



ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF PSYCHOLOGY

**THE INFLUENCE OF CLASSROOM PHYSICAL ENVIRONMENT ON
TEACHING AND LEARNING PROCESS (STUDENTS ACHIEVEMENT
SCORE): GOVERNMENT HIGH SCHOOLS IN ADAMA TOWN IN FOCUS**

BY:
SINKINESH BEKURE

APRIL, 2016
ADAMA, ETHIOPIA

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**BY
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**APRIL, 2016
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SCHOOL OF GRADUATE STUDIES**

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As members of the board of examiners of the final MA open defense Examination we certify that we have read and evaluated the thesis prepared by Sinkinesh Bekure and examined by the candidate. We recommended that the thesis be accepted fulfilling the thesis requirement for the degree of Master of Art in industrial and organizational psychology.

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DECLARATION

First, I declared that this thesis entitled as “the INFLUENCE OF CLASSROOM PHYSICAL ENVIRONMENT ON TEACHING AND LEARNING PROCESS: GOVERNMENT HIGH SCHOOLS IN ADAMA TOWN IN FOCUS ” is my own work and that all source of materials used for this thesis have been duly acknowledged. I solemnly declare that this thesis is not submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

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Acronyms

SR -----Students Result

SSE-----School Site and Environment

SPHC-----School Physical Conditions

SAS-----Sitting Arrangement and Space

CSNS-----Classroom Size and Number of students

SLM-----Standards of Learning Materials

TM-----Technological Materials

SBR-----Students Behavior/character

ABSTRACT

The purpose of the paper was to examine the influence of classroom physical environment on the teaching and learning process of governmental secondary schools in Adama town .All the students and teachers at secondary school level in Adama town constituted the population of the study. The study was delimited to physical classroom environments of governmental high schools. 190 students were selected as sample through simple random sampling and 98 teachers and 12 management bodies/directors and vice directors/ from all schools were taken as a sample using convenient sampling technique. The study used correlation and regression of Statistical tools as it studies the relationship between variables and also cause and effect relation of dependent variable (achievement score of students) and independent variables (classroom size and number of students, sitting arrangement and space, physical conditions, standards of materials, school site and environment....) .Statistical data were collected through questionnaires. In addition, statistical tools i.e., mean, standard deviation and differences of means were calculated for each group. Significance of the difference between the mean scores of the gender was tested at 0.05 level of confidence by applying t-test. After analysis, it was concluded that most of the classroom physical environment variables have a significant effect on the academic achievement scores of secondary school students. Based on findings, it was recommended that classroom physical environment should be given attention by the concerned body and the community to be attractive, comfortable, suitable, well-organized, equipped and facilitated

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

The classroom physical environment is the physical characteristics of the room. This refers to the overall appearance of everything inside the classroom. The physical environment involves and concerns everything about a classroom including the classroom size, arrangement of seats (desk, chair, and table), the lighting, the temperature in the room, the organization of materials found within the classroom (blackboard, plasma), number of students in the classroom, windows, colors on the walls, and the noise which affects teachers and students attraction, etc and it is the general setting. Teacher and students are considered to be the main elements of the classroom environment. The physical environment is essential for the student to learn safely, both mentally and physically. It is very important to student success. If the environment is too distracting, loud, untidy, or too bright some students may not reach their true potential as a learner. It is important to know the students and adjust the physical environment as needed to ensure to maximize the learning process. To increase the achievement score of students, having good classroom physical environment which is possible for all types of teaching and learning activities is very important.

According to Halstead (1974), the physical environment is designed in such a way that obstructs the learning process although researches have established a close correlation between the amount of work individual do and its physical environment. It stands to reason that a student sitting in an insufferably hot, airless room listening to a lecture on cryogenics would not learn as much as he would in a cool, comfortable space. Unfortunately, school buildings are designed to attract people from outside but they failed to provide a safe and comfortable internal atmosphere for students.

The major importance of the physical classroom environment is that it can affect students'

comfort and their achievement of learning. Students who are uncomfortable are unlikely to learn than those who are comfortable. The physical environments can an impact on how students learn. Inappropriate learning environments can create barriers to learning (for example, a noisy classroom can impede both achievement and attention to hear the lecture). Good physical environments can aid student learning. In addition, the environment can affect the morale of students. If they feel their classroom is physically worse than those of students learning in comfortable and conducive classroom physical environment, for example, they might be discouraged and upset and less willing to learn. So a classroom must always be safe.

In order to meet the needs of all students, it is important to have a classroom that complies with all learners. The physical classroom environment affects the way teachers teach and learners learn. If you take all the attributes of a physical classroom environment - arrangement of seats, lighting, class size, temperature, number of student and access to technology, etc. and put them together, they have a profound effect on the way in which students are able to learn. A positive physical environment adds to the educational experience, while a negative one can prohibit learning. (Tanner, 2000)

According to Catherine Hoffman Kaser and others (2013) to ensure a favorable classroom environment, it should be well equipped and facilitated. The classroom physical arrangement provides students with effective instruction and promotes smooth teaching learning process. Physical facilities should be provided as they are helpful in improving the overall performance of the school.

The physical arrangement of classroom can serve as a powerful setting event for providing students effective instruction and facilitate positive teaching /learning interactions. As with other aspects of instruction, the physical arrangement of the classroom should be reflective of the diverse culture and linguistic characteristic of the students and be consistent with specific learner needs.

1.2. Statement of the problem

A number of studies have been done on influence of physical classroom environment on learning process; the quality of classroom environment in schools is a significant determinant of student learning (Fraser 1998) and students learn better when they perceive classroom environment more positively (Dorman 2008).

Classroom physical environment refers to physical characteristics of the room. Physical classroom environment is a combination of different things i.e., lighting, temperature, ventilation system, size of the room, floor, walls, desks, chairs, blackboards, etc. It also refers to the physical room in which teacher and learners are the main element including its spatial elements i.e., floor, windows, walls as well as other classroom equipments i.e., desks, chairs, rugs, chalkboards, and computer equipment but not limited to these things (Fisher, 2008). Physical environment can affect students' comfort and also their ability to learn to some extent. Students who are comfortable are likely to get much information as compared to those who are uncomfortable. Besides, the physical atmosphere can also affect the morale of the learners. Unfavorable classroom environment can discourage the learners and they become less willing to learn (www.enotes.com) (Dallmann, Rouch, Char, & DeBoer, 1982; Estes & Vaughn, 1985)

Physical environment plays a central role in any activity and makes it more conducive, successful and achievable. According to Oni (1992) and Hallak (1990), physical facilities compose a strategic factor in the operation and functioning of an organization as they determine the excellent performance of any social organization or system including education.

Physical facilities are one of the stimulating factors that play a fundamental role in improving academic achievement in the school system. These include; school buildings, accommodation, classrooms, libraries, furniture, laboratories, recreational equipments, apparatus and other

instructional materials. Furthermore, their availability, relevancy and sufficiency affect academic achievement positively. On the other hand, poor school buildings and overcrowded classrooms affect academic achievement negatively.

Classroom physical environment is not conducive and comfortable in many parts of Ethiopian schools which lead to low learning achievement. The purpose of this study is to examine the influence of physical classroom environment on the achievement score of students in government secondary schools in Adama town.

The research tries to find out the influence of schools physical classroom environment factors/variables/ that can bring great impact on the learner's achievement and related problems and finally recommend solutions to mitigate the problems and other related ideas. The following major research questions are stated:

- 1) What are the aspects of classroom physical environment that brings most attitudinal difference among students in learning achievement?
- 2) What are the influences of classroom physical environment on the academic achievement scores of secondary school students?
- 3) What are the impacts of each elements of classroom physical environment on learner's learning achievement?
- 4) What are the difficulties teachers faced due to the classroom physical environment they are working in?

1.3. Objectives of the study

1.3.1 General objective

The study generally examine the classroom physical environment factors influencing the achievement of students in teaching and learning process and suggest valuable recommendation for the enhancement of students' academic achievement at high school level.

1.3.2. Specific objectives

- To identify classroom physical environment factors that brings attitudinal differences in students learning achievement.
- To examine the influence of classroom physical environment on the academic achievement scores of secondary school students in Adama Town.
- To investigate the contribution of each factors in students learning achievement.
- To specify difficulties teachers faced due to the classroom physical environment.

1.4. Significance of the study

The impact and significance of physical classroom environment on students' achievement in learning process is addressed in this study. The study is helpful for the students, administrators, teachers, parents especially who are worried about the lesson of their children. Educational office employee (management bodies), school leaders, and teachers in the Adama town government high schools are well aware of the importance of better classroom physical environment to the existing work environment or high schools. The finding of the study brings a constructive change in classroom physical environment to ensure effective teaching and learning process on students achievement. Generally, this study is an attempt to highlight the influence of physical classroom environment on the achievement of students in teaching and learning process in terms

of furniture, noise, lighting, class size, number of students, classroom space requirement, seating arrangement in the classroom, standards of materials found in the classroom and integrating technological materials.

1.5. Delimitation/scope of the study

The study is delimited to Adama town government secondary schools physical classroom environments. The reason for delimiting is that because of limited time and budget, the research restrict to schools that have short distance and schools which are under a single administration umbrella; which is also easier for observation.

1.6. Limitations

The research was carried out under a situation of time limitation and financial constraints. The other drawback was lack of enough literature to refer about topic and sub topics in the study. In addition the researcher collected primary and secondary data from the schools and the record offices of the respective schools with permission from the school principals of the sampled schools; so getting the approved letter from the principals and the secondary data from the record offices were another problem.

1.7. Operational definitions

Classroom physical environment - refers to physical characteristics of the room, which is a combination of different things i.e., lighting, temperature, ventilation system, size of the room, floor, walls, desks, chairs, blackboards, seating arrangement, etc. It also refers to the physical room in which teacher and learners are the main elements.

Teaching -is the process of providing opportunities for students to produce relatively permanent change through the engagement in experiences provided by the teacher.

Learning –is the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something; the activity of someone who learns

Teaching-learning process- is the most powerful instrument of education to bring about desired changes in the students. Teaching learning are related terms. In teaching - learning process, the teacher, the learner, the curriculum and other variables are organized in a systematic way to attain some pre-determined goal.

Achievement- is something that has been done or achieved through effort by the students. Or a result of their hard work: the state or condition or act of having achieved or accomplished their lesson or something; a great deed; the quality and quantity of a student's work.

1.8. Organization of the Study

This study is presented in five chapters. The first chapter gives a general background of the study, statement of the problem, objective, its significance, delimitation of the study. Chapter two deal with the review of literature on classroom physical environment, whereas chapter three specifies the research methodology of the study such as source of data, sampling design and procedure in the study. Chapter four reports result from statistical data analysis and provide discussion. Finally, the last chapter presents summary, conclusion and recommendation based on the finding of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Physical Learning Environment

The learning environment refers to the space allocated for either classroom, science labs, open spaces and offices. Learning environment is also defined as the social context, psychological and pedagogical which can affect learning, achievement and attitudes of the students. Learning environment and features that are in it played a major role in improving learning in schools and is identified as major determinants of student learning. Learning environment capable of stimulating students to engage in the learning process and be able to influence the behavior of students as well as to assist in the development of their skills. (Gee, 2006).

In the learning environment, particularly in schools, furniture, equipment and learning facilities are basic elements that are available. The type of furniture used, pattern arrangement and facilities should reflect the emphasis on learning pedagogy to be implemented. To enable proper learning process, basic elements provided should be appropriate, adequate and functioning properly. Lack of completeness of educational equipment will lower motivation and creativity of teachers and students as well as limiting learning and teaching activities. Therefore, it is right to say that academic achievement has a close link with the availability of educational facilities (Hussain, et al. 2012)

2.1.1. The need for physical learning environment

Learning environment is a major aspect in the teaching and learning process and is crucial to determine students' learning. Learning environment stimulates students' engagement in the learning process and influences their behavior. According to Fraser, (1994); and Kilgour (2006)

there are two major components of the learning environment. These are physical component and psychosocial component. The Physical component includes all physical aspects such as classrooms, teaching materials and learning facilities, both inside and outside the classroom. The psychosocial component is related to the interaction that occurs between students and students, students with teachers and students with the environment. Both of these components complement each other in creating and shaping the learning environment and affect the achievement of students in the teaching and learning process.

Research studies on classroom physical environment have revealed that physical arrangement plays a vital role in teaching learning process. Arranging the physical environment of the classroom is one way to improve the learning environment and to prevent problem behaviors before they occur. Research on the classroom environment has shown that the physical arrangement can affect the behavior of both students and teachers (Savage, 1999; Stewart & Evans, 1997; Weinstein, 1992), and that a well-structured classroom tends to improve student academic and behavioral outcomes (MacAulay, 1990). If a classroom is not properly organized to support the type of schedule and activities a teacher has planned, it can impede the functioning of the day as well as limit what and how students learn. However, a well-arranged classroom environment is one way to more effectively manage instruction because it triggers fewer students' problems and establishes a climate conducive to learning.

The physical structure of a classroom is a critical variable in effecting student morale and achievement. The environment should match your objectives, both in terms of human interaction and your instructional approach that the environment shapes the learner, and learners influence their environment. Generally, the learning setting is comprised of different things i.e., learners, teachers and the physical environment (Lippmann, 2010).

2.1.2. The classroom physical environment

Physical classroom environment is a combination of different things: lighting, temperature, ventilation system, size of the room, floor, walls, desks, chairs, blackboards, etc. It also refers to the physical room in which teacher and learners are the main element including its spatial elements i.e., floor, windows, walls as well as other classroom equipments i.e., desks, chairs, rugs, chalkboards, and computer equipment but not limited to these things (Fisher, 2008)

The classroom physical learning environment plays an important role and has an impact on the teaching and learning process and can affect students' achievement. Elements that are in the classroom seem to interact with each other and have an impact on students learning and may also influence the behavior of students. Therefore, increase the quality of classroom physical learning environment seems to be able to increase the efficiency of students' achievement in teaching and learning process and classroom physical learning environment is an important dimension that should be considered and given attention because of its ability to affect people. (Walberg, 1981)

2.1.3. The need for seating arrangement

The arrangement of seating is another major variable that the physical layout reflects your teaching style. If you want students to collaborate in small groups, for example, organize them around tables or clusters of desks, for frequent whole-group discussions; try a circle or U-shaped desk configuration your seating arrangement is very important. Proper arrangement of furniture also plays a vital and crucial role in classroom functioning. Furniture is arranged with the intention that students may feel comfortable and they may be adjusted to the primary sources or different sources of information e.g., the teacher, instructional materials, while at the same time having accessibility to other sources or the activities e.g., work areas, computers without creating disturbance in the classroom (Nitsaisook and Anderson, 1989).

Higgins, et al (2005) noted that desk arrangement can affect students' achievement and attention. Halstead (1974) states, "A student in the classroom is properly seated if he has a clear view of the instructor, is provided with suitable writing surface and a place for book storage, is reasonably comfortable and is so situated that persons going to from adjacent seats will not disturb him".

2.1.4. Class size and number of students in the class room

The class size where students learn and teachers teach and the number of students in one class should be managed according to the standard of high school levels. Although there is standard written which states in square meter and number of students in one class for the case of high schools in our country ,the reality is far apart .In some developed countries this standard is written on the countries law or constitution:

In 2002, citizens approved an amendment to the Florida Constitution that set limits on the number of students in core classes (Math, English, Science, etc.) in the state's public schools. Beginning with the 2010-2011 school years, the maximum number of students in each core class would be:

- 18 students in prekindergarten through grade 3;
- 22 students in grades 4 through 8; and
- 25 students in grades 9 through 12.

In 2003, the Florida Legislature enacted Chapter 2003-391, Laws of Florida which implemented the amendment by requiring the number of students in each classroom to be reduced by at least two students per year beginning in the 2003-04 school years, until the maximum number of students per classroom did not exceed the requirements in law. (Florida Constitution, 2002)

2.1.5. Space requirements in classrooms

Space is also an important aspect of the learning environment. Floor area should be adapted to the number of students and activities to be accomplished. One element that should be incorporated in the learning space is a multifunctional element. Multifunctional learning space means the space can be used for various functions either to the learning of science subjects, biology, chemistry or physics or for other disciplines. This learning space can be adapted to individual learning, group, discussion and collaboration activities, traditional learning, and discussion involving the entire class, conduct experiments and demonstrations. This can encourage the use of various strategies for teaching and interactive learning with an easier transition and thus integrate theory and practice more effectively. (Chism, N.V.N, 2006).

Overcrowding is a common problem in classrooms. Unfortunately, there are no legal minimum space requirements specifying classroom dimensions. There are, however, a number of legal provisions and sources of guidance that can be drawn upon in challenging cramped /overcrowded/ teaching areas.

The Workplace (Health, Safety and Welfare) Regulations 1992 specify in Regulation 10 that:

*Every room where persons work shall have sufficient floor area, height and
Unoccupied space for the purposes of health, safety and welfare “*

The Approved Code of Practice which accompanies this Regulation specifies that the total volume of the room when empty, divided by the number of people normally working in it, should be at least 11 cubic meters. It could be argued, however, that this figure is a useful point of reference.

Classroom space as regards secondary provision building Bulletin 98: Briefing Framework for Secondary School Projects Provides a useful foundation in this regard. These publications

establish clear guidance on what should be considered as appropriate space requirements in different types of classrooms, alongside corresponding pupil numbers. Bulletin 98 at:

<http://webarchive.nationalarchives.gov.uk/20130401151715/https://www.education.gov.uk/publications/standard/publicationDetail/Page1/BB-98;>

For example:

As regards secondary provision, the table below gives a summary of area guidelines for different secondary subjects depending on the activities taking place in them.

Space type	Recommended area (m ²) According to group size		
	for 20	for 25	For 30
Standard classroom	43	51	60
Science laboratory KS3/4		77	90
Sixth form science laboratory	90	105	
General art room KS3/4		77	90
Large art room (textiles or 3D)		90	105

In primary and middle schools, the ‘standard’ classroom size for a class of 30 pupils is around 70m² (Building Bulletin 99: Briefing Framework for Primary School Projects). Such space limitations automatically place constraints on the amount of ‘free’ space available in the classroom, the types of work attempted and the ability of teachers and classroom assistants to engage and supervise effectively.

2.1.6. Temperature and Light in the class room

Temperature and light in the class room are important determinant factors in teaching and learning process .Too hot or too cold learning class room affects learner’s and teacher’s achievement and initiation. Light is also other important class room physical environment factor in the learning process.

According to Halstead (1974), it is generally accepted that high temperature and humidity creates physiological and psychological problems which expedite fatigue, causes people to work more slowly, apply much efforts and causes to make more mistakes and errors. The classroom climate should be cautiously managed not only to provide physical comfort but also to serve as a positive factor in the learning process by stimulating attentiveness and concentration.

To maintain such a climate, the atmosphere must be treated to simultaneously controlled temperature, humidity, cleanliness and circulation. Earthman (2004) established that temperature, heating and air quality are the fundamental elements for the educational attainment of students. Phillips (1992) noted that lighting is one of the most important physical characteristics of classroom. He further stated that visual environment can affect the capability of students to perceive visual stimuli and also affect their mental attitude. Consequently their academic performance is affected negatively. Culp (2006) found that success can be ensured by using visual displays in classroom.

2.2.The interaction between learner and learning environment

The interaction between learner and learning environment is really important point in the process of learning which makes the process inspirational, lovely and time bounded.

The favorable environment, participates in the teaching-learning process by providing a place where there is a smooth flow of communication, avoiding some common barriers between the teacher and the learner. The presence of a good environment is so much important in the teaching and learning process. The good environment provides a smooth flow of communication between the learners and the teachers, thus it facilitates a well executed teaching and learning process. A good environment is necessary for learning. (Varron, 2011)

From these saying for smooth flow of communication in teaching-learning process, avoiding some common barriers and having favorable physical classroom environment is very important. Twenty-first century learning environments are envisioned as places where the learner is engaged in self-directed and co-operative learning activities, and the physical environment is planned so that it can be routinely re-organized to mediate learning (Partnership for 21st Century Skills, 2002). Therefore, 20th century constructivist concepts which view the learner as active and the learning environment as passive should be replaced with a new perspective. Practice theory recognizes that the learner and the learning environment are active (Dent-Read and Zukow-Goldring, 1997). In the constructivist setting, students learn from their own discoveries, whereas with practice theory learners are transformed and shaped by their transactions alongside others and their physical settings.

2.3. Physical Environment and Learning Process

Learning process is the process of acquiring knowledge or skill. As human beings, we are constantly in one learning process after the other. One of the most active periods of learning came during our early childhood. A child learns thousands of different concepts, impressions and words in a matter of months. To replicate that period of learning isn't really possible. But what we can do is try to rekindle that thirst for knowledge as much as possible. If you want to learn and understand the learning process you have to be willing to buckle up and get down to business. Don't let a single day pass you with having learnt at least one new thing of value. Learning things take time and you this is something we have to accept in order proceed.

(Educational Theory, 2010)

Learning takes time and patience. It is a process /a journey. A self-directed learning process is arguably the most powerful model for facilitating and inspiring individual, group and organizational learning and development.

We provide a learning process to empower people to guide themselves through their personal learning and development journey. This process is built upon three major principles:

1. Identification of gaps between one's IDEAL self and REAL self. These gaps represent a primary motivator to learn and improve.
2. Creation and implementation of a challenging and realistic action plan for development.
3. Ongoing development dialogue between learners and supervisors. Both have a responsibility to ensure that the entire learning process happens.

<https://www.princeton.edu/hr/learning/process>.

2.3.1. Teaching and Learning process

Teaching and learning process is the heart of education. It depends on the fulfillment of the aims and objectives of education. It is the most powerful instrument of education to bring about desired change in the students. [Teaching](#) and [learning](#) involves the process of transferring knowledge from the one who is giving to the one who is receiving. Teaching and learning are related terms. In teaching - learning process, the teacher, the learner, the curriculum and other variables are organized in a systematic way to attain some pre-determined goal. In Teaching and learning process there are three main elements. Teaching process cannot be performed if there is one element that is missing among the three of the teaching and learning elements.

The elements of teaching and learning process are the teacher, the learner as well as the good learning environment. It is being considered that learning occur when there is established relationship among these three elements. The teaching as well as the learning activity depends upon how these elements works together.

Generally several attempts have been made by different researchers all over the world to help students achieve better. Such attempts have been in the form of active learning classroom, arranging the Physical Environment of the Classroom to Support Teaching/Learning, A Place for Learning, The Relations between Physical Environment and Psychosocial Environment, Learning environment stimulates students' engagement in the learning process and influences their behaviour, learning environment assists in the development of students' skills and cognitive abilities, classroom's learning environment, in particular the physical aspect and its features were studied. Studies have also shown that the student is a product of the environment and that the classroom learning environment and teaching materials which exert some dominant influence on learners' academic performance. The present study tries to explore how different factors of classroom physical learning environment affects /influences/ the achievement scores of students in Adama town secondary schools.

CHAPTER THREE

METHODOLOGY

3.1. Research design

This study used both quantitative and qualitative Research design which is mixed. This is because that quantitative analysis cannot always reveal the views and opinions of the people involved in the study.

3.2.Data Source and Type

The study mainly uses primary data gathered by the means of a structured questionnaires responded by students, teachers, and managements. The study was also augmented by the secondary data obtained from school record offices. In addition observation of classrooms and offices and discussions with different group were done by the researcher.

3.3. Study Area

The study was conducted within Adama town high schools. Adama is a city in central Ethiopia. And lies approximately 100 km southeast of Addis Ababa, along the main highway that leads to Djibouti via Dire Dawa .It is a Special Zone of Oromia and surrounded by East Showa Zone. The town has six secondary schools (Grade 9-10).

3.4. Sampling techniques

Two sampling techniques are used in this study. These are convenient sampling and simple random sampling techniques. Convenient sampling is used for the teachers and directors and a Simple random sampling technique is used for the student participants from all or six secondary

schools of Adama town. The reason why the researcher uses convenient sampling is that during when she tried to collect data for pilot testing, most teachers and administrators are not volunteers to give time for responding questionnaires as they are bored of responding questionnaires due to Adama is central and known city for many researchers and do their research there.

3.5. Sample population and procedure

The research study was a correlation study designed to examine the relationship between students' achievement score and the classroom physical environment factors. The population from which the sampling frame was determined is about 5000 people. Given the time constraints on this study, the population was entirely too large to distribute all the questionnaires for each of the sample population. Therefore, a total sample of 300 participants was selected from the sampling areas of secondary school of Adama town.

Table 3.1

Participants of the study from each of the sample schools

No	Name of the schools	students	teachers	Mgts/directors/
1	Goro Secondary School	54	29	3
2	Adama Secondary School	56	30	3
3	Dembela Secondary School	30	15	-
4	Adama Boset Secondary School	20	12	3
5	Burka Boku Secondary School	15	7	1
6	Adama Number-3 Secondary School	15	5	2
7	Total	190	98	12

As it is shown from the table the number of respondents from each groups are:

Students -190, Teachers -98 and Managements -12

3.6. Data collecting instruments

Questionnaires were designed and administered to students, teachers, and management in English, Amharic and Afan Oromo languages to seek information and opinion about the research topic.

Once the questionnaires had been completed the actual data were entered into SPSS Version 20. The data were thoroughly checked for errors with amendments made as required. Where questionnaires were incomplete, only the completed data were entered with further analysis being based on those sections that had been completed. Immediately after the manual edition and checking for completeness the data were entered and analyzed using SPSS.

3.7. Ethical consideration

The research proposal was ethically approved by the Department of Psychology. In addition participants to be involved in the study were fully informed about the nature of the study, the research objectives, and the confidentiality of the data. The potential benefit in participating in the study was explained to all the participants. Informed consent form was written in simple Amharic was read by enumerators with translation to appropriate languages for obtaining full consent with participants in the study. Participants were also being informed about their rights not to participate if they weren't willing.

3.8. Reliability of data collecting instruments

Reliability is the degree to which an instrument tool produces stable and consistence results. So the ability of the data collecting instruments to measure the concept in a consistent manner is one of the important points in doing a research. The table below shows reliability of data collecting instruments. The pilot test was conducted in wonji secondary school by taking 30 students,30 teachers and 3 directors.

Table.3.2***Reliability of data collecting instrument***

No	Variables	No of items	Cronbach's Alpha
1	Class size and number of students	2	0.670
2	Sitting arrangement and space	6	0.715
3	Physical conditions	7	0.673
4	Standards of materials	7	0.648
5	School site and environment	3	0.651
6	Technological materials	2	1.000
7	Students behavior	3	0.789
	Total	30	0.735

The ability of the data collecting instruments to measure the concept in a consistent manner in this research in average is 0.735 which is reliable enough, as it is conventional to view cronbach's alpha of 0.7 and greater is indicating reliable scale. (Christopher L. Heffner , 2014) and McLeod, S. A. (2007)

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

The data were analyzed using mean, frequency, standard deviation, regression, t-test and correlation coefficient.

4.1. Socio-Demographic characteristics of the respondents

Socio-Demographic characteristics include sex, age, educational background, experience, work position, grade level of students and the like. The following three tables present the demographic characteristics of the respondents.

Table 4.1a

Socio-Demographic characteristics of the respondents teachers

Types Of Respondents	Variables	Responses	F	%
Teachers	Sex	Male	73	74.5
		Female	25	25.5
	Total		98	100
	Age	21-25 year	27	27.6
		26-30 Year	21	21.4
		31-35 Year	13	13.3
		36-40 Year	10	10.2
		41-45 Year	10	10.2
		>45	17	17.3
	Total		98	100
	Educational Status	BA/BSC	94	95.9
		MA/MSc	4	4.1
	Total		98	100
	Service of years/experience	1-5 year	35	35.7
		6-10 year	8	8.2
		>10	55	56.1
	Total		98	100
	Grade You Teach	Grade 9	18	18.4
		Grade 10	4	4.0
		Both	76	77.6
	Total		98	100

Table.4.1b***Socio-Demographic characteristics of students respondents***

Types of Respondents	Variables	Responses	F	%
students	Sex	Male	101	53.16
		Female	89	46.84
	Total		190	100.00
	Age	16-20 Years	190	100
		Total	190	100
	Year you learnt	1	55	28.95
		2	106	55.79
		3	13	6.84
		>3	16	8.42
		Total	190	100
	Grade you learnt	9	68	35.79
		10	122	64.21
	Total		190	100.00

The above tables present the demographic characteristics of teacher and student respondents. Accordingly 74.5% of teacher respondents were male while 25.5% were female and 62.3 % of them were between the age of 21-35 years old and the rest 37.7% were above the age 35 years old. Moreover 95.9% of the teacher respondents are at first degree level of education. In addition most of the teacher respondents have an experience of more than ten (10) years (56.1%). Concerning the student respondents 53.2% were male and 46.8% were female and all of them were within the age of 16-20 years old.

Table 4.1c***Socio-Demographic characteristics of the respondents management***

Types Of Respondents	Variables	Responses	F	%
Management /directors/	Sex	male	11	91.67
		Female	1	8.33
		Total	12	100
	Age	21-26 year	1	8.33
		26-30 year	3	25.00
		31-35 year	4	33.34
		36-45 year	3	25.00
		>45 year	1	8.33
		Total	12	100.00
	Educational Status	Diploma	1	8.33
		BA/BSC	9	75.00
		MA/MSc	2	16.67
		Total	12	100
	Teaching Experience	having Teaching exp.	9	75
		Not having Teaching ex.	3	25
		Total	12	100
	Service in managing	1-5 Year	6	50.00
		6-10 Year	1	8.33
		>10 Year	5	41.67
		Total	12	100.00
	Current Position	Principal	3	25
		Vice Principal	9	75
		Total	12	100

The above table presents the demographic characteristics of management/directors/ respondents.

Accordingly, 91.67% of the respondents were male and they were between the ages of 21-45

years old (83.3%). Concerning their level of education, 75% of these respondents were at first degree level and they have more than ten years of teaching experience and 50% of these respondents have 1-5 years of managing experience

4.2. Respondents attitude towards classroom physical environment factors

Respondents show their attitude towards the classroom physical environment factors such as classroom size and number of students, sitting arrangement and space, physical conditions, standards of the materials, school site and environment etc, the tables below shows the respondents attitude towards each factors.

Table 4.2

Students' attitude towards the positively stated statement on classroom size & number of students

Levels of agreement				
Item	Favourable		Unfavorable	
	F	%	F	%
9	86	45.3	106	54.7
15	80	42.1	110	57.9
16	101	53.1	89	46.8
Total	267	46.68	305	53.32

The above table showed majority (53.32%) of the respondents were unfavorable towards the positively stated statement on classroom size & number of students, whereas less than half (46.68%) of them were favorable with the item mentioned.

The data showed that more than half (54.7%) of the respondents were responding that their classroom is not suitable for participating of all students in the classroom for discussion, while less than half (45.3%) of them were agreeing that the classroom is suitable for participating of

all students in the classroom for discussion. In addition, about 58% of the respondents have unfavorable about the classroom is suitable for interacting with other students in their group and other groups in the class and about 42% of the respondents were agreeing that the classroom is suitable for interacting with other students in their group & other groups in the class. On the other hand, less than half (46.8%)) of the respondents were unfavorable towards that they can hear what the teacher says at any place of the classroom, whereas more than half of them were agreeing towards the item.

From the above result one can conclude that the classroom size and number of students in the class is not suitable for interacting with other students in their group & other groups in the class and also for participating of all students in the classroom for discussion.

Table 4.3

Students' attitude towards the negatively stated statement on sitting arrangement and space

Level of Agreement				
Items	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
9	104	54.7	86	45.3
10	111	58.5	79	41.6
11	101	53.2	89	46.8
12	93	49	97	51.1
13	110	57.9	80	42.1
G/Total	519	54.63	431	45.37

The above table shows that more than half (54.63%) of the student respondents were favourable towards the negatively stated statements of the seating arrangement of the classroom whereas less than half (45.37%) of them were disagreeing toward the items mentioned.

The data showed that more than half (54.7%) of the respondents responded that the classroom is not suitable for participating of all students in the classroom for group discussion while less than half (45.3%) of them were responded that the classroom is suitable for participating of all students in the classroom for discussion. More over majority (58.5%) of the respondents were agreeing that it is difficult to read teachers writing on the blackboard because of seating arrangement in their classroom whereas less than half (41.6%) of them were unfavourable towards the difficulty of reading teachers hand writing on the blackboard because of seating arrangement in their classroom. In addition about 58% of the respondents were unfavourable with having enough space to sit and to keep their learning materials in their seating place.

From the above result it is possible to say that the seating arrangement in the classroom is not suitable and comfortable for all classroom management types of teaching and learning process.

Table 4.4

Students' attitude towards the negatively stated statement about the physical condition (light, temp, noise...) of the school

Level of Agreement				
Items	Positive attitude		Negative attitude	
	F	%	F	%
18	122	63.80	69.00	36.20
20	106	55.50	85.00	44.50
22	131	68.10	59.00	39.90
Total/Average	359	63.87	203	36.13

As it can be seen from the above table majority of the students agrees or strongly agree with the negatively stated statements about physical condition. Accordingly, 63.87% of the respondents showed positive attitude toward the negatively stated statements, while 36.13 % of the

respondents showed negative attitude towards the negatively stated items of the physical condition. From the above result one can safely conclude, that the school physical conditions (noise outside the school, temperature in class, light,) has significant effect on learning process.

Table4.5

Management's attitude towards the positively stated statement about the physical condition (light, temp, noise...) of the school

Level of Agreement								
Items	S. Agree		Agree		Dis. Agree		S Disagree	
	F	%	F	%	F	%	F	%
19	0	0.00	10	83.30	2	16.70	0.00	0.00
23	5	41.70	6	50.00	0	0.00	1.00	8.30
25	0	0.00	3	25.00	4	33.30	5.00	41.70
26	2	16.70	2	16.70	5	41.70	3.00	25.00
Total/Avg.	7	11.7	29	48.3	15	25	9	15

The above table shows that 48.3% of the respondents agree with the above positively stated statements of the physical conditions of the school, While 11.7% of the respondents strongly agree to the items .In other words 60% of the respondents showed their agreement or were favourable towards the positively stated statements of the physical conditions of the school . And 40% of the respondents disagree or were unfavourable with the stated items or positively stated statements of the physical conditions of the school.

The data showed that more than three-fourth (83.3 %) of the management /directors/ respondents were favourable towards Classrooms /offices /have adequate lighting – able to read & write whereas less than one-fourth (16.7%) of the respondents only were unfavourable towards the item. Besides this almost all (91.7%) of the respondents were favourable towards having

adequate lighting in the classroom/office / and only 8.3% of them were unfavourable towards the item.

On the other hand, three-fourth (75%) of these respondents were unfavourable with presence of good air flow in the classroom/office/ whereas one-fourth (25%) of the respondents were positive or favourable with issue mentioned. Moreover, two-third (66.7%) of the respondents were unfavourable (negative) towards the presence of comfortable temperature in the classroom while one-third (33.4%) of them were favourable with the item mentioned.

From the above result it is possible to understand that the majority of the respondents showed positive attitude towards the positively stated statements of the physical conditions of the school which means that they were agreeing in having adequate lighting in the classroom/office.

Table 4.6

Management's attitude towards the negatively stated statement about the physical condition (light, temp, noise...) of the school

Items	Level of Agreement							
	S. Agree		Agree		Dis. Agree		S Disagree	
	F	%	F	%	F	%	F	%
5	3	25	5	41.70	3	25.00	1.00	8.30
12	3	25	7	58.30	2	16.70	0.00	0.00
20	0	0	9	75.00	3	25.00	0.00	0.00
Total/Average	6	16.7	21	58.3	8	22.2	1	2.8

The table showed that 58.3% of the respondents agree with the negatively stated items about the school physical condition, while 16.7% of the respondents Strongly Agree with items that means 75% of the respondents showed their agreement towards the negatively stated statements. On the other hand 22.2% of the respondents showed their disagreement towards the negatively stated

items, while 2.8% of the respondents strongly disagree with these items, which means 25% of the respondents showed their disagreement or were unfavourable towards the school physical condition.

The data showed that two-third (66.7%) of the respondents were favourable or showed their agreement towards outside communities' noise is disturbing in class whereas one-third (33.3%) of them were showed their disagreement. In addition to this 83.3% of the respondents were favourable towards the difficulty of working in the classroom or office because of the next class noise and only 16.7% of them showed disagreement towards the item mentioned. Furthermore, three-fourth (75%) of them were favourable with the difficulty of working in an office /classroom/ because of the hot temperature and only one-fourth (25%) of them were unfavourable with the issue mentioned.

From the above result it is possible to said that, large percent of the respondents have positive attitude towards negatively stated items that means the respondents showed that problem of outside community noise, the noise of next class and temperature in the class room are some of the physical conditions showing difficulty or problem on teaching and learning process.

Table4. 7

Students' attitude towards the positively stated statement on standards of materials

Level of Agreement				
Items	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
4	139	73.1	51	26.8
21	118	62.1	72	37.9
Total	257	67.63	123	32.37

The above table shows that majority (67.63%) of the respondents were favourable towards the positively stated statement on standards of materials. On the other hand only 32.37% of the respondents were unfavourable with the items.

The data in the table showed that almost (73.1%) of the respondents were responding that size of tables and chairs used in learning are important in the classrooms whereas only about one-fourth (26.8%) of the respondents were responding that size of tables and chairs used in learning are not important in the classrooms. In addition about 62% of the respondents were favourable towards that in the classroom, more technological materials are used in the classroom and about 38% of them were unfavourable towards the item. As a result of these it is possible to conclude that most of the respondents were favourable towards the positively stated statement on standards of materials.

Table 4.8

Students' attitude towards the negatively stated statement on standards of materials

Level of Agreement				
Items	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
5	86	45.3	104	54.7
6	97	51.1	93	49
10	111	58.5	79	41.6
17	101	53.1	89	46.8
18	121	63.7	69	36.3
23	141	74.2	49	25.8
Total	657	57.63	483	42.37

The table showed that most (57.63%) of the respondents were favourable towards the negatively stated statement on standards of materials whereas 42.37% of the respondents were unfavourable towards the negatively stated statement on standards of materials.

The data in the above table showed that above half (51.1%) of the respondents were responding that the tables and chairs used in their classroom's are not comfortable for writing. On the other hand 49% of the respondents were responding that the tables and chairs used in their classrooms are comfortable for writing. Moreover, the data showed that more than half (58.5%) of the respondents were favourable towards that they are afraid of quiz because of the blackboard while less than half (41.5%) of the respondents were unfavourable towards the item. In addition to that more than half (53.1%) of the respondents were agreeing that they feel hot in the class as the windows are too small and appeared at high level whereas less than half (46.9%) of the respondents were unfavourable towards the item. furthermore about 64% of the respondents were responding that it's often difficult to pay attention in classroom because of the next classroom noise while about 36% of the respondents were responding that it's not often difficult to pay attention in classroom because of the next class noise.

Therefore, one can say that the standards of the materials in the classroom like size and comfortableness of tables, chairs, windows, and the height of the roof are not standardized enough.

Table 4.9

Teachers' attitude towards the positively stated statement about the standards of materials in class

Item	favourable attitude		unfavourable attitude	
	F	%	F	%
17	44	44.9	54	55.1
18	38	38.8	60	61.2
24	69	70.4	29	29.6
Total	151	51.36	143	48.64

As it can be seen from the table, teachers disagreed or strongly disagreed with positively stated items. Accordingly 51.36% of the respondents agree with the positively stated items of the standards of materials, while 48.64% of the respondents disagree with the positively stated items.

The data showed that less than half (44.9%) of the respondents were favourable or agreeing that the school has good library and laboratory for students and teachers while more than half (55.1%) of the respondents were responded that the school has not good library and laboratory for students and teachers. in addition about 39% of the respondents were responding that the size of tables and chairs used in the classroom are suitable for teaching and learning process whereas about 61% of the respondents were disagreeing or responding that the size of tables and chairs used in the classroom are not suitable enough for teaching and learning process.

From the above result one can understand that most of the teachers were disagreed with positively stated items of the standards of materials.

Table 4.10

Teachers' attitude towards the negatively stated statement about the standards of materials in class

Item	favourable attitude		unfavourable attitude	
	F	%	F	%
9	52	53.1	46	46.9
11	58	59.2	40	40.8
Total	110	56.12	86	43.88

The table showed that 59.2% or majority of the respondents were agreed with the negatively stated statement about the standards of materials in school while 43.88% of them were disagreeing with the items mentioned.

The data showed that more than half (56.12%) of the respondents were favourable or agreeing that the size of the classroom is a problem to maintain discipline of the students in the classroom whereas less than half (43.88%) of them were said that the size of the classroom is not a problem to maintain the discipline. Moreover, more than half or nearly about 60% of them were agreeing that they feel hot in the classroom because of no standardized door & windows in the class. From the above result one can conclude that most of the materials in the school or classroom do not have the standardized size of furniture and learning materials.

Table 4.11***Students' attitude towards the positively stated statement on school site and environment***

Items	Level of Agreement			
	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
2	61	32.1	129	67.9
3	89	46.8	101	53.1
24	106	55.8	84	44.2
25	90	47.3	100	52.6
Total	346	45.53	414	54.47

The table showed or states that majority (54.47%) of the respondents were unfavourable towards the positively stated statement on school site and environment whereas less (45.53%) of the respondents were favourable towards the item.

The data showed that more than two-third (67.9%) of the respondents responded that the classroom physical environment in the sample schools' is not suitable and comfortable for all students in the classroom (school) while less than one-third (32.1%) of the respondents were responding that the classroom physical environment in their school's is suitable and comfortable for all students in the school. Moreover, more than half (53.1%) of the respondents responded that the classroom physical environment in the researching area of the schools do not make students feel welcome whereas less than half (46.9%) of the respondents were favourable with the item mentioned. Furthermore more than half (52.6%) the respondents were responding that they do not feel physically safe outside of the classroom. On the other hand less than half (47.3%) of the respondents were favourable towards the item.

From the above result one can conclude that the school site and environment in the researching areas or sampling schools' is not suitable, comfortable and also do not make students feel welcome and physically safe outside of the classroom.

Table 4.12

Students' attitude towards the negatively stated statement on school site and environment

Level of Agreement				
Items	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
1	106	55.8	84	44.2
22	106	55.8	84	44.2
Total	212	55.79	168	44.21

The above table showed that majority (55.79%) of the respondents was favourable towards the negatively stated statement on school site and environment while 44.21% of the respondents were unfavourable towards the items.

The data in the table showed that more than half (55.8%) of the respondents were agreed that the school classroom physical environment affects their learning negatively and the outside communities' noise is disturbing in class/school whereas less than half (44.2%) of the respondents were disagreeing that the school classroom physical environment affects their learning initiation negatively and the outside communities' noise is disturbing in class/school. Therefore, it is possible to conclude that the school site and environment affects the students learning initiation negatively and outside communities' noise is disturbing in class.

Table 4.13***Teacher's attitude towards the positively stated statement on school site and environment***

Level of Agreement				
Items	Favorable Attitude		Unfavorable Attitude	
	F	%	F	%
2	47	47.96	51	52.04
3	28	28.6	70	71.4
4	40	40.8	58	59.2
15	31	31.63	67	68.37
Total	146	37.24	246	62.76

The above table shows, that majority (62.76%) of the teacher respondents were unfavorable with the positively stated statements about the school site and environment whereas only 37.24% of the respondents were favorable towards the positively stated statements. It indicates that the school site and environment is not comfortable for the teaching and learning process.

The data showed that less than half (47.96%) of the teacher respondents were favorable with the collegiality of the school atmosphere and more than half (52.04%) of the respondents were unfavorable to the collegiality of the school atmosphere. In addition below one-third (28.6 %) of these group were favorable with the safeness of the school physical environment for both students and teachers and above two-third (71.4%) of these respondents were unfavourable with the item mentioned. Moreover the data showed that less than half (40.8%) of these respondents were favourable with the school physical classroom environment suitability for teaching and learning process whereas more than half (59.2%) of these respondents were unfavorable with the item. Similarly about one-third (31.63%) of the respondents were positive with the beautifulness of the classroom attract students and teachers in the school and nearly about two-third (68.37%)

of these respondents were unfavourable (negative) with the item mentioned. One can conclude that the school site and environment is not comfortable, suitable & safe enough as needed. Moreover, the school site and environment of the researching area is not beautiful enough and has no good atmosphere.

Table 4.14

Teachers' attitude towards the negatively stated statement on school site and environment

Level of Agreement				
Items	Favourable Attitude		Unfavourable Attitude	
	F	%	F	%
1	65	66.3	33	33.7
10	48	49	50	51.1
20	54	55.1	44	44.9
Total	167	56.80	127	43.20

The table shows, that majority (56.80%) of the teacher respondents were favourable with the negatively stated statements about the school site and environment whereas 43.20% of the respondents were unfavourable towards the negatively stated statements showing that the school site and environment is not comfortable for the teaching and learning process.

The data showed that two-third (66.3%) of the teacher respondents were favourable with that the school classroom physical environment affects the learning achievement while one-third (33.7%) of them were unfavourable /disagree/ with the item. Moreover, almost half (49%) of the respondents showed their agreement towards the outside community noise disturbs them in classroom as it is situated near living houses .In addition more than half (55.1%) of the teacher respondents were favourable or agreeing that the location of school classroom physical

environment affects their teaching and learning process and only 44.9% of them were disagreeing with the item.

From the above result one can said that the school site and environment variable of the school classroom physical environment of the researching area is not suitable enough.

Table 4.15

Management's attitude towards the positively stated statement about the school site and environment

Level of Agreement								
Items	Strongly. Agree		Agree		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%
2	0	0.00	4	33.40	4	33.30	4	33.30
6	0	0.00	4	33.3	1	8.3	7	58.3
7	1	8.50	4	33.30	2	16.70	5	41.70
8	6	50.50	5	41.70	1	8.30	0	0.00
13	0	0.00	2	16.7	5	41.7	5	41.7
14	0	0.00	5	41.7	1	8.3	6	50
30	0	0.00	3.00	25.00	3	25.00	6	50.00
Total	7	8.33	27	32.14	17	20.23	33	39.28

The table presents that less than half (40.47%) of the management respondents showed their favourable attitude towards the positively stated statement of the school site and environment while 59.5% of them showed unfavourable attitude towards the positively stated items.

The data showed that one-third (33.4%) of these respondents were favourable towards that the school atmosphere and the beautifulness of the classroom attracted the attention of the students, whereas two-third (66.6%) of these respondents were unfavourable towards the item mentioned.

The data also showed that less than half (41.8%) of these respondents were favourable with

school administrators provides good physical classroom environment for all teachers & students while more than half (58.3%) of the respondents were unfavourable towards the item mentioned. In addition almost all (92%) of the respondents were positive towards physical environment plays vital role in teaching and learning process whereas only 8% of them were negative towards the item .Besides less than half (41.7%) of these respondents were favourable towards the safeness of the school environment while more than half (58.3%) of them were unfavourable about the issue mentioned. Similarly one-fourth (25%) of the respondents were favourable towards the presence of well maintained /accessible toilets were used in the school whereas three-fourth (75%) of the respondents were unfavourable towards the item.

From the above result, it is possible to say majority of the management workers have negative attitude toward the school site and environment.

Table 4.16

Management's attitude towards the negatively stated statement about the school site

Level of Agreement								
Items	S. Agree		Agree		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%
9	1	8.30	2	16.70	4	33.30	5	41.70
10	1	8.30	3	25.00	3	25.00	5	41.70
11	4	33.30	5	41.70	3	25.00	0	0.0
Total/Average	6	16.3	10	27.81	10	27.78	10	27.81

As it indicated in the above table more than half (55.59%) of the respondents were unfavourable or showed disagreement towards negatively stated statements and less than half (44.11%) of the respondents were favourable or showed agreement towards the above negatively stated items about school site and environment.

The above data showed that only one-fourth (25%) of the management respondents showed their agreement towards educational experts should not be participated in providing of good physical classroom environment's of schools whereas three-fourth (75%) of these respondents were unfavourable or showed their disagreement towards the item mentioned. Moreover one-third (33.3%) of the respondents were favourable about the School's classroom physical environment don't matter administrative bodies while two-third (66.7%) of the respondents were unfavourable towards the item. again three-fourth (75%) of the respondents were favourable towards that location of schools affect the learning process whereas only one-fourth (25%) of them were unfavourable towards the item.

From the above result it is possible to understand that larger percent of the management workers showed negative attitude towards the statements about school site and environment. That means the educational experts/ administrative bodies/ should be participated in providing of good physical classroom environment and the school classroom environment and also location of the school matters or affects the learning process and the administrative bodies.

Table 4.17

Teachers' attitude towards the negatively stated statement about the school classroom physical environment

Items	Level of agreement			
	Favourable Attitude		Un favourable attitude	
	F	%	F	%
1	65	66.3	33	33.7
5	39	39.8	59	60.2
9	52	53.1	46	46.9
10	48	49	50	51
11	58	59.2	40	40.8
13	50	51	48	49
14	65	66.3	33	33.7
16	45	45.9	53	54.1
Total/average	422	53.82	362	46.18

The above table showed /states that 66.3% of the teachers responds that the physical environment of the school affect their initiation. While 33.7% of them disagree that the physical environment does not affect their initiation .This result shows that majority of the teachers initiation was affected by the classroom physical environment. Moreover 53.1% of the respondents agree that to maintain the discipline, the classroom size is a problem, while 46.9% of them stated that it is not a problem.

On the other hand 59.2% of the respondents state that the classroom is hot because of the absence of standard of the door and window ,while 40.8% of them responded that the standards of the door and window is not a problem. Similarly 66.3% of the respondents agree that, it is often hard to teach in the class because of the hotness of the classroom temperature.

Generally as it can be seen from the above table majority of the respondents agree with the negatively stated statements, accordingly 53.82% of the respondents agree with these statements. On the contrary 46.18% of the respondents disagree with the negatively stated statements. This is safe to conclude that almost more than half of the respondents understood the issue of consideration and showed positive attitude towards the factors (problems of classroom physical environment) and its problems.

4.3. Attitude differences in gender about classroom physical environment factors

To check the attitude difference in gender a t-test comparison or an independent sample t-test was computed. The following tables present the attitude difference in gender.

Table 4.18

T-test comparisons of students' attitude towards the class room size based on gender

No	Gender		Mean	SD	Mean Deviation	F	T	df	Sig.(2 tailed)
1	M	101	4.78	1.46	0.207	0.224	0.997	188	0.32
	F	89	4.99	1.386					

As it can be seen from the table, the mean score of male students is 4.78 with the standard deviation of 1.46 while the mean score of female students were 4.99 with standard deviation of 1.386. This indicates that, there is statistically no significant difference in the attitude of students towards the class room size and number of students in the classroom. Similarly the sig (P-value) which is 0.320 is >0.05 which confirms that there is statistically no significant difference in attitude between the male and female students in relation to the class size and its related problem.

Table 4.19***T-test comparisons of students' attitude towards the school physical condition based on gender***

No	Gender		Mean	SD	Mean D	F	t	df	Sig.(2 tailed)
1	M	101	18.51	2.666	0.638	0.026	1.65	188	0.101
	F	89	17.88	2.666					

As it can be seen in the table above the mean score of male students was 18.51 and their SD was 2.666 while the mean score of female students was 17.88 and their SD was 2.66. The above table shows that there is no significant difference in attitude between male and female students on physical condition of the school. Similarly the p-value computed using an independent sample T-test to identify whether there is any difference between male and female group respondents indicates 0.101, which is statistically no significant difference in attitude between the two groups on the physical conditions of the school.

Table 4. 20***T-test comparisons of students' attitude towards the school site and environment based on gender***

No	Gender		Mean	SD	MD	F	t	P-value(Sig)
1	M	101	14.88	2.632	0.252	0.833	0.686	0.494
	F	89	14.63	2.404				

The above table shows that, the mean score of male students were 14.88 and standard deviation was 2.632 and the mean score of female students were 14.63 and their standard deviation 2.404. And p-value is 0.494 which is greater than 0.05, this indicated that, there is statistically no

significant difference between the attitude of male and female students on school site and environment.

4.4. Relationship among variables

Relationship among different variables or whether there exist any relation between the different ability of the variables or they are independent of each other can measured and presented by the following tables.

Table 4.21

Relation of students result (achievement score) with demographic variables

		sex	Grade	Year learnt	Achievement score
Sex	Pearson correlation Sig(2-tailed)	1			
Grade	Pearson correlation Sig(2-tailed)	-0.091 0.211	1		
Year learnt	Pearson correlation Sig(2-tailed)	-0.182* 0.012	0.204** 0.005	1	
Achievement score	Pearson correlation Sig(2-tailed)	0.144* 0.047	-0.051 0.483	-0.012 0.871	1

N=190

The above table shows relation between students score (academic achievement score) and demographic Characteristics of students. Accordingly, the grade level and the year students learnt correlates positively, which indicates that as the grade level increases, the year the students learnt increases. The p-value which is, 0.005, indicates that there is statistically significant relation between the grade level and, the year the students learnt .In addition the achievement

score of students and the gender/sex/ correlate positively. The p-value which is 0.047 indicates that there is statistically significant relation between the achievement score and sex of students.

Table4. 22

The correlation among independent and dependent variables

variables	SR	SSE	SPHC	SAS	CSNS	SLM	TM	SBR
SR Pearson corr. sig.(2 tail)	1							
SSE Pearson corr. sig.(2 tail)	-0.056 0.443	1						
SPHC Pearson corr. sig.(2 tail)	-0.179* 0.013	0.118 0.109	1					
SAS Pearson corr. sig.(2 tail)	-0.004 0.960	0.020 0.785	0.359** 0.000	1				
CSNS Pearson corr. sig.(2 tail)	-0.160* 0.028	0.017 0.819	0.078 0.2.87	0.318** 0.000	1			
SLM Pearson corr. sig.(2 tail)	-150* 0.039	-0.067 0.367	0.340** .000	0.132 0.069	0.237** 0.001	1		
TM Pearson corr. sig.(2 tail)	-.054 .461	-.189** .009	-0.109 0.135	0.094 0.197	.250** 0.001	-.216** 0.003	1	
SBR Pearson corr. sig.(2 tail)	-.128 0.080	-.036 .626	-.238** 0.001	.486** 0.000	.370** 0.000	-.056 .439	.197** .006	1

N=190

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

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

The above table depicts the correlation among the independent variables, such as the school site and environment of the school, physical condition of the classrooms, sitting arrangements, class

size & no of students and the standard of the materials and the dependent variables i.e. the students achievement score. Accordingly the correlation between the students' achievement score and Physical condition of the school is -0.179, which is negatively correlated, it indicates that when the problem of physical conditions of the classroom (noise in and out of the classroom, temperature, hotness, etc) increases, the students' achievement score decreases. The p-value which is, 0.013, indicates that there is statistically significant relation between the students result and the classroom physical conditions.

On the other hand the physical condition of the classroom is positively correlated with standards of the materials in the classroom, which is 0.340; this refers that, when the problems of the standard of materials of the classroom increases the problems of the physical conditions of the school also increases or when the problems of the standard of materials of the classroom decreases the problems of physical conditions of the school also decreases. It is to say that when the standards of materials in the classroom improved, that the problems of the physical conditions also improved. The P-value also supports this, which is 0.000, indicates that there is statistically significant relation between the standards of materials and the classroom physical conditions.

Moreover, the class size & number of students in the classroom is positively correlated with the sitting arrangement in the classroom, accordingly the correlation indicates 0.318 with the P-value of 0.000 indicates that there is statistically significant relation between the classroom size and sitting arrangements. This result shows that when the classroom size & number of students in the classroom are not with standardized size and amount, there is a problem of sitting arrangement and space in the classroom.

In addition the achievement score of the students' is negatively correlated with the class size and number of students in the classroom (-0.160). This refers that when the problems of class size and number of students increase the achievement score of the students becomes decreases. Similarly the achievement score of the students' is negatively correlated with the standards of materials in the classroom (-0.150) this refers when the problems of standards of materials in the classroom increases, the achievement score of the students decreased. Furthermore, the physical conditions of the classroom is positively correlated with the sitting arrangements' of the students in the classroom (0.359), it refers that when the problem of sitting arrangement in the classroom increases the problem of the physical conditions of the classroom also increases. The P-value also supports this, which is 0.000, indicates that there is statistically significant relation between the sitting arrangements of the student in the classroom and the physical conditions of the classroom.

In addition the students' behavior is positively correlates with classroom size and number of students and sitting arrangement and space which indicates that when classroom size and number of students and sitting arrangement and space are maintained, the behavior of the students becomes improved. The P-value also supports this, which is 0.000, indicates that there is statistically significant relation between the items mentioned.

4.5. Linear Regression test of variables

In order to determine the effect of the physical classroom environment factors on the achievement score of students, an average points of the 2006 academic year students mark or grade were taken from record rooms of each of the representative samples of the sampling schools. The result is presented below.

Table4. 23

Linear Regression test of the school physical environment, standards of materials, physical condition based on the students Achievement score

	Model	Unstandardized coefficient		Standardized coefficients	t	sig
		B	Std. error	Beta		
	constant	70.813	11.077		6.393	.000
	Classroom size & No of students.	-1.082	0.666	-.126	-1.624	0.106
	Sitting arrangement	0.526	0.386	0.109	1.371	0.172
	Physical condition	-1.260	0.367	-.275	-3.431	0.001
	Standard of materials	0.750	0.296	0.199	2.531	0.012
	School site & environment	-.156	1.067	-.010	-.146	0.884
	Technological materials	-.755	1.959	-.030	-.385	0.701
	Students behavior/character	-.535	.586	-.079	-.914	0.362

The above table shows that the B-coefficient value was 70.813 at zero level of the constant but with increase the problems of the classroom size, sitting arrangements, physical conditions, standard of the materials and the site and environment of the school, the B-coefficient shows variability. Accordingly the highest B-coefficient value is the standards of the materials in the school, with B-coefficient value of 0.750 and P-value of 0.012. This indicates that, the standard of materials problem is the most important factor affecting the students' result in the school. The P-value also indicates that there is statistically significant contribution or relation between the standard of the materials in the school and the students' achievement or performance score.

Another important factor for predicting the academic achievement or performance of the

students is the physical condition of the school,($B=-1.260, P=0.001$),the coefficient is negative, indicating that, the higher problem of the physical conditions of the school ,causes lower academic achievement score of the students , $P=0.001$,indicates that there is statistically significant relation between the school physical conditions and the students achievement score.

The above result shows that the school physical conditions and the standard of material are the most dominant factors affecting the students' achievement in the school.

Table4 .24

Linear Regression test of classroom size and number of students

model	Unstandardized coefficient		standard ized coefficient	t	P /Sig.	mean	SD	r	r^2
	B	Stand. Error	Beta						
1.Constant	68.244	3.151		21.661	0.000				
Classroom size & No of students	-1.086	.616	-.127	-1.762	0.080	4.91	1.444	0.127	0.016

The above table showed the linear regression comparison of the classroom size and number of students. Accordingly, the p-value (0.08), is higher than 0.05, but the coefficient is negative (-1.086) which indicate that, when the problem of classroom size and number of students increase the achievement score of the students decrease. Therefore, classroom size and number of students has statistically significant contribution to the achievement of students.

Table 4.25***Linear regression test of the sitting arrangement and space***

Model	Unstandardized coefficient		standardized coefficient	t	P /Sig.	mean	SD	r	r ²	
	B	Stand. Error	Beta							
1.constant	66.245	5.325		12.441	0.000					
sitting arrangement and space	-.224	0.354	-.046	-.634	0.527	14.83	2.533	0.046	0.002	

The above table showed that the linear regression comparison of the sitting arrangement and space variable. Accordingly, the B-coefficient is -0.224 and the p-value is 0.5 which is greater than 0.05 but the B-coefficient is -0.224 indicates that when the problem of sitting arrangement and space increases the result of the students become decreases. From this one can said that sitting arrangement and space has statistically significant contribution to the achievement of students.

Table 4.26***Linear Regression test of physical conditions***

Model	Unstandardized coefficient		standardized coefficient	t	P /Sig.	mean	SD	r	r ²	
	B	Stand. Error	Beta							
1.constant	75.432	6.235		12.098	0.000					
Physical conditions	-.685	0.338	-.146	-2.027	0.044	18.27	2.628	0.146	0.021	

The above table showed that the linear regression comparison of the physical conditions variable. The table showed that the B-coefficient is -.685 and its p-value is 0.044. The B- coefficient negative indicating that, the higher problem of the physical conditions of the school ,causes lower academic achievement score of the students , and P=0.04,indicates that there is statistically significant relation between the school physical conditions and the students achievement score. Therefore, it is possible to conclude that the physical conditions of the school have statistically significant contribution to the achievement of students.

Table 4.27

Linear Regression test of standard learning materials

model	Unstandardized coefficient		standardized coefficient	t	P /Sig.	mean	SD	r	r2	
	B	Stand. Error	Beta							
1.Constant	53.088	5.099		10.412	0.000					
Standardized learning materials	0.535	.273	0.141	1.958	0.052	18.38	3.252	0.141	0.020	

The above table showed that the linear regression comparison of the standardized learning materials variable. The table showed that the B-coefficient is 0.535 and its p-value is 0.052. The B- coefficient positive indicating that, when the standards of learning materials of the school increases, academic achievement score of the students also increases, and P=0.05, indicates that there is statistically significant relation between the school standardized learning materials and the students achievement score. Therefore, it is possible to conclude that the standardized

learning materials of the school have statistically significant contribution to the achievement of students.

Table4 .28

Linear Regression test of technological materials

Model	Unstandardized coefficient		Standardized coefficient	t	P /Sig.	mean	SD	r	r^2	
	B	Stand. Error	Beta							
1.Constant	66.487	4.911		13.539	0.000					
technological materials	-1.361	1.842	-0.054	-0.739	0.461	2.62	0.482	0.054	0.003	

The above table showed that the linear regression comparison of the technological materials variable. The table showed that the B-coefficient is -1.361 and its p-value is 0.46, which is higher than 0.05 but the B- coefficient is negative indicating that, the higher problem of technological materials of the school, causes lower academic achievement score of the students,. Therefore, it is possible to conclude that technological materials of the school have statistically significant contribution to the achievement of students.

Table 4.29

Linear Regression test of students' behavior

Model	Unstandardized coefficient		standardized coefficient	t	P /Sig.	mean	SD	r	r ²
	B	Stand .Error	Beta						
Constant	69.566	3.874		17.958	0.000				
Students behavior	-0.868	0.492	0.128	-1.763	0.080	7.66	1.809	0.128	0.016

The above table showed the linear regression comparison of students' behaviour variable. Accordingly, the p-value (0.080), is higher than 0.05, but the coefficient is negative (-0.868) which indicate that, when the problem of students' behavior increase the achievement score of the students decrease. Therefore, students' behavior has statistically significant contribution to the achievement of students.

CHAPTER FIVE

SUMMARIES, CONCLUSION, AND RECOMMENDEATION

This chapter summarizes the findings of the study and conclusions which were made based on the findings of the study, finally recommendations were forwarded.

5.1. Summary

This study is intended to assess or examines the influence of classroom physical environment on teaching and the learning process of students in Adama town. The assessment was made by taking data from the teachers, students and managements based on their educational level, experience, age, sex and position of teachers and managements in the school.

In conducting the study the researcher used convenient sampling and simple random sampling techniques. Convenient sampling was used for the teachers and managements while simple random sampling was employed for students.

Accordingly, twelve/12/ management employee, 98 teachers and 190 students were taken from six or all secondary schools of Adama town. Primary and secondary data were major sources of data. The primary sources of data were students, teachers and management workers and secondary data were document reports of school and recorded results of students. In gathering the data, different types of questionnaires were developed in relation to the classroom size, sitting arrangements and space, physical conditions, standards of learning materials, school site and environment and technological related factors. The data were analyzed using tables by compelling their mean, frequency, regression, standard deviation; T-test and correlation coefficient were used to test whether there is significant difference among the variables.

5.2. Conclusion

This study aimed at examining the influence of classroom physical environment on the teaching and learning process. In Adama town secondary schools, twenty five basic questions were investigated; consequently the following conclusions are made:

The finding of the result shows that 67.5% of the student have unfavorable attitude about the physical conditions of the school, which indicates that, the classroom physical condition is not suitable and comfortable for students. Similarly they showed unfavorable attitude with score of 52.8 % that the classroom physical condition do not make students feel welcome. Furthermore, majority (63.87%) of the student respondents showed positive attitude toward the negatively stated statements of these items, i.e. the noise outside the school, temperature in class, light, etc has significant effect on learning process.

The finding of the result also showed that sitting arrangement and space in the classroom is not suitable for participating of all students in the classroom for discussion and it is difficult to read teachers writing on the blackboard because of seating arrangement and have not enough space to sit and to keep their learning materials in their seating place. Moreover, the finding showed that, more than half (53.1%) of the respondents responded that the classroom physical environment in the researching area of the schools do not make students feel welcome and more than half (55.8%) of the respondents were agreeing that the school classroom physical environment affects their learning initiation negatively and the outside communities' noise is disturbing in class/school.

In addition concerning the standards of the materials majority (67.63%) of the student respondents were favourable towards the positively stated statement on standards of materials

which means the size and comfortableness of tables, chairs, windows, and the height of the roof are not standardized enough and suitable for teaching and learning process.

Moreover, the finding showed that, the classroom size and number of students in the class is not suitable for interacting with other students in their group, other groups in the class and participating of all students in the classroom for group discussion

The finding of this study shows that majority of the teacher respondents have unfavorable attitude about the atmosphere of the school, with the attitude score of 52.04%, which indicate that the school has no atmosphere of collegiality. Moreover it indicates that the school environment is not safe for the teachers and students, with the attitude score of 71%. Similarly the result of the study indicate that, the classroom environment is not suitable for teaching and learning process.

Concerning the standards of the materials in the classroom, majority of the teacher respondents (64.9%) of them have negative attitude towards it, which means, because of the absence of standardized doors and windows, the classroom is very hot. As a result, it is often hard to teach in the classroom. In addition the schools have no good laboratory and library for the students and teachers. Similarly the schools have no good toilet for teachers, male and female students; the tables and chairs used in classroom are not comfortable for the teaching and learning process.

Moreover, the classroom size and space of the school is a very great problem for teachers to teach as well to maintain the discipline of the students, due to these reasons the physical classroom environment of the school affects the teachers' initiation to teach, with the attitude score of 66.3%.

Moreover the findings of the study clearly shows that, majority of the management workers have negative attitude about the school atmosphere, accordingly 59.51% of them disagree that the schools environment is not attractive to the teachers and students.

The result of this study, based on the independent t-test computed score of sex also indicates that there is no statistically significant difference in attitude between male and female respondents on the classroom physical environment of the school.

Based on the linear regression test result, the standards of materials in the school is the most dominant factor that affects the students' achievement score. The school physical condition is the second dominant factor.

Generally speaking classroom physical environment in the researching areas are not conducive for smooth teaching learning process resulting exhaustion and disturbance among the students.

5.3. Recommendations

The researcher believes that the finding of this study pin points the direction of the problem for the case under investigation. Thus the following recommendations are forwarded. The result of the study shows that, the school under study has no atmosphere of collegiality and is not suitable for teaching and learning. Therefore the school should give high emphasis on making the school attractive and create good learning environment by involving the community, the woreda educational administrative bodies and other non- governmental organization. Similarly the management bodies' role in improving the school environment is found to be very low. Therefore the school community, the town's educational office should provide emphasis when administrators are assigned to schools as their managing have significant effect on students result. They should deeply evaluate their ability, capacity, academic specialization and experiences of managing they have. The classroom size and number of students in the classroom is a very great problem for teachers to teach as well to maintain the discipline of the students. In this case, the town's educational office and the management bodies' of the school should provide emphasis in building school and arranging students in the classroom.

On the other hand the study shows that the school physical condition is found to be uncomfortable, therefore it is highly recommended to make scientific study when schools are built.

Generally based on findings, it was recommended that classroom physical environment should be given attention by the concerned body and the community to be attractive, comfortable, suitable, well-organized, equipped and facilitated.

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APPENDIXES

Appendix 1

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PSYCHOLOGY

Questionnaires for respondents of students:

Dear respondents,

The purpose of the study is to examine the influence of classroom physical environment on the learning process of students in Adama town. So this questionnaire is designed to gather information in your school in connection to the issue under investigation. I hope you will answer all of the questions including the personal descriptors at the beginning of the questionnaire. All responses are confidential and will be reported only as part of group results. So you are kindly requested to provide your genuine responses because the effectiveness of the research depends on your responses to each question. Therefore, be as objective as possible put a tick/√/ mark to each item in the table for each question

Thank you in Advance for all your cooperation.

PART ONE: General information

For the purposes of this research only, please fill in the following information:

1. School's name-----
2. Sex: male ☐ female ☐
3. Age: 16-20 ☐ 21 - 25 ☐ 26- 30 ☐ 31-35 ☐ Above 36 ☐
4. How many years have you been learned at this school?
Less than 1 year ☐ 2 years ☐ 3 years ☐ more than 3 years ☐
5. Grades you learn: 9th ☐ 10th ☐ 11th ☐ 12th ☐

PART II

1 .Thinking about your school/ classroom, how much do you agree or disagree with the following statement about your school? Show your opinion by putting a tick/ ✓/ mark.

#	Classroom physical descriptions of your school	Strongly Disagree	Disagree	Agree	Strongly Agree
1	My school classroom physical environment affects my learning initiation negatively.				
2	The classroom physical environment in my school is suitable and comfortable for all students				
3	The classroom physical environment in my school make students feel welcome				
4	Size of tables and chairs used in learning are important in my classrooms				
5	I am afraid of quiz because of the blackboard				
6	Tables and chairs used in my classroom are not comfortable for writing.				
7	My teacher makes me feel welcome in his/her classroom				
8	My teacher cooperate me to change my seat when I have a problem				
9	My classroom is not suitable for participating of all students in the classroom discussion.				
10	It is difficult to read teachers writing on the blackboard because of seating arrangement in my class.				
11	Chairs are fixed and I cannot make group with class students				
12	I can't see on the black board from my seat				
13	I don't have enough space to sit and to keep my learning materials in my seating				
14	I have the opportunity to collaborate with others in my class				
15	My classroom is suitable for interacting with other students in my group & other groups in the class				

#	Classroom physical Descriptions of your school	Strongly Disagree	Somewh at Disagree	Some what Agree	Strongly Agree
16	I can hear what the teacher says at any place of the classroom				
17	I feel hot in the class as the windows are too small and appeared at high level				
18	It's often difficult to pay attention in classroom because of the next class noise				
19	In my school ,Classrooms have enough light				
20	It's often hard to pay attention in class because of the hot temperature				
21	In my classroom, more technological materials are used.				
22	Outside communities' noise is disturbing in class				
23	My classes are boring.				
24	I feel physically safe in my classes				
25	I feel physically safe outside of the classroom (restrooms, cafeteria, etc.).				

Appendix 2

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF PSYCHOLOGY

Questionnaires for respondents of teachers

Dear respondents,

The purpose of the study is to examine the influence of classroom physical environment on the learning process of students in Adama town. So this questionnaire is designed to gather information in your school in connection to the issue under investigation. I hope you will answer all of the questions including the personal descriptors at the beginning of the questionnaire. All responses are confidential and will be reported only as part of group results. Therefore, you are kindly requested to provide your genuine responses because the effectiveness of the research depends on your responses to each question. Be as objective as possible put a tick/√/ mark or an X marks to each item in the table for each question.

For all your cooperation, thank you in Advance

PART ONE: General information

For the purposes of this research only, please fill in the following information:

6. School's name _____
7. Sex: male ☐ female ☐
8. Age: 21-25 ☐ 26-30 ☐ 31- 35 ☐ 36-40 ☐ 41-45 ☐ Above 46 ☐
9. Educational status Diploma ☐ Degree ☐ M.A/M. Sc ☐
10. How many years have you been a teacher? 1-5 years ☐ 6-10 years ☐
More than 10years ☐
11. How many years have you taught at this school? 1-5 years ☐ 6-10 years ☐
More than10year ☐
12. Position at your school: principal ☐ vice principal ☐ Teacher ☐
13. Grades you teach: 9th ☐ 10th ☐ 11th ☐ 12th ☐

PART TWO: Questions about your school

1. How much do you agree or disagree with the following statements about your school?

For each statement, please put a tick $\checkmark$ mark or an x in the appropriate column.

#	Descriptions of physical environment of your school	Strongly Disagree	Disagree	Agree	Strongly Agree
1	My school classroom physical environment affects my initiation.				
2	My school has an atmosphere of collegiality				
3	My school physical environment is safe for both students and teachers				
4	My school physical classroom environment is suitable for teaching & learning				
5	Chairs are fixed and I cannot make group for class students				
6	The number of students in my classroom matches the size of the class				
7	I have enough space to teach and to keep my teaching materials in my teaching class				
8	I have enough space to seat the chair and check class work & home work for the students.				
9	To maintain discipline the size of the classroom is a problem				
10	Outside communities' noise is disturbing in class as it situated near living houses.				
11	I feel hot in the class because of no standardized door & windows in my class.				
12	The classrooms have enough light in my school.				
13	It's often difficult to teach in classroom because of the next class noise				
14	It's often hard to teach in class because of the hot temperature				
15	Classrooms are beautiful to attract students and teacher in my school.				
16	You do not feel safe at school				
17	My school has good library and laboratory for students and teachers.				
18	Size of tables and chairs used in my classroom are important in learning process				
19	In my school, technology leads to forming positive attitude towards the lesson.				
20	Location of my school classrooms physical environment affects teaching and learning process				
21	My school is safe				
22	In my school, more technological materials are used				
23	I feel physically safe outside of the classroom (restrooms, cafeteria,				
24	My school has toilet for teachers, female students & male students independently				
25	Students at my school support most extra-curricular activities.				

Appendix 3

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF PSYCHOLOG

Questions for Administrative bodies/managements:

Dear Respondents,

The purpose of the study is to examine the influence of classroom physical environment on the learning process of students in Adama town. So this questionnaire is designed to gather information in your school in connection to the issue under investigation. I hope you will answer all of the questions including the personal descriptors at the beginning of the questionnaire. All responses are confidential and will be reported only as part of group results. Therefore, you are kindly requested to provide your genuine responses because the effectiveness of the research depends on your responses to each question. Be as objective as possible put a tick/√/ mark or an X marks to each item in the table for each question.

For all your cooperation, thank you in Advance.

PART ONE: General information

For the purposes of this research only, please fill in the following information:

1. School's name.....
2. Sex: male ☐ female ☐
3. Age: 21-25 ☐ 26-30 ☐ 31- 35 ☐ 36-40 ☐ 41-45 ☐ Above 46 ☐
4. Educational status Diploma ☐ Degree ☐ M.A/M. Sc ☐
5. Have you been a teacher? yes ☐ No ☐
6. If' yes' How many years have you been a teacher?
1-5 years ☐ 6-10 years ☐ More than 10years ☐
7. How many years have you been served as administrative bodies at this school?
1-5 years ☐ 6-10 years ☐ More than10year ☐
8. Position at your school: principal ☐ vice principal ☐ Teacher ☐
Supervisor ☐

PART TWO: Thinking about your school, how much do you agree or disagree with the following statement?

#	Descriptions of your school	Strongly Disagree	Disagree	Agree	Strongly Agree
1	In my school, Classroom sizes provide suitable physical environment for team work				
2	My School atmosphere attracts students and teachers attention				
3	In my school , more technological materials are used				
4	Chairs are fixed and I can't make suitable for stakeholders & teachers in my office.				
5	Outside communities' noise is disturbing in class				
6	Classrooms are beautiful to attract all teachers and students of the school.				
7	At my school, administrators provides good physical classroom environment for all teachers & students				
8	School physical environment should play vital role in teaching and learning process				
9	Educational experts should not be participated in providing of good physical classroom environment's of schools				
10	My School's classroom physical environment don't matter administrative bodies				
11	Location of my school affect the learning process				
12	It's often difficult to work in my office because of the next class noise				
13	My school has an atmosphere of collegiality.				
14	My school is safe.				
15	I feel physically safe outside of the classroom (restrooms, cafeteria, etc).				
16	The number of teachers in my school matches the number of students.				
17	I have enough space to work in and keep my working materials in my office				
18	In my school, Classrooms /offices need to have plenty of space to move around.				
19	In my school, Classrooms /offices need to have adequate lighting – able to read & write				
20	It's often hard to work in my office because of the hot temperature				

#	Descriptions of your school	Strongly Disagree	Some what Disagree	Some what Agree	Strongly Agree
	Size, layout and flexibility of format				
21	There is plenty of space to move around in my office/class				
22	Enough area for group work in my office /classroom				
	Lighting				
23	There is adequate lighting in my class/office				
24	There are lots of windows/sunshine in my office				
	Ventilation and thermal control				
25	There is good air flow in my class/office				
26	My class has comfortable temperature/ability to control temperature				
	Furniture				
27	My class/office has comfortable seating				
28	Movable furniture/equipments, etc are used in my office				
	Technology and facilities				
29	ICT has been used in my school & office				
30	Well maintained /accessible toilets are used in my school				

Appendix 4

Achievement score of sample students of 2006 from each sample schools

No	Name	Sex	Age	Result
1	Ababo Kebede Gutema	F		55.5
2	Abdumelik Aman Dekebo	M		43
3	Abdurhaman Deksiso Boru	M		63
4	Abdurhman Gena Beshir	M		50.2
5	Adanech Yegezu Mulugeta	F		51
6	Ahmadin Mohammed Megersa	M		57
7	Alemu Tefera Bejega	M		53
8	Amina Hussien Abdo	F		51.1
9	Amarech Demissie Damenu	F		70.4
10	Asnakech Shalo Bikila	F		62
11	Arega Belete Dinku	M		56.3
12	Asnake Derese Sisay	M		49.5
13	Aster Getachew Feye	F		53
14	Aster Shambel Lema	F		71
15	Aster Tolosa Chengere	F		61
16	Asefa Geresu Debele	M		42.9
17	Asheti Bekele Debele	M		74
18	Alemayehu Leta Geletu	M		54
19	Alemayehu Shura Belda	M		82.6
20	Alemtsehay Gemechu Tesema	F		49.5
21	Aman Temam Roba	M		70.8
22	Aye Abera Beyene	F		54
23	Awel Abdo Rabo	M		59
24	Awel Jemal Hassen	M		53
25	Birke Tolosa Godeta	F		63.2
26	Birtukan Regassa Feye	F		60.4
27	Birhanu Sefu Tafa	M		58
28	Birtukan Fekadu Kebede	F		60.2
29	Biruk Hordofa Tesema	F		55.1
30	Bogalech Yirdaw Lema	M		54.2
31	Betselot Girma Debele	F		68.3
32	Chaltu Husen Roba	F		59
33	Chaltu Legesse Gurmu	F		48
34	Chaltu Seboka Gemechu	F		53
35	Cherinet Tesfaye Debele	M		63
36	Dawit Shalo Tulu	M		67
37	Debela Megersa Tulu	M		70.9
38	Demisse Abera Game	M		65.4
39	Demoze Nemo Tulema	F		56
40	Desalegn Belete Feyisa	M		78

41	Dibaba Abera Esse	M		56
42	Dire Tuna Nade	F		52
43	Dagne Sefu Hurisa	M		62
44	Desta Mohammed Wako	F		54.7
45	Diribe Arega Debele	F		56
46	Dereje Gezehagn Bedasa	M		68
47	Daniel Sisay Biru	M		52
48	Degife Taddese Bajiga	M		47
49	Dejene Demisie Beyene	M		50
50	Eyob Abera Bino	M		87.7
51	Ebrahim Kemal Tolola	M		59
52	Efrem Tadese Demisse	M		62
53	Eliyas Esmael Tola	M		64
54	Elsabet Tafesse Demise	F		86
55	Endale Teshoma Gashiye	M		61.6
56	Ermiyas Lema Abebe	M		69.3
57	Esmael Jemal Mohammed	M		80.4
58	Elsabet Manoye Mekonnen	M		68
59	Eyasu Tafa Hailu	M		98.9
60	Fekadu Hailegebriel Abreham	M		74
61	Feyise Wariso Buta	F		51.9
62	Firehiwot Getachew G/Mariyam	F		59
63	Fetiya Ebrahim Siraj	F		55.8
64	Fadila Ashim Muhammed	F		73
65	Fatuma Haji Hamda	F		51
66	Fetene Tesfaye Gudeta	M		53
67	Fetiya Arusa Musa	F		63
68	Feyisa Husen Tahir	M		79.1
69	Feyise Adane Belachew	F		50.4
70	Firaol Shibru Beker	M		49.2
71	Firehiwot Maru Bedada	F		82.5
72	Gadise Bekele Mengistu	F		59
73	Gezal Reta Rebo	M		57
74	Getahun Teshome Hunde	M		90.7
75	Gemechu Asirat Negash	M		89.3
76	Gete Regasa Debela	F		51
77	Getu Mersha Alemayehu	M		54
78	Getu Zerihun Guda	M		57.4
79	Gezehagn Kebede Maru	M		52.8
80	Gifti Legese Kebede	F		75.2
81	Gadisa Yadete Gameda	M		76
82	Gadise Yigazu Demissew	F		47.9
83	Genet Gorfu Worku	F		56
84	Getu Anbese Regessa	M		53.5

85	Gobe Aman Tola	M		55.2
86	Gedamnesh Getahun Tekola	F		70
87	Halima Muhammed Aman	F		51.7
88	Habtamu Reta Shumi	M		67.2
89	Habtamu Teka Debele	M		57
90	Hailu Girma Dinagde	M		59.5
91	Hana Tamiru Bekele	F		51
92	Harum Abdi Adem	F		54
93	Hawa Abdo Adem	F		63
94	Hirut Teshoma Bedada	F		57.4
95	Hiwot Abera Hawas	F		52
96	Hundesha Abdi Hussien	F		59.1
97	Hamziya Haji Aliy	F		69
98	Itenesh Abera Tufa	F		78.5
99	Jafar Mohammed Ahmed	M		61.5
100	Jeylan Hulle Sheko	M		68.1
101	Jemila Kedir Burka	F		50.1
102	Kubsa Abera Hailu	M		80.3
103	Kasahun Diriba Dumecha	M		92.7
104	Kedir Amano Esago	M		74
105	Kedir Gena Herpo	M		58.5
106	Kelkidan Metaferiya Bekele	F		76.1
107	Kasahun Kebede Alemu	M		59.1
108	Kebede Belete Kasa	M		71.4
109	Kedir Kemal Gena	M		57.5
110	Kelilo Gobena Hami	M		54.6
111	Kemal Husen Haji	M		52.5
112	Legese Abera Lema	M		94
113	Leyla Muhammed Beshir	F		79.3
114	Marwa Arusa Musa	F		49.8
115	Mekiya Aman Husen	F		57.7
116	Meliya Hasen Nadi	F		52
117	Medina Awelkere	F		65
118	Mekonnen Niguse Tola	M		73.2
119	Mengiste Bikila Habebe	M		56
120	Meseret Asnake Gemechu	F		58
121	Meskerem Zarihun Tadese	F		64
122	Mihiret Birhanu Tolosa	F		61
123	Milikyas Dasasa Fekene	M		50
124	Misra kasim Sufi	F		78.3
125	Mubarek Said Boru	F		92.2
126	Mubark Haji Buntri	M		57
127	Muhammed Gedeb Bedasa	M		59
128	Mulu Abebe Degefa	F		52.9
129	Musa Abadir Tuma	M		73.6

130	Misra Aman Dalo	F	71
131	Mohammed Aman Woyeso	M	50.3
132	Momina Kemal Rabo	F	57.5
133	Nejat Haji Kurkura	F	45
134	Nefisa Abduro Aliyi	F	75.8
135	Nefisa Tuna Dekebo	F	63.7
136	Nuriya Gobe Kedir	F	59.4
137	Nigatu Sisay Lema	M	63.6
138	Osman Tuna Gobana	F	51.6
139	Roba Gezmu Nuguse	M	82.5
140	Radiet Dereje Getaneh	F	73.4
141	Radeiat Legesse Debele	F	68.2
142	Rediwan Haji Gena	M	48.6
143	Reshida Bulbule Burka	M	57.
144	Rehima kedir jilo	F	65.4
145	Sadam Ahimed Duri	M	55
146	Sadia Aman Safano	F	64.4
147	Saliley Birihi Abawabu	M	69.
148	Samira Sufi Ahimed	F	49.8
149	Samu Name Hamda	M	66
150	Shitaye Degefa Negash	F	59.5
151	Shukare Erko Hofalcha	F	71.2
152	Senayit Adugna Bekele	F	49.3
153	Senayit Adugna Bekele	F	86.5
154	Simagn Feyissa Badane	F	68
155	Siraj Awel Alyi	M	53.2
156	Sosina Admasu Fikadu	F	63.8
158	Sudi Jemal Gobe	M	54.7
159	Tadesse Bira Gelana	M	58.2
160	Tadesse Talila Heyi	M	51.5
161	Tahir Abdela Amino	M	69.6
162	Tahir Abdela Ketabo	M	57.4
163	Tamirat Abebe Bira	M	66.3
164	Tegene Abera Mengistu	M	93.4
165	Temam Abishu Kurkura	M	75.6
166	Tigist Reta Mekonnen	F	88.5
167	Turnesh Awlachew Shifera	F	53.7
168	Teddalu Kebede Wedajo	F	68.3
169	Tigist Teshome Nigusie	F	54.5
170	Tsehay Dade Tulu	F	75.4
171	Tewodros Fekeru Alemu	M	55.2
172	Tewodros Mekuriya Hailu	M	59.4
173	Tolosa Tadesse Besha	M	47.8
174	Tsehay Bogale W/Samayay	F	51.6
175	Wondimeneh Melka Lema	M	76.4

176	Wondosan Tesfaye Alemu	M		57.2
177	Wongel Mersha Degefa	M		44.6
178	Weynishet Urga Debele	F		78.8
179	Wolela Tedese Besha	F		54.7
180	Yohannes H/ Mariyam Tijo	M		68.2
181	Yasin Jemal Tiyyibi	M		88.3
182	Yasin Kela Haso	M		70.6
183	Yohanis Bekele Gashaw	M		58.6
184	Yohannes H/ Mariyam Tijo	M		94.6
185	Zegeye Birhanu Gugsa	M		77.2
186	Zewdinessh Kebede Gebre	F		57.3
187	Zubeyda Jemal Elemo	F		48.4
188	Zenebe Adere Fekene	M		97.8
189	Zenebu Gemeda Tola	F		79.6
190	Zewdinessh Fekadu Shiferaw	F		47.4

Appendix 5

ለተመራጸው

በአዳማ ሳይንስና ቴክኖሎጂ ዩኒቨርሲቲ

የድህረ ምረቃ ት/ቤት የስነልቦና ትምህርት ክፍል

ወድ ተሳታፊዎች

የጥናቱ ዓላማ በአዳማ ከተማ ወስጥ የሚገኙ ሀላፊዎች ደረጃ ክፍሎቻቸው በመሆኑ መከተሉ ከንወን ላይ የሚገኝ የድህረ ምረቃ ት/ቤት ለማጥናት ነው ስለዚህ ይህ መጠየቅ በት/ቤቶች ወስጥ ያሉትን የመሠረዳ ክፍሎች በመከተሉ ሥራው ላይ የሚገኝ የድህረ ምረቃ ት/ቤት ለመረዳትና መፍትሄ ለመፈለግ ነው በመሆኑም በመጠየቁ መጀመሪያና በወሰኑም የሚገኙትን መጠየቆች በትክክል እንደምትጥሉላቸው ባለመሉ ተስፋ ነኝ የመጠየቁ መልሶችም በእርግጠኝነት ለግር መፍትሄ ለመፈለግ በጣም አስፈላጊ ናቸው እናንተም ይንኑ በመረዳት ለወቴታሚቱ ለእያንዳንዱ መጠየቅ የምትሰጡትን መልሶች ለፅናጽና ምርምሩ ብቻ የሚያስፈልጉትን መረጃዎችም የተጠበቀ መሆኑን በማወቅ በእያንዳንዱ መጠየቅ ስር ለመረጃዎች ጥያቄዎች መልሶች ለመስጠት (✓) ወይም (X) ምልክት መጠየቅም የሚችሉ መሆኑን በመክበር እንገልጻለሁ

ስለ ትብብራችሁ በጣም አመለግናለሁ

ይህ መጠየቅ ለተመራጸው ብቻ የተዘጋጀ ነው

ክፍለ አንድ መቅላላ ሁኔታ

1. የት/ቤቱ ስም

2. የታወቀው ወንድ ሴት

3. ዕድሜ 16-20 21-25 26-30 31-35
ከ 36 ዓመት በላይ

4. በዚህ ት/ቤት ለምን ያህል ዓመት በትምህርት ላይ ቆይተዋል

ከአንድ አመት በታች ሀላጅ ዓመት ሦስት ዓመት ከሦስት ዓመት በላይ

5. አሁን በመሆኑ ላይ ያለብት ክፍል

ዘመነ ኛ አስረኛ አስራ አንደኛ አሥራ ሁለተኛ

ክፍል ሀላት

እንደ እርስቆ ት/ቤት በመከተሉት መጠይቆች ምን ያህል ይሰማሉ

ተራ ቁ.	የክንውኑ ዓይነት	በጣም አልሰማም	አልሰማም	እስማማለሁ	በጣም እስማማለሁ
1	የእኔ ት/ቤት ካባቢው ሁኔታ በመጥ ተነሳሽነቴ ላይ ተፅእኖ አሳድሮብኛል				
2	የመሄድ ክፍሎቼ አካባቢያዊ ሁኔታ ለሁሉም ተሳታፊዎች የተመቻቸ እና ተስማሚ ው				
3	የመኖሪ ክፍሎቼ አካባቢያዊ ሁኔታ ታምራዊነትን ወዳ ት/ቤት እንዲመጡ ይገፋፋል				
4	የጠረጴዳዎቼና የወንበሮች ክፍል ወስጥ ለመጥ የምንጠቀሟቸው መጠን ወሳኝነት አላቸው				
5	በጥቁር ሰሌዳው ምክንያት ቴስቶችና መከራዎችን በትክክል ለመጻፍ እቻሪ ነው				
6	በክፍሉ ወስጥ የምንጠቀሟቸው ጠረጴዳዎችና ወንበሮች ለመጻፍ ምቹ አይደሉም				
7	የት/ቤቱ መሀሪን የትምህርት አሰጣጥ ተሳታፊዎችን ወዳ ት/ቤት እንዲመጡ ይጋብዛል				
8	መሀሪ በክፍል ወስጥ አቅማመጡ የሚመቻኝ በሚሆን ጊዜ ቦታውን በመቀየር ይተባበሩኛል				
9	የእኔ የመሄድ ክፍል በክፍል ወስጥ ተሳትፎን ለማድረግ ምቹ ናቸው				
10	በክፍል ወስጥ በአቀማመጥ ምክንያት መሀሪን በጥሩ ሰሌዳው ላይ የሚፈቱትን ጽሑፍ ለማንበብና ለመጻፍ አስቸጋሪ ሁኔታን ይፈጥራል				
11	መቀመጫዎቼ እንደ ቦታ ብቻ የሚቀመጡ ስለሆኑ የቡድን ሥራ ከገደቦቹ ጋር ለመሥራት ምቹ አይደሉም				
12	ከተቀመጠኩበት ቦታ ላይ ሆኜ በጥቁር ሰሌዳው ላይ የተፃፈውን ነገር በትክክል ማየት እችላለሁ				
13	እኔ በመጥ ክፍል ወስጥ በቂ የሆነ መቀመጫ የመሄድ ቁሳቁሶችን ማስቀመጫ ቦታ አለው				
14	እኔ በመጥበት ክፍል ወስጥ ከሌሎች ተሳታፊዎች ጋር				

	ተከባብሮ ለመሥራት የሚያስችል አለው				
15	የእኔ የመሥሪያ ክፍል ከእኔ የቡድን አባላትና ከሌሎች የቡድን አካላት ጋር ለመቀራረብና ለመሥራት ምቹ ነው				
16	በክፍል ውስጥ በማንኛውም ቦታ ላይ ሆኔ መሳሰሉ የተናገረውን መስማት እችላለሁ				
17	የመሥሪያ ክፍሎቹ መስተዳድሮች በጣም ትናንሽ ስለሆኑ በክፍተኛ ቦታዎች ላይ የሚገኙ ስለሆነ የመቅት ስሜት ይፈጥርብናል				
18	አብዛኛውን ጊዜ ከመከተላቸው ክፍሎች ጋር ምክንያት ትኩረት ሰጥቶ ለመመርመር ችግር ይፈጥራል				
19	የመሥሪያ ክፍሎች በቂ የሆነ ብርሃን አላቸው				
20	አብዛኛውን ጊዜ የአየሩ ሞቃታማ በሚሆንበት ጊዜ ትኩረት ሰጥቶ ለመመርመር አስቸጋሪ ይሆናል				

