issues is to include accessibility from the beginning of the course development. This inclusive teaching strategy is commonly called Universal Design for Instruction. "Universal Design offers principles for creating a curriculum that is accessible for multiple audiences which includes detailed guidelines for creators of academic content to follow" (McGinty, 2016, p.21). The Universal Design framework follows, "the seven principles established within the field of architecture (these are flexible to use, equitable to use, information is perceptible, simple and intuitive, requires little physical effort, tolerates error and appropriate size and space for use)" (McGinty, 2016, p.22). Dallas, Sprong and Upton (2014) cited in McGinty (2016) stated that Universal Design approaches seek to provide inclusive learning that promotes HEIs learning environments to view disability from a social model as opposed to a medical model. Gale and Mills (2013) identify three dimensions of pedagogy-belief, design, and action-and propose three principles that underpin an inclusive pedagogy: the belief that all students offer value to the learning environment, the design of a pedagogy that values difference, and

actions that work with students rather than impose predetermined actions upon them.

Still, we have also another instrument called the inclusive teaching and learning movement: Inclusive teaching and learning are the methods by which "pedagogy, curricula, and assessment are designed and delivered to engage students in learning that are meaningful, relevant and accessible to all" (Hockings, 2010, p.1). The principles of inclusive teaching and learning call for institutions to be, "just, inclusive and engaging of all by understanding the nuanced experiences of all students within highly diverse student groups" (Hockings, 2011, p.192). Providing inclusive education that removes barriers to participation and acknowledges and harnesses learner diversity requires engagement with an anticipatory approach to curriculum design so that curricula, assessment, and classroom activities meet the learning needs of all students (Hockings, 2010).

And also, we have a disability-friendly climate concept: One way to improve outcomes for SWDs is to create a disability-friendly institutional climate (Huger, 2011). A disability-friendly climate offers value for all students and serves to increase the sensitivity and acceptance of those who are different. Exposure and interaction with a diverse group of students is an important aspect of the HE experiences according to student development theory (Huger, 2011).

In the least restrictive environment, inclusive teaching, and learning, universal design of instruction, and disability-friendly climate advocates all believe that HEIs to be inclusive for all children and youth with or without disabilities (CYAWODs) and need to have values and beliefs promoting social cohesion, belonging, active participation in learning, a complete HE experience, and positive interactions with peers and others in HE communities (IDEA, 1975; McGinty, 2016; Hockings, 2011; Huger, 2011). Yet, in this study, when SWDs inclusion is studied the study did not investigate the preceding issues whether they are available or not in the 5 sampled five public HEIs; instead the student respondents were asked whether they believe or not included in the institutions only. In other words, the study considered inclusion in terms of gains/benefits the students believe in areas of academics, social and physical in their journeys in the institutions.

In a nutshell, from the background of the study, statement of the problem, and review of related literature we understand that studies focused on mere report of the multitude of challenges SWDs face qualitatively and seem to be no reporting the gains/benefits/inclusion status of SWDs in HEIs quantitatively using a scale both at international and national levels. Therefore, the current study is believed to bridge this gap of research.

3 Research Design and Methodology

3.1 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. Addis Ababa, Jimma, Haramaya, Mekelle, Hawassa, Bahir Dar, Gondar, Arbaminch, Dilla, and Adama 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.

3.2 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 01 May 2019 to 25 June 2019.

3.3 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, stratified proportionate random sampling techniques (deaf, blind, and physical impairments strata) were 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.

3.4 Instrument of data collection

Questionnaire

Having the same demographic characteristics of SWDs as sex, year of study, disability types, the College Student Experience Questionnaire (CSEQ, 4^{th} eds.) of Pace and Kuh, (1998) which were adapted with permission was used. 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 AdiHaqi 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. Following the pilot study, the questionnaire item numbers were kept the same as they were in the original instruments. Table 2 summarizes the instrument's dependability.

Table 2: Reliability index of measures

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

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".

3.5 Methods of data analysis

The collected data from the questionnaire were converted into a machine-readable, numeric format Excel spreadsheet and entered into the SPSS statistical program to be analyzed through SPSS version 21. Once the database was established in SPSS, the researcher checked each data line in the Excel sheet, to ensure the data were matching those in the SPSS database. No errors were found through this check. In SPSS, the researcher also calculated the minimum and maximum values of each variable to check for impossible values. No values were found to be outside of the minimum or maximum range. The data entry error rate was 0%, with an accuracy rate of 100%. Empty responses were entered as 'missing' and excluded using pairwise deletion (n = 10). Participants who completed more than 80% of each measure had missing data points imputed based on the mean of the answered items on that measure. After these data cleaning procedures, a total of 255 cases out of 264 cases were retained for analyses by rejecting 9 cases.

Frequencies and percentages were calculated for respondent socio-demographic characteristics. Before passing to inferential statistics assumption tests were checked and were fulfilled (e.g. homoscedasticity, absence of outliers, linearity, normality). One sample t-test analysis was computed to examine the extent of inclusion of respondents in the HEIs. An independent sample t-test was computed to examine gender differences in inclusion. One Way ANOVA was used to see whether disability types and year levels have differences in respondents' inclusion in the institutions.

4 Results

4.1 Respondents' demographic characteristics

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**

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.

4.2 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 in the above indicated a significant difference in the sample mean score of inclusion and the test value, t = 11.53, df = 254, p = .000. The sample means score of inclusion (M = 72.10, SD = 13.28) was greater than the test value (62.5). This shows that the extent of inclusion of the respondent SWDs was 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: 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

Table 7: 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			

As demonstrated in the above Table, 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.

5 Discussion

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's 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.

6 Conclusion and Recommendations

Based on the finding and discussion of this study 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 are places where citizens are prepared for a diverse range of life needs and societal issues. So, we value academic integrity very highly and do not permit any forms of dishonesty or deception that unfairly, improperly, or illegally enhance a grade on an individual assignment or a course grade (Smita *et al.*, 2016). According to Adams and Esther (2013), it is regrettable that in most countries of the world, the examination system is infected with examination misconduct or wrongdoing. Obimba (2002) defined examination malpractice as corrupt practices and irregular behaviour exhibited by the candidates or any person charged with the conduct of an examination in or outside the examination hall before, during, or after the examination. Similarly, Wilayat (2009) defined examination malpractice as an illegal act performed by a candidate alone or in collaboration with others like fellow students, parents, teachers, supervisors, invigilators, printers, and anybody or group of people before, during, or after examinations in order to achieve illegal and unfair marks or grades (Achio *et al.*, 2012).

Cheating on an exam is one type of examination malpractice in which one can have a list of activities including copying from others, having or

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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 *et al*., 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 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). Many parents don't look beyond the grades their children get and are constantly pressuring schools to ensure high grades without pausing to wonder how such grades may be achieved. In relation to this, experts say that cheating has grown hand in hand with high-stakes testing systems. In addition, both schools and parents fail to give students clear messages about what is allowed and what is prohibited (The New York Times, September 7, 2012). Cheating is now best described as "rampant" (Simkin & McLeod, 2009). Cheating is not new, but now it's a way of life (Los Angeles Times, 1992).

There is also teacher's cheating, which could be totally illicit activities, so called "explicit cheating." These include changing student responses on answer sheets, providing correct answers to students, or obtaining copies of an exam illegitimately prior to the test date and teaching students using knowledge of the precise exam questions (Gareth *et al*., 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.

According to the researchers' personal school teaching experiences, cheating is becoming so sophisticated that it is difficult to detect in Ethiopia. More successful cheaters were never even caught. Most of them want to say sorry, laugh it off, and con-

sider the invigilator a troublemaker. Academic dishonesty is a growing concern among students in various academic institutions worldwide. It is a problem that starts in elementary school, high schools, and goes on through higher institutions. Currently, in Ethiopia, local institutions face an upsurge in cheating, possibly because of larger class sizes, the classroom environment, the increased use of technology, the diversity of student populations, and pressure from teachers, parents, and peers (Adeyemi, 2010; Oko *et al*., 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 Objectives of the Study

General Objective

The main objective of this study was to assess 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.

Specific Objectives

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 Research 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.

Sample Size and Sampling Techniques In the 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.

2.3 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.

2.4 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 *et al*., 2015).

Multiple linear regressions were the best choice to predict the behaviour 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" vari-

ables (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: 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

In the table above (Table 2), it is observed that female students are slightly greater (57.1%) in number than their counterparts. Most of them scored average results (average of the two semesters) of 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 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.

3.2 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 sampling adequacy for the analysis (KMO =.91) is found to be marvellous, which is well above the acceptable limit of.5 (Field, 2009). Moreover, the p-value (.001) of Bartlett's test of sphericity 2 indicated that correlations between items were sufficiently large for PCA and the sample was randomly drawn from the population.

Table 5: Model Fitting Information

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 the model fit test results (Table-5), 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 dependant variable cheating (Ari & 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 shown in Table-6 above, 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 & 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 is a good fit for the data, then this statistic should be non-significant ($Sig.$ should be bigger than .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 (ElsayedElamir, 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.

3.3 Multiple Correlation and Regressions

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

3.4 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.

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

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 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.

3.5 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 *et al.*, 2013). Then, using orthogonal rotation, PCA was performed on the 31 factors (items) in the student data (varimax).

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.									

The principal components are determined by eigenvalues (> 1) from these analysis results (Field, 2009; Gareth *et al.*, 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.

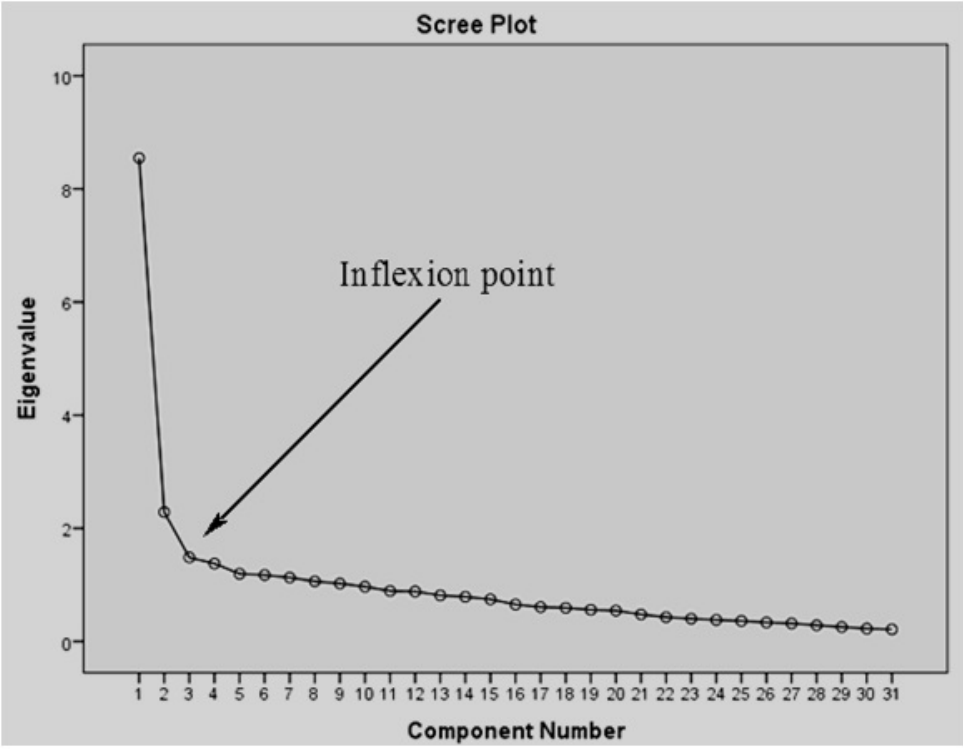

Figure 1: Scree Plot- a graph plotting each component (X-axis) against its associated eigenvalues (Y-axis)

Similarly, the scree plot (Figure-1) of the PCA shows the point of inflexion occurs at the third component/factor. However, given the large sample size and Kaiser's recommendation, stating that all factors with eigenvalues greater than 1 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***

3.6 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 *et al*., 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).

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	.	.	.

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 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 relationship between explanatory variables and the 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 significantly different from zero, and then it can be stated that all predictors (PCs) are making a significant contribution to the prediction 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:

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

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

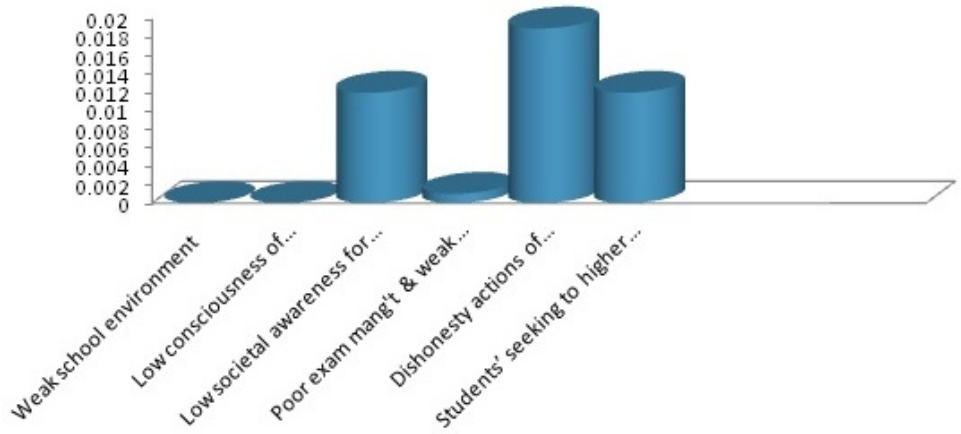

Figure 2: Significance values of the Wald statistics- the entire predictor variables have Wald statistics with levels of significance less than .05

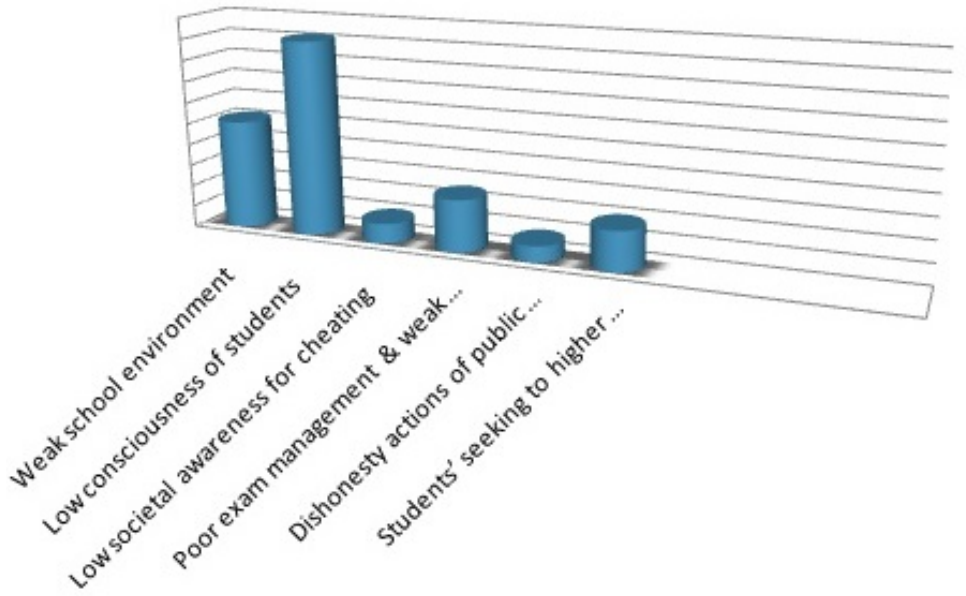

Figure 3: Regression coefficients- degree of increment of cheating for 1 increment of each predictor

The above figures (Figure-2 and 3) 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-2) and higher regression coefficients (Figure-3). 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 b_i 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.

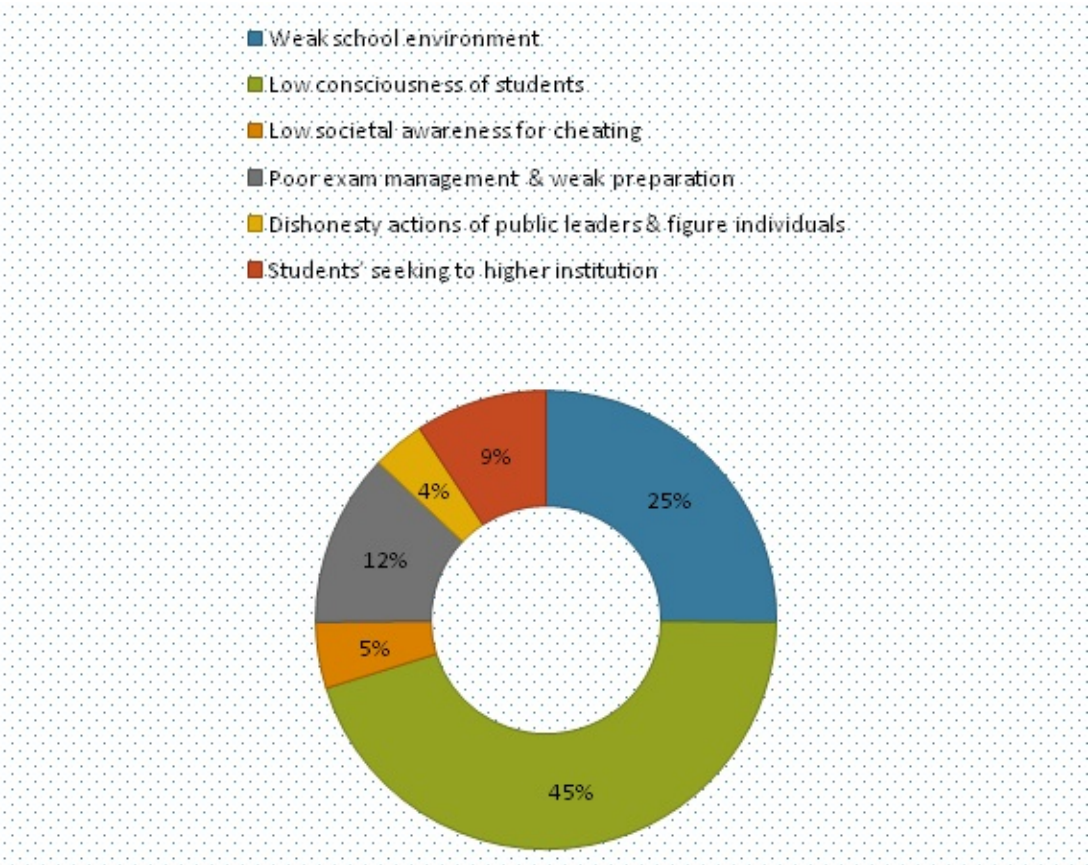

Figure 4: Degree of effect of causing/provoking factors upon students exam cheating

Figure-4 illustrates the strength of causing factors on exam cheat by using of percentage compositions.

That is, 45%, 25%, 12%, 9%, 5%, and 4% of cheating is depending on the low consciousness of students, weak school environment, poor exam management & weak preparation of

students for exam, students' seeking to higher institutions, low societal awareness for That is, 45%, 25%, 12%, 9%, 5%, and 4% of cheating depends on the low consciousness of students, weak school environment, poor exam management and weak preparation of students for exams, students' seeking higher institutions, low societal awareness of cheating, and dishonesty actions of public leaders and prominent individuals, respectively. In line with this, when we come to our study area, the majority of interview informants stressed that students as well as their parents were not aware of the consequences of exam cheating in their lives. Even if they succeed or score a good grade through cheating, it is useless for them because they cannot use and apply it in their life.

According to Figure 4, 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. Due to this, schools strive to attain good results by one or other means. Even some schools prepare different ceremonies to calm down invigilators and supervisors during national examinations. This shows exam cheating takes place in a well-organized manner through the participation of different bodies, including school principals 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 behaviours 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. In line with this, respondents in open-ended question responses indicated that students lack confidence during examinations for different reasons, even if they have 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 *et al.* (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 Approval

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 settings are one of the areas of academic study where studying school teachers' psychological constructs is especially important. The purpose of this research was to examine the relationship between locus of control, coping styles, and sex with psychological well-being among PGDT (Post Graduate Diploma in Teaching) trainees at Dilla University. What do the locus of control, coping style, and psychological wellbeing profiles of the participants look like? Do locus of control orientation, sex, and coping styles have a significant relationship with psychological wellbeing dimensions? Do locus of control, sex, and coping styles have significant joint or unique predictive validity for psychological wellbeing? The study employed a correlational research design. The population of the current study includes all regular and summer program PGDT trainees in the Institute of Education and Behavioral Science at Dilla University. 209 trainees were chosen as the sample using the proportionate stratified random selection approach. The Ryff Psychological Wellbeing, Locus of Control Scale, and Coping Style Scale were utilized to collect data. The data was examined in descriptive ways, such as mean and standard deviation, as well as inferential statistics, such as Pearson correlation, independent sample t-test, and hierarchical multiple regression, using the SPSS-23 statistical program. The findings demonstrate that locus of control has a negative significant link with psychological well-being in all six domains, including self-acceptance, positive interpersonal relationships, autonomy, environmental mastery, life purpose, and personal progress (P .05). Furthermore, the problem-focused coping style and its six aspects have a considerable positive link with psychological well-being (P .01). On the other hand, avoidant coping styles have a negative relationship with psychological wellbeing and its dimensions (P .01). Nonetheless, the emotion-focused coping style had no significant link with psychological well-being and its four dimensions (P > .05) except for autonomy and environmental mastery (P .05). Coping techniques and locus of control orientation can contribute to psychological well-being among university students, according to the findings. Problem-oriented coping styles, in particular, are positive predictors of psychological well-being, whereas avoidant coping styles, as well as external orientation in the locus of control, are negative predictors. The findings have consequences for the psychological makeup of trainees as well as future teaching careers.

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1 Introduction

This manuscript is organized into five sections: background of the problem, method, results, discussion, and conclusion and recommendations. The first section aims to set the theoretical and contextual background for the problem by summarizing and reviewing the relevant literature, both globals as well as local, relating to the psychological wellbeing of the students. This section also states the problems (together with the key research questions and purpose) that motivated this research, describes the significance of the study, and provides conceptual definitions of important variables in the study.

The second section (method) describes the study design and setting, summarizes the sampling and sample characteristics of the study, the procedures used to collect data, and the data analysis method. The result section deals with the findings obtained from the instruments and their statistical analysis. The result part has been summarized under the following subheadings: result of descriptive statistics, t-test analysis, results of correlation, results of multiple regression analysis, and results of stepwise regression analysis.

The discussion part of this manuscript attempts to see whether the research questions raised are answered satisfactorily or not. The discussion section attempts to relate the results of the analysis with the research questions forwarded at the beginning and the existing body of theoretical and research literature. In the last section of the manuscript, the researcher presents conclusions drawn from the study findings above and suggestions forwarded by the researcher.

1.1 Background of the Problem

Psychological well-being has undergone extensive empirical review and theoretical evaluation (Wissing & Van Eeden, 2002). There is currently no single consensual conceptual understanding of psychological well-being. Recent years have seen a widening interest in research on aspects of wellbeing (Huppert, 2009; Ryff & Singer, 1998). Huppert (2009) defined "psychological wellbeing" as "about how life is going well. It is a combination of feeling good and functioning effectively. "This demonstrates that a psychologically healthy person will be happy, capable of doing things, coping with difficult situations, experiencing life satisfaction, and having a good support system. Psychological well-being refers to positive mental health (Edwards, 2005) and is a multidimensional construct (Ryff, 1989) which develops through a combination of emotional regulation, personality characteristics, identity, and life experience (Helson & Srivastava, 2001). It is an ability to live rich, meaning-full, and vital lives (Ryff, 1989), a life full of vitality and meaning (Insel & Roth, 2006, cited in Kibret, 2015), an optimal functioning and development of one's true and highest potential (Insel & Roth, 2006, cited in Kibret, 2015), and an experience that is mainly structured by the individuals' choices of life or lifestyle factors (Babao & Moscoso, 2008). Thus, individuals who display strength in these areas will be in a good state of psychological wellbeing. Psychological wellbeing can increase with age, education, extraversion, and consciousness and decrease with neuroticism (Keyes *et al*., 2002).

Despite extensive evaluation and assessments, experts have indicated that psychological well-being is a diverse multidimensional concept, with exact components still unknown (Keyes *et al*., 2002; Ryff, 1989b; Wissing & Van Eeden, 2002). Ryff has extensively researched the objective understanding of psychological well-being. Ryff's (1989) research has brought about a shift in focus from a subjective to an objective conception of psychological wellbeing. Ryff's (1989) research has resulted in a new objective psychological well-being measurement being developed (Ryff, 1989b; Ryff & Keyes, 1995), with the following components: autonomy, personal growth, environmental mastery, purpose in life, positive relations with others, and self-acceptance. Subsequently, the current study is well represented and approached by the eudemonic well-being perspective, which posits that the maximum development of individual potential (i.e., psychological well-being) is determined by the abovementioned six indicators of positive psychological well-being. The Ryff model is widely recognized as one of the most influential models in the field of psychological well-being. Ryff (1989) takes psychological well-being as an attempt to realize the potential abilities of an individual, or in

other words, the progress of the potential and real talents of every person. Ryff (1989) identifies six components for psychological well-being, which include: One-autonomy: the feeling of independence and impression in life events, as well as an active role in behaviours. Two-Environmental mastery means a sense of mastery over the environment, controlling the outer activities and taking advantage of surrounding opportunities. Three-Personal growth: the feeling of having continuing growth and achieving novel experiences as a creator with potential talents. Four: Positive relations with others: having a sense of satisfaction and intimacy in one's relations with others and comprehending the importance of these dependencies. Five-Purpose in life: having a goal in life and believing that there is meaning in the past and present life. Six-self acceptance: means having a positive attitude towards oneself and accepting the diverse aspects of oneself, like bad and good traits, and having positive feelings about the past life. Ryff and Singer (1998).

Several research documents show that psychological wellbeing is associated with various personality as well as behavioural factors. Many researchers have emphasized the importance of locus of control and coping mechanisms in predicting an individual's psychological well-being. Based on the findings of such studies, it has been argued that psychological wellbeing is partly influenced by personality as well as behavioural factors. Among the important personality and behavioural variables that may influence students' psychological wellbeing 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). Moreover, demographic factors like gender as an important factor are expected to be related to and affect the psychological wellbeing of individuals. Regarding gender issues, previous studies reported various study findings. For example, Mills *et al*. (1992) conducted a study on "The Effects of Gender, Family Satisfaction, and Economic Strain on Psychological Well-Being" in which only married respondents were considered and found that husbands had higher psychological wellbeing than wives (see Nwankwo *et al*., 2017).

Higher institution learning is among the educational contexts in which people experience high levels of stress. Higher education students' loci of control, level of psychological well-being, and coping style all have a significant impact on their academic achievement. One of the basic and influential parts of every society is the educational system of that society, and schoolteacher (PGDT) trainers are among the most important pillars of this educational system. Therefore, carrying out surveys about this population in society is crucial and could resolve many problems. It is obvious that having a series of traits in school teacher (PGDT) trainers of a society like balanced development, having a better locus of control orientation, having adaptive and productive coping strategies or styles, and high psychological wellbeing could have considerable effects on personality aspects, personal and social development, emerging competent behaviours, nurturing more talented people, and decreasing the personality and behavioural abnormalities of the people of that society. So, conducting investigations about psychological wellbeing, coping styles, and locus of control orientation in school teacher (PGDT) trainers not only helps to develop and increase the quality of trainers' lives but also leads to more growth and progress in the whole educational system society.

Now, with respect to what has been stated, the purpose of this study was to investigate the relationship between locus of control, coping styles, and psychological wellbeing of school teacher (PGDT) trainees at Dilla University. Based on the purpose of the study, attempts were made to answer the following questions: First things first: what do the locus of control, coping style, and psychological wellbeing 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

In psychological research, Psychological wellbeing is one of the variables of greatest impact due to its effect on people's health and well-being. Ryan

and Deci (2001) took a dualistic approach to well-being: hedonic, which focuses on happiness and well-being in terms of attaining pleasure and avoiding pain; and eudemonic, which conceptualizes fulfillment and well-being in terms of how fully functional a person is. Ryff (1989) presented a model of eudemonic well-being, and Ryff and Keyes (1995) later described well-being as realizing one's true potential by striving for perfection. Ryff's model takes a multidimensional approach to measuring psychological well-being. Likewise, other authors have analyzed its structure (Abbott *et al*. 2006; Kafka and Kozma 2002; Mele´ndez *et al*. 2009;) and found six dimensions: autonomy, personal growth, self-acceptance, purpose in life, environmental mastery, and positive relations with others.

This research approach is well represented by the eudaimonic well-being perspective, which posits that the maximum development of individual potential (i.e., psychological well-being) is determined by six indicators of positive psychological functioning: self- acceptance (SA), environmental mastery (EM), positive relations with others, autonomy, purpose in life (PL), and personal growth (PG; Ryff, 1989). Psychological well-being consists of six dimensions, including autonomy (independence and self-determination), environmental mastery (the ability to manage one's life), personal growth (being open to new experiences), purpose in life (believing that one's life is meaningful), self-acceptance (a positive attitude towards oneself and one's past life) and positive relations with others (high quality relationships) (Ryff, 1989).

An extensive body of research suggests that several variables that are closely linked to these six dimensions of psychological well-being favor the adoption of adaptive coping strategies in the academic context. Some of these variables reviewed by Freire, Ferradás, Valle , Núñez and Vallejo (2016) are self-esteem (Cabanach *et al*., 2014), perceived control (Doron *et al*., 2009), quality of social support (Fernández-González *et al*., 2015), self-determination (Ryan and Deci, 2000), PL (Freire *et al*., 2015), and pursuit of self-realization (Miquelon and Vallerand, 2008).

Academic stress has a great impact on various aspects of life of higher education students. Coping strategies and stress response is more important than stress itself. Whatever better ways to deal with stress is applied, stress will be less damaging (Akouchian, Rouhafza, Hasanzadeh & Mohammad, 2009). Different styles of coping with stress are defined such as problem- focused style (PFCS) and emotional-focused style (EFCS) (Wonderlich-Tierney, & Vander, 2010). PFCS includes problem solving to get rid of stress like managing the problem that causing stress and EFCS, including the use of emotional responses during stressful situations such as mental rumination or blaming others (Kelly, Tyrka, Price, Carpenter, 2008). PFCS is more effective in solving the problem than EFCS. Coping refers to cognitive, emotional, and/or behavioral efforts to address (master, reduce, or tolerate) a troubled person-environment relationship (Folkman and Lazarus, 1985). Accordingly, coping strategies play a crucial role in people's health (Kraag *et al*., 2006), with relevant implications for subjective well-being (e.g., Parsons *et al*., 1996; Sheldon and Lyubomirsky, 2006; Viñas *et al*., 2015) and psychological well- being (e.g., Loukzadeh and Bafrooi, 2013; Portocarrero and Bernardes, 2013; Bryden *et al*., 2015; Mayordomo *et al*., 2015).

Folkman (1984) postulated that problem-focused coping strategies are more likely to be used to maintain psychological well-being in situations where the environmental challenge can be altered. In contrast, emotion-focused coping strategies are more likely to be implemented when the problem is inalterable. It should be noted that some researchers indicate coping is also tied to subjective well-being. Assuming that coping strategies are important for people's well-being, prolific research has focused on studying whether some coping mechanisms are more adaptive than others. Although the contextual nature of coping suggests that one strategy can be adaptive in one context but not in others (Endler *et al*., 1994), approach coping is generally considered more adaptive than avoidant coping (e.g., Gustems-Carnicer and Caldeet alrón, 2013; Syed and Seiffge-Krenke, 2015).

Coping with the stress of life can influence on mental health and well-being. Psychological well-being focuses on the positive and negative emotions and

increase pleasure and decreases negative moods (Ryff, 1989). It depends on several factors such as individual (self-esteem, optimism), demographic characteristics (gender, age, education, and marital status), economic status (physical health, social interaction) (Binder & Coad, 2010). Several researches evidenced the link between different coping styles or strategies with psychological well-being. For example, in their study Loukzadeh.,and Bafrooi (2013) showed emotion focused coping styles9EFCS) was more commonly used than problem focused coping style(PFCS). This study indicates a significant negative relationship between EFCS and purpose in life. EFCS and personal growth are negatively related. More over there is a significant positive relationship between PFCS and purpose in life.

More recently, authors have indicated that problem-focused coping styles and strategies are linked to high well-being, while emotion-focused coping is associated with low well-being (Williams and McGillicuddy-De Lisi 2000), in men and women alike. Fierro and Jime´nez (2002) cited in Freire, Ferradás, Valle, Núñez and Vallejo (2016), in a study of young college students, reported that modes of coping were linked to well-being, which was negatively correlated with passive or emotion-focused modes of coping. Along those lines, a study by Gonza´lez *et al*. (2002) showed well-being to have a positive, significant correlation with problem-focused coping, as well as seeking social support. Meanwhile, a negative correlation was observed between wellbeing and emotion-focused coping strategies

Locus of control refers to the tendency to perceive outcomes in life as a result of one's own actions and thus being within one's own control (i.e., internal locus of control), as opposed to being determined by external factors, such as chance or powerful others (i.e., external locus of control) (Rotter, 1966; Keenan and McBain, 1979 cited in Reknes , Visockaite, Liefooghe, Lovakov & Einarsen, 2019)). People with high internal locus of control typically try to master their environment, while those with high external locus of control often feel helpless because they perceive that outcomes in life are outside their own control (Keenan and McBain, 1979). The role of locus of control in individuals' positive psychological characteristics have been studied separately (Pannells & Claxton, 2008).

In their review Alexandra, Kurt, and Nandani (2012) indicated that Internal locus of control has been linked with academic success (Gifford, Briceño-Perriott & Mianzo, 2006), higher self-motivation and social maturity (Nelson &Mathias, 1995), lower incidences of stress and depression (Garber & Seligman, 1980), and longer life span (Chipperfield, 1993). Psychological and physical wellbeing has also been shown to be moderated by perceived control (Brandstadter & Renner, 1990). Kulshrestha and Sen (2006) have noted significant negative correlation between locus of control and subjective well-being, which is to say that individuals with an external locus of control are significantly less happy than their internal counterparts. It is noted that internals actively manipulate their environments, thus acting to take control of events and to change dissatisfactory conditions (Kulshresta & Sen, 2006). In contrast, externals feel powerless to control their successes or failures (Nielsen, 1987) and, thus, are unable to remove themselves from dissatisfactory situations (Kulshresta & Sen, 2006).

The current study focused on university students (particularly PGDT Trainees), a group that has not been examined by previous research. Therefore, the primary objective of this study is to identify profiles of psychological well-being according to their functioning in the six different dimensions that comprise psychological well-being. The second objective is to determine whether the identified profiles of psychological well-being predicted by in terms of coping strategies(problem focused, emotion focused and avoidance coping) that the students adopt to deal with academic demands and their Locus of control (internal verses external orientation) belief as well as gender. It is expected that students with high functioning on psychological well-being indices use adaptive coping strategies and an internal locus of control to a greater extent than students with a profile of poor in different dimensions of psychological well-being.

2 Methods

2.1 Participants

This study aimed to explore 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, Mathematics, Physics, Chemistry, Biology, Geography, History, Physical Education, Civics, and ICT were used. To reach the study goals among the population with a size of approximately 692 people (603 male and 89 female), according to Krejcie and Morgan (1970) sample size determination model table, 242 people were selected as the sample. 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

In this study, three different instruments (Ryff psychological wellbeing, adapted adolescent coping styles scale, and adult Nowicki-Strickland Locus of Control scale) were used as questionnaires.

Psychological wellbeing scale

This scale is used to assess those students' psychological well-being characteristics. In Ryff (1989), the 42-item psychological wellbeing scale was used. In this study, psychological well-being is a multidimensional construct that encompasses psychological and psychosocial well-being. This psychological wellbeing construct is operationalized in terms of six dimensions: self-acceptance, autonomy, environmental mastery, personal growth, positive relations with others, and purpose in life. For this study, the scale has 42 items and six dimensions (67) that contain six subscales reflecting self-acceptance (7 items), autonomy (7 items), environmental mastery (7 items), personal growth (7 items), positive relations with others (7 items), and the purpose of life (7 items). The scale has 22 direct and 20 reverse items for scoring, and the range of the total score of each person on this scale in all six dimensions could fluctuate. Hence, the scale items are to be rated on a six-point scale that ranges from 1 = strongly disagree to 6 = strongly agree (e.g., In general, I feel in charge of the situation in which I live.

Locus of control scale

The participants' locus of control orientation was measured using an adapted adult Nowicki-Strickland internal-external locus of control scale (1973) version of the ANS-IE (Nowicki and Duke, 1973scale) indicating external and internal locus of control. This scale was developed based on the theoretical framework work proposed by Rotter. The ANS-IE was chosen because it has been used in personality measurement. The original scale consisted of 40 items, and the respondents were asked to choose "Yes" or "No" options to the given statements. It is scored in external directions (Nowicki and Duke, 1993). The instrument has a range of scores from zero to forty. As interpreted by the score, the higher the score (i.e., above the median point) in the locus of control of the orientation scale, the more external it means.

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 de-

signed 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

After all the required data was collected and checked in the questionnaires, the data analysis was conducted. To analyze and interpret the data, the SPSS program version 23.0 was used. To analyze the coded data, descriptive statistics, an independent sample t-test, Pearson product moment correlation, multiple regression, and stepwise multiple regression analysis were used. All statistical analyses were performed at an alpha level of 0.05.

3 Results

To know the role of locus of control, coping styles, and gender in predicting the psychological wellbeing of students, descriptive statistics, independent sample T-test, Pearson correlation coefficient, and regression analysis were calculated. The results are 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

The above table 1 shows the descriptive statistical analysis of the variable. 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 explore the relationship between the independent variables (sex, locus of control, coping styles) and 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 was negatively and significantly related to psychological wellbeing total with (t (207) =-3.679, p 0.01). Sex, on the other hand, was not significantly related to total psychological well-being (t(207) =.887, p > 0.05).According to this table, the locus of control was a significant negative predictor of psychological well-being.The regression model summary reveals that locus of control contributed 6.6% of the explained variance in psychological wellbeing. This regression finding implies that since the participants identified with an external locus of control, the external locus of control impacts poor psychological wellbeing among respondents.

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

From table 4, it can be seen that problem-focused coping and avoidance coping were the significant predictors of psychological wellbeing. 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 positive effect, whereas avoidance coping styles had a poor effect on respondents' psychological wellbeing. With respect to Standardized Coefficients Beta, find which beta value is the largest (ignoring any negative signs out front). In this case, the largest beta coefficient is b =.51, which is for problem-focused coping. This means that this variable makes the strongest unique contribution to explaining the dependent variable (psychological wellbeing) when the variance explained by all other variables in the model is controlled for.

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.

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

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. Problem-focused coping style (PFCS) was entered at Step 1, explaining 17.8% of the variance in psychological wellbeing. Following the addition of the PFCS and AVCS subscales at Step 2, the total variance explained by the model as a whole was 34.3%, F (4, 421) = 53.846, p.001.The second predictor variable, AVSC, explained an additional 16.6% of the variance in psychological wellbeing after controlling for PVCS, R squared change =.343, F change (2, 421) = 52.001, p .001. In the final model, only the two coping styles were statistically significant, with the problem-focused coping scale recording a higher beta value (β =.421, p .001) than the avoidance coping scale (β = –.408, p .001). As a result, among the respondents, a problem-focused coping style is a relatively stronger predictor of psychological well-being.

4 Discussion

As observed in the result section, the study found that the participants' locus of control orientation tendency was externally oriented rather than internally oriented (M = 20.20, SD = 4.882). The score above the median point is considered externally oriented; the finding confirmed by the mean score is above the median point (20). It is understandable that since the majority of the respondents are externally oriented in their locus of control, the PGDT trainers and students believe whatever happens to them is caused by forces outside of their control-whether by chance, fate, or by other people who are more powerful than they are, they also more likely to construct events as resulting from luck, chance, fate, or powers beyond their personal control.

With regard to the coping styles profile, it was found that problem-focused coping (M = 37.80, SD =) was the major coping style which was practiced by the participants. It implies that the majority of the respondent styles of coping are directed at altering the discomfort-arousing situations and comprise strategies such as seeking social support, focusing on solving the problem, physical recreation, seeking relaxation diversion, improving relationships, working hard and focusing on the problem. Considering the psychological wellbeing profile of the participants, the study found that in all the sub-dimensions of psychological wellbeing, the observed mean ratings are higher than the expected mean (i.e., 21), and hence the mean ratings for the total scale (166.52) is higher than the expected mean (126). This could explain why most sub dimensions of respondents' psychological well-being are said to be at a high level.

The current study's correlation analysis shows a significant negative relationship between the locus of control and all psychological wellbeing sub dimensions as well as its total scale (r = -.249, p.01).Furthermore, the multiple regression analysis also confirms that the locus of control variable (that is, external LOC) significantly predicts psychological wellbeing. As the finding indicated, the locus of control variable does contribute to the prediction of psychological wellbeing significantly

and negatively (t (207) =-3.679, p 0.01). Since the participants' locus of control is externally oriented, it is understandable from the result that there is an inverse relationship between locus of control and psychological wellbeing. Individuals who score in the external direction on the locus of control orientation scale tend to experience poor psychological wellbeing. This study finding tends to be in agreement with past studies which have found that locus of control is associated with psychological wellbeing as well as study findings that demonstrate a negative correlation between psychological wellbeing and external locus of control (Uma & Manikandan, 2017; Mobarakeh *et al*., 2015).

Moreover, this study also attempts to find the relationship between three coping styles and psychological wellbeing and its sub dimensions. The result of the correlation analysis shows that there is a significant correlation between problem-focused coping style positively and avoidance coping style negatively with all psychological wellbeing dimensions. However, the emotion-focused coping style does not significantly correlate with most psychological wellbeing subscales except autonomy and environmental mastery, which are positively correlated. Similar results in support of this finding have been reported by other authors who relate problem-solving coping strategies with a high level of psychological wellbeing (Parsons, Frydenberg, & Poole, 1996).

The multiple regression analysis also confirms that the relative contribution of the three coping styles (PFCS, AVCS, and EFCS) as independent variables found that problem-focused coping style (PFCS) and avoidance coping style (AVCS) regressed to the overall psychological wellbeing. Problem-focused coping styles positively predicted psychological wellbeing, while avoidance coping styles negatively predicted psychological wellbeing total. Specifically, it implies that proactive, problem-solving coping in PGDT trainers and students had a beneficial effect on their psychological wellbeing and positive functioning. It means that the problem-focused coping style was the strongest predictor, rather than the avoidance coping style, in explaining the variance in psychological wellbeing. The finding implies that problem-focused coping strategies in college students had a beneficial effect on components of psychological wellbeing. In contrast, avoidance coping strategies are associated with a greater negative effect on components of psychological wellbeing.

In support of these findings, Farzana, Shahina, and Shah (2016) found that coping style influences the psychological well-being of the individual. In particular, positive coping styles like optimism give better psychological well-being. Further evidence from Murray-Harvey *et al*. (2002), a study on student teachers, found that avoidance coping strategies are associated with negative psychological well-being. Specifically, cognitive avoidance strategies such as avoiding thinking about the stressor, seeking distraction, and acceptance–resignation are associated with greater psychological distress or poor psychological wellbeing.

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 Researches

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

This study was designed to investigate the major causes of speaking anxiety and the relationship between students speaking anxiety and student speaking achievement. For this purpose 135 grade 12(twelve) social and natural science stream students were randomly selected from Hawassa, Addis ketema preparatory and secondary school. A self-reporting Foreign Language Speaking Anxiety Scale questionnaire (FLSAS) which is consisted of 28 items was administered to measure the students' English speaking anxiety level. To determine the relationship between the students speaking anxiety and speaking achievement, the result of achievement test, which was designed by the researcher, was used. Pearson's Moment Correlation Coefficient was used to determine relationship between anxiety and achievement. Moreover, an Independent Samples t-test was used to find out whether there is significance difference between males and females' anxiety level and achievement. The results of the study revealed that there are four general causes of speaking anxieties: oral presentation test, self-assessment of speaking ability, comparison of other, and fear of negative evaluation. The study also showed that there was high negative correlation between students' speaking anxiety and achievement. With respect to gender, no statistically significant difference was observed between males and females on their foreign language speaking anxiety and achievement.

1 Introduction

1.1 Background of the Study

English has become a global language with the rapid growth of interconnectivity in international trade, diplomacy, mass entertainment, international telecommunications, and scientific publications. It has become a lingua franca for native and non-native speakers of English since most of the communications are being made through the English language. The prestige position it has in the world demanded people all over the world to communicate in English. This intern demands people to be communicatively competent in English.

Moreover, as an international language, English has an important place in school subjects. As Brown(2001), since English is a necessary part of the educational system and quality language teaching decisions need to be taken with a broader framework of the aim of education. Besides, Awol (1999: 18), for example, mentions that "English is an important school subject in that pupils' future is largely dependent on the success in it." In line with this, the Ethiopian Minister of education (2002) explained that English has played an important role in the field of education. Following this, almost or maybe all of the schools, especially in Ethiopia, teach English as a subject beginning from grade

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one and use it as a means of instruction beginning from grade 5.

Communicative skills are important tools in our lives, and essential for the development, maintenance, and transmission of culture from one generation to the next. The main goals of English teaching are to develop learners' basic communication abilities and their interest in learning English. In every teaching institution, four language skills of listening, reading speaking and writing are taught. Learners are expected to speak English in class and outside the class in social situations. Nothing can be achieved without efficiently communicating with others. All human interactions are good communication. Learning a second language does not occur in isolation: it occurs in a situational and social context and is used to express social and functional meanings. Speaker uses his/her linguistic competency and communicative competency for successful communication (Guyueguo, 1988:49). Cummins (1994) states that oral language is an important component of language development in ESL. It is a common thought among learners that speaking is harder than other skills. Levelt (1993) states that talking is one of the dearest occupations, people spend hours a day convincing, telling stories, teaching people and, of course, speaking to other people.

Moreover,speaking is one of the most complex cognitive, linguistic, and motor skills that play a vital role in the communication process. It is the most important type of linguistic activity. Developing speaking skills help in creating an effective connection among the individual's society. It is an active part of their daily life and a tool of learning (Dorgham, 2011: 1). In a related context, Alia (2007:1) views that "speaking is a complicated mental process and a productive skill." Also, Brown (2001: 9) argues that speaking is not a single skill, rather speaking is an interactive process of constructing meaning that involves producing, receiving, and processing information. In addition, Harmer (2001:15) points out that speaking includes two categories; accuracy and fluency. This means that developing speaking skills involve the correct use of vocabulary, grammar, pronunciation, and having the ability to speak spontaneously. Students who are dominant in the speaking and listening practices are those who are linguistically-talented only.

Researchers in the field of second/ foreign language believe that speaking skills are important of the curriculum in language teaching, and the ability to speak in a foreign language is at the very heart of what it means to be able to use a foreign language (Biggs & Move, 1993; Elis, 1988; Liu, 2001). However, the learners' foreign language speaking ability is influenced by different factors.Researchers in language have identified different learner factors that are thought to have a noticeable influence on speaking a foreign language. Anxiety has been considered as one of the most crucial affective factors which influence second language learning. Research by different researchers (Gardner, 1985; Gardner,Trembly, & Masgoret, 1997; Horwitz & Cope, 1986), especially in Western Countries; has been conducted to find out the relationship between foreign language speaking anxiety and speaking proficiency and achievement at different environment. On their result, these researchers have found different relationships between foreign language speaking anxiety and speaking proficiency. A study by Horwitz (1986) and Macintyre and Gardner (1994) indicated that foreign language anxiety is responsible for students' negative emotional reaction to language learning. Moreover, Horwitz and Cope (1986) pointed out that:

The emphasis on oral aspects of language means that students have to learn to understand what others say and to try to speak out what they want to express in a foreign language class. However, since English is the target language, the correct emphasis is on the development of communicative competency pauses particularly great difficulty for the anxious students.

Being anxious and nervous are common in second or foreign language classrooms. Basic(2011) states that speaking anxiety is a fear of expressing oneself orally and it can negatively affect students' speaking performance. It is most likely that anxiety or nervousness can obstruct and inhibit one's ability to speak since a person who experiences that kind of anxiety will not be able to focus on the speaking process. It means that the learner does not have the

bravery to speak up during the lessonsince he/she might be thinking about how to speak perfectly without making mistakes.As a result, the students prefer to be silent than actively participate in pair and group discussions.

Though many efforts are made by the government to improve the quality of English language teaching, the success of developing students' English language achievementseems highly inadequate in Ethiopian preparatory schools today. The extent of the problem is explained by Tesfaye (2012) as "... there are serious complaints regarding the English language proficiency of students. Many students who join universities and colleges can hardly express themselves in English. It is unfortunate to hear that many primary school teachers and even some teachers in higher institutions of learning do not have the required level of proficiency in English".

As can be seen from the research findings and government reports, Ethiopian students in general and Hawassa Addis Ketema grade 12 students, in particular,are not performing well in any of the English language skills especially in speaking skills though they have been learning the language on average for about twelve years.Students become anxious when they are required to present their work or work in pairs and groups. Therefore, this particular research work tries toinvestigate the correlation between speaking anxiety and performance in speaking. It tries to answer 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

Broadly speaking, anxiety is a state of unease, a kind of troubled feeling in the mind marked by excessive uneasiness. It is also defined by Spielberger, (1983, cited in Awan *et al*. 2010, p. 33) as "a subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the automatic nervous system" (p.15). In addition, Sillamy (1996 cited in Idri, 2012) described anxiety as an affective state characterized by a feeling of insecurity, a diffused trouble. Anxiety in relation to foreign or second language learning, on the other hand, is defined as the specific negative reaction experienced in particular foreign or second language learning contexts when learners are expected to perform in the second or foreign language. (Gardner and MacIntyre, 1993). These definitions reflect researchers'diverse views on anxiety, complicating the issue of finding one encompassing definition of this concept.

Foreign Language Speaking Anxiety

For decades, the body of extensive research undertaken on foreign language anxiety has been to a great extent concerned with the role of anxiety in language learning in general, its causes and the way to cope with it. (Brown, 1974; Horwitz et.al, 1986; Oxford, 1999; Krashen, 1985; Aida, 1994; Idri, 2012). Moreover, many studies also deal with and explore anxiety associated with foreign language speaking (Subaşı, 2010; Cheng *et al*., 1999; Kitano, 2001; Gregersen and Horwitz, 2002; Liu, 2007; Tsiplakides and Keramida, 2009; Fang-peng and Dong, 2010) because it is considered as a highly anxiety-provoking aspect in a foreign language learning situation. (Cheng *et al*., 1999).

Devoted solely to speaking and communicating in the target language, foreign language speaking classrooms have often filled many students with nervousness and dread. Horwitz *et al*. (1986) claim that students suffering from foreign language speaking anxiety report feelings of apprehension and worry, and also feel uncomfortable about speaking in class. They believe that only correct English must be spoken and comparing their skills with native speakers of the target language, which makes them fear that their pronunciation is not good enough. Kitano (2001) argues that "speaking skill is usually the first thing that learners compare with that of peers, teachers, and native speakers" (p. 550). Faced with their teachers" questions that they must answer and the possibility of talking in front of the whole class, they may have difficulty concentrat-

ing, and experience some symptoms like "nausea, sweating, weak knees and a dry mouth". (Boyce *et al*., 2007). These anxious students may also skip classes, exhibit some disruptive behavior in class or quit studying altogether.

Although it is a major obstacle to foreign language learning in general and to speaking more specifically, anxiety can be reduced. Understanding the nature and the sources of foreign language speaking anxiety can offer more insights on how to deal with it. It can help teachers to support and encourage anxious students to be actively involved in foreign language speaking classrooms, as well as to ensure a relaxed low-anxiety environment for the improvement of their speaking skills.

Theoretical Underpinnings

The literature overflows with research on foreign language anxiety and space does not permit a detailed review of the literature on this construct. Yet, to understand its nature, it is crucial to examine some theories postulated by major researchers in the field of language anxiety.

Horwitz *et al*.'s Research on Language Anxiety

Foreign language classes had always left students with feelings of uneasiness, nervousness and dread and this cannot be attributed only to cognitive abilities, or proficiency in the language. (Horwitz *et al*., 1986). In almost thirty years of research, Horwitz, Horwitz and Cope (1986) found that foreign language anxiety is a distinct affective variable in the foreign language learning process and that it has specific, well-defined detrimental effects on learning. To discover the real causes of language anxiety, Horwitz *et al*. designed in 1986 the Foreign Language Classroom Anxiety Scale (FLCAS), a tool including thirty-three items used by foreign language instructors to determine and capture the scope and severity of students' anxiety and to examine its effects on learning in different contexts.

Horwitz *et al*. (1986) identified three varieties or sources of foreign language anxiety. The first variety is communicative apprehension, which arises from the inability to adequately express thoughts and ideas. The second is fear of negative evaluation (FNE) which is defined as apprehension about others' evaluations, avoidance of evaluative situations, and the expectations that others would evaluate one-self negatively. The third source is test anxiety or apprehension over academic evaluation. These three types of anxiety can cause students to postpone language study indefinitely or to quit learning altogether. They are experienced by many language learners and they pose potential problems because they interfere with and restrain learner's ability and ultimately impede their proficiency in the foreign language.

Krashen's Affective Filter Hypothesis

Krashen (1985), on the other hand, developed the Affective Filter Hypothesis which stipulates that a number of affective variables play a role in second language acquisition. He observed that anxiety if high is considered as an "affective filter" or a "mental block" that correlates negatively and prevents input from reaching the language acquisition device (Krashen, 1985, p. 100). In other words, when the filter is high it obstructs success in the second language. Therefore, Krashen asserted that second language teachers need to make sure that the students' affective filter is low at all times in order for learning to take place. He also believed that the Affective Filter is caused by environmental factors such as a stressful learning environment (i.e., too much instructional error correction, a strong focus upon pronunciation and form, or being humiliated amongst one's peers.

2 Research Design and Methodology

2.1 Research Design

A correlational research design has been used to discover the relationship between students speaking anxiety and speaking achievement. The researcher has opted for this type of research because it is closer to real-life situations rather than laboratory experiments, which constitute a technical advantage over experiments in that it offers a possibility to study a phenomenon in natural settings.

2.2 Subjects of the Study

The main focus of this research is to check the relationship between students' English language

speaking achievement and speaking anxiety. A total of 135 male and female learners were participated in this study. They were all grade 12 preparatory students from Hawassa Addis Ketema comprehensive and preparatory school. Among these, 74 were females and 61were males from both natural and social science streams. The number of female participants is more than male participants, and the subjects were selected randomly.

2.3 Instruments of Data Collection

In this study, the researcher'sobjective was to determine the correlation between students speaking anxiety and their speaking achievement in the class. Thus, the study employed the Foreign Language Speaking Anxiety Scale questionnaire (FLSAS) and the speaking achievement test. The data obtained from the FLSAS and speaking achievement test were presented and analyzed quantitatively. The researcher used FLSAS which was originally developed by Huang (2004) and adapted by (Hassan, 2009). Thus students rated the questionnaire as the degree of agreement or disagreement with the items on a 5- scale.

In this research the questionnaire consisted of two parts, one was intended to collect personal information of the participants such as age, gender, and stream. The other was the Foreign Language Speaking Anxiety Scale (FLSAS). The second major data gathering instrument in this study wasthe speaking achievement test. The purpose of the test is to measure students' English speaking achievement and its relationship with speaking anxiety.

Regarding the evaluation of speaking skills, Knight (1992) says that teachers could be familiar with a rubric with different criteria and grading scales. This is quite easy. The teacher can simply choose some criteria on which she/ or he grades students and list them along the left side of the page. Then she/he can create an even number of columns along the top of the page, four is the easiest to start if this is his or her first rubric. These columns will represent the potential skill levels of the students' abilities. It is possible to define each criterion by the label of ability the students will exhibit. For example, the way of labeling the boxes on the rubric would meet expectations high, meets expectations low, and slightly underperformers does not meet expectations. So, after evaluating each student's performance, the teacher can determine the level of the students' performance according to the criteria and an objective grade with the suggestion for areas in which the students can improve (Knight, 1992).

In this study Knight's (1992) criteria were used to rate students' performances. These criteria include pronunciation, vocabulary, accuracy, fluency, communication, and interaction. Thus, it is necessary to evaluate students in qualities of pronunciation, vocabulary, accuracy, fluency, communication and interaction.

Assuming all these criteria into account, the speaking test was prepared by the researcher. The test adopted in this study is from grade 12 English for Ethiopia's old textbook on page 40. In the speaking test, the participants were required to narrate a story only based on the picture on the book. The story whose picture consisted of four scenes was about a rabbit and a tortoise, which seems fairly familiar to the subjects.

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 ratethe 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

All the collected data were organized and analyzed in an appropriate way to answer the research questions. To analyze the data collected through the questionnaire and speaking achievement test, the researcher used the SPSS windows 20.

Firstly, in order to analyze the frequency distribution of the participants' answers for each item of the foreign language anxiety scale, descriptive analysis was used to compute the mean and standard deviations for each item and each kind of anxiety to see the general situation.Secondly, Pearson's product-moment correlation coefficient was used to analyze the correlation between English speaking anxiety and English speaking achievement. Then the independent samples t-test was employed to see if there were any statistically significant differences between male and female students speaking achievement.

3 Results

Two groups of students participated in the study from the same scool. The first group of participants was 70 students, from Hawassa Addis Ketema grade twelve natural science stream students, and the second group of participants was 65 students from a similar school social science stream.

Two sets of data were collected through two different instruments. The first set of data was collected with a Foreign Language Speaking Anxiety Scale questionnaire, distributed to all participants. The second set of data was collected through a speaking achievement test.

In order to investigate the sources of foreign language anxiety, each item in the second section of the FLSAS was analyzed. Since some items were negatively worded, they were reversely scored. The next table illustrates the descriptive statistics of the responses of the slightly, moderately, and highly anxious participants to 28 items on the FLSAS (Hanssen, 2009).

Considering that the highest possible score that can be taken from the questionnaire is 140, and the lowest is 28. Then, the highest score (140) was subtracted from the lowest (28). Next, the result (112) was divided by three. Then, the quotient (37.3) was added to the lowest FLSAS questionnaire (28). The sum up to 65.3 was considered as the lowest anxiety group. To get the moderately anxiety group, the lowest anxiety group boundary (65.3) was added to 37.3; then the sum, 102.6 was the boundary of moderately anxious participants. Now, it is clear that score greater than 126.6 could be considered as the highest anxiety group (Hanssen, 2009).

As can be seen in Table 1, several questionnaire items have medians of 4.00 or higher, indicating that more than half of the participants in those groups agreed or strongly agreed with those statements. Only six of the questionnaire items for the low anxious participants have medians of 4.00. However, the moderately anxious participants consider several of the statements as sources of anxiety, with eleven of the questionnaire items for the moderately anxious participants having medians of 4.00 or more. The highly anxious participants consider most of the statements as sources of anxiety. Twelve of the questionnaire items for the highly anxious participants have medians of 4.00 or more.

In addition to the median scores, the frequency and the percentages of the responses of the participants for each item were analyzed. Several items which indicate speaking anxiety were rated by moderately and highly anxious students. Since no particular anxiety-provoking situation was identified by slightly anxious students, their responses were not included in this analysis.

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.

Moderately anxious participants items with a combined agree/strongly agree the frequency of 50% and over were chosen for analyses, and for highly anxious participants, the items with combined agree/disagree frequency of 70% and over were chosen to analyses. The items which include a facilitating condition (2, 3, 13, 15, 20 and 21) were not taken into consideration. The next table presents the list of the items that were chosen to analyze the moderate and high anxiety levels.

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

When the sources of speaking anxiety are analyzed based on the list of the highly anxious participants, it can be said that these items indicate the nine major anxiety-provoking situations. The two highest-ranked situations are revealed by the results of the responses to items 5 and 27. What these items have in common is that they both focus on oral tests. That is, the majority of the highly anxious participants get anxious due to being graded in oral activities or oral exams. This finding is also

supported by the results of the responses to item 12, which is another item about oral tests that appears on the list. The responses to item 1 confirm that the highly anxious participants suffer from speaking anxiety in general, which is consistent with their responses to two other items on the list, 24, feeling nervous about attending conversation class, and 25, stumbling while answering questions in English. When it comes to comparing their speaking abilities to those of others, which is revealed by the results of item 11, it was found that the majority of the highly anxious participants find it anxiety-provoking.

The responses to item 14 show that the highly anxious participants feel nervous when they cannot express themselves. This statement may be related to self-assessment of speaking abilities because to be able to decide that they can express their thoughts effectively, they have to evaluate their speaking abilities, and negative self-evaluation may result in anxiety. The final anxiety-provoking situation for the highly anxious participants is stated in item 6, regarding fear of giving a wrong answer, which can be connected to the fear of negative evaluation.

For the moderately anxious participants, four anxiety-provoking situations were found. All these situations were also found on the list of the highly anxious participants. The major anxiety-provoking situation is revealed by the results of item 14. This was identified as the fifth source of anxiety by the highly anxious participants. The results indicate that like the highly anxious learners, the moderately anxious participants feel nervous when they self-assess their speaking skills.

Another situation that the moderately anxious participants found to be anxiety-provoking is revealed by the results of a reverse scored item 27, which is about oral tests. This situation was seen as the second major anxiety-provoking situation on the list of highly anxious participants. This was followed by item 12, which is also about oral tests. This was identified as the seventh anxiety-provoking situation by the highly anxious participants. The last one is revealed by the results of the responses to item 1, which includes a more general statement about speaking anxiety and was seen as the third item on the list of the highly anxious learners.

When the results of the responses to the FLSAS are further analyzed, it can be said that four different sources of speaking anxiety are identified by the moderately and highly anxious participants. Oral exams are found to be one source as the results of the responses to items 5, 12, and 27 indicate. The second source is related to self-assessment of speaking abilities, which is revealed by the results of the responses to item 14. The third one is self-comparison to others, which is yielded by the results of item 11. The last source is the fear of negative evaluation, which is revealed by the results of item 6. The other items 1, 24, and 25, are thought to be general statements about speaking anxiety. Therefore, they are not classified into a particular category. In light of the findings, it can be said that the moderately and highly anxious participants' responses to the FLSAS indicate that oral exams, self-assessment of speaking abilities, self-comparison to others, and fear of negative evaluation are major anxiety-provoking factors in this EFL context.

In order to check the correlation between speaking achievement and speaking anxiety, the scattered plot was used. The scattered plot is a plot that is used to check the relation of two variables.

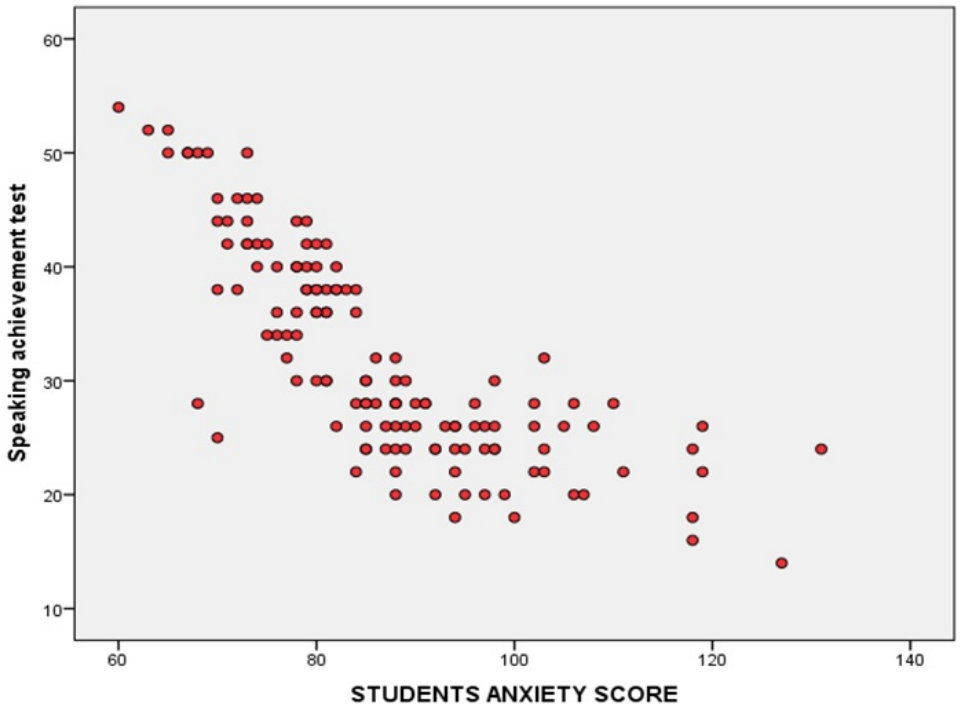

Figure 1: The descriptive statistics of male and female on the result of achievement and anxiety

From the above scatter plot, there appears to be a strong, negative correlation between the two variables (speaking comprehension test score and Foreign Language Speaking Anxiety score) for the sample as a whole. Respondents who scored good marks (shown on the y or vertical axis) experience a lower level of speaking anxiety (shown on the x, or horizontal axis). On the other hand, respondents who scored less marks (shown on the y, or vertical axis) experience a high level of speaking anxiety (shown on the x, or horizontal axis).

The scatter plot indicated that when one of the variables (speaking test score) increased, the other variable (speaking anxiety score) decreased, in other words, when the listening test score decreased, the listening anxiety score increased. This means there is a negative correlation between the two variables; so would be appropriate to calculate a Pearson product-moment correlation for these two variables.

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).

According to Table 3, the correlation coefficient is -.759**, which is significant at .05 level. The value of this correlation indicated that anxiety has a negative impact on achievement. This is because, statistically, if the correlation is negative and the significant value is less than the given point value,

anxiety has a debilitative effect on students' achievement. This study investigated that anxiety has a debilitative effect on grade 12 students.This finding is supported by studies on this concern.

The third research question deals with whether there would be a statistically significant difference between male and female students in speaking anxiety and speaking achievement. To this effect, an independent samples t-test was used.

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 4, indicated that the mean and standard deviation for male students' anxiety level was 100.57 and 14.82. The mean and standard deviation of speaking test achievement for these students were 33.44 and 8.68 respectively.On the other hand, the mean and standard deviation for female students for anxiety level were 102.67 and 14.19 respectively. The mean and standard deviation of speaking test achievement for females were 30.95 and 9.67. Since descriptive statistics do not indicate a significance level, an independent samples t-test was used to determine whether there is a statistically significant difference between male and female students speaking anxiety and speaking achievement.

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

Table 5 illustrates the level of significance of the foreign language speaking anxiety and achievement scores according to gender. Anindependent-samples t-test was used in order to test the significance of mean differences of scores of males and females speaking anxiety scores and speaking achievement.

The magnitude of females' anxiety was greater than males (F=102.67, for females and M=100.57 for males), but no significant difference is seen in their speaking anxiety and speaking achievement. Though the magnitude of anxiety levels differ a little bit, no significant difference was observed since the P-value is greater than alpha-value (0.405 > 0.05).

4 Discussions

The major objectives of this study were to identify the major causes of speaking anxiety and the relationship between speaking anxiety and students' speaking achievement. The results indicated that

there are four major causes of anxiety: oral presentation test, self-assessment of speaking ability, comparison of others, and fear of n ergative evaluation. The results also revealed that there is a strong negative correlation between speaking anxiety and test achievement. This study is in line with the findings of Choen and Holliday (1982). Their study also indicated that there is a strong negative correlation between students speaking anxiety and test achievement.Similarly, Macintyre and Gardner (1994) reported a significant correlation between language anxiety and performance in courses and proficiency tests. However, it should be noted that both negative and positive correlations less than and greater than the one obtained here have been reported by (Chastain1975, Horwitz, 1986). The fact that the anxiety variables are negatively correlated shows that debilitating anxiety appeared in learners. According to Gardner (1985) and Larsen-Freeman, and Long (1991), negative correlation indicates the fact that anxiety impairs performance.

Moreover, Abate (1996) in his local study found that anxiety had a debilitativeeffect on student performance and the correlation values were negative.Similarly, another local study by Melesse (2007) states that students' test result was poor due to the anxiety they experienced during the test. In both studies, students' poor backgrounds in learning English were responsible for the quality of the students' task and performance. Similarly, the subjects of this study might have experienced poor background in English classrooms to accomplish tasks and activities.

The magnitude of females' anxiety was greater than males (F=102.67, for females and M=100.57 for males), but no significant difference is seen in their speaking anxiety and speaking achievement. Though the magnitude of anxiety levels differ a little bit, no significant difference was observed since the P-value is greater than alpha-value (0.405 > 0.05).

The third research question deals with whether there is a statistically significant mean difference between male and female students. The result indicated that there was no statistically significant difference between male and female students speaking anxiety and achievement though there is little difference in mean between the two groups. Wuegbuzie *et al*. (1999), who looked ion to possible relationships between anxiety and gender in their participants', found no statistically significant difference between males' and females' anxiety levels, the fact that females exhibited a little bit somewhat higher levels of anxiety. Zhao (2007) also found that, though males seem more anxious than females, it was not statistically significant.

However, the findings of this study contrast with Wilson (2006) who suggested that female students often have higher levels of anxiety than males in academic settings and have low achievement. Moreover, Cheng (2002) cited in Wilson (2006), investigated that females were significantly more anxious than males (M= 85.67 for females, and M =77.41 for males). However, the findings of this study indicated that there are no significant differences in levels of anxiety.

5 Conclusion

This research focused on identifying the major causes of speaking anxiety and investigating the relationship between speaking anxiety and speaking achievement at Hawassa Addis ketema grade 12 students. The resultrevealed four major sources of speaking anxiety.These are oral exams, self-comparison to others, self-assessment of speaking skills, and fear of negative evaluation. The self-reports of the students'questionnaire indicated that certain linguistic difficulties (pronunciation and lack of vocabulary), the teacher's manner, and crowded classrooms were additional sources of speaking anxiety in this particular study context. It is widely accepted that anxiety plays a crucial role while learning a second language. The impact of such emotional arousal in language learning and its debilitating effects has long been considered in the language classrooms. So in order to increase students ' speaking achievement, there is a need to decrease students speaking anxiety.

The result of the study also revealed that there is a strong negative correlation between students speaking anxiety and speaking achievement with the correlation coefficient of .759 and significant at 0.05 level. Concerning the comparison of males and females, the result indicated that females' anx-

iety level was a little bit higher than males (.403, for females and .405, for males). However, the difference 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 form the research participants. Confidentiality was maintained in reporting information.

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