

## **Chapter Two**

### **Literature Review**

In chapter two, the researcher discusses some relevant theories to this study. It comprises the discussion about definition of classroom, classroom environment, the classification of classroom environment, the classroom physical environment, the classroom physical aspects environment, the definition of achievement, the factors affecting students' achievement, the measurement of the students' achievement, the review of related studies, conceptual framework and hypothesis of the study.

#### **Classroom Physical Environment**

**The definition of classroom.** Classroom is a meaningful place in teaching and learning activities. According to Olosunde and Akinpelu (2012) classroom is a place where teachers meet with students regularly for designated periods of time to engage in meaningful teaching and learning activities. In addition, classroom is a major component of teaching and learning process that requires the use of both human and material resources. Human resources in this respect refer to students, teacher and other human components that support the teaching and learning process. The material resources deal with learning facilitation including specific classroom environment. According to Woolfolk (2007), the classroom is a specific environment with the several students' perceptions and tasks, some students with different goal, perceptions, needs, or abilities, and students sharing the same sources, completing the tasks, and using the same materials in the

classroom. Additionally, Hattie (2012) stated that a classroom is the successful function of the teacher that will be responsive to the children interests, provide opportunities for children to make them thinking perceptible, then encourage new learning, and engagement. According to Jennings and Greenberg (2009), classroom is the place to interact powerful influence on students' development. It means that high quality classroom encourages interactions that respect each other, raises effective teaching, and creates conducive environment. Conducive environment influences the personalities and attitudes of other members of the total school population.

**Classroom environment.** In the classroom, learning development is arranged when communication between students and teachers or among the students themselves occur. In other words, classroom environment teaches about how to think and to acquire knowledge through classroom environment. Students learn better when they perceive the classroom environment more positively. Kalyani (2007) defined that educational environment as the conditions processes and psychological stimuli which affect the educational achievement of the students. The classroom environments show that physical arrangement has a main role in teaching and learning process between teacher and students.

**The classification of classroom environment.** There are some important factors in creating a good classroom environment. Some factors can be seen as the characteristics of the classroom, such as safety factors, spatial factors, color factors, thermal factors, visual factors, and acoustics factors. Those factors are considered as physical environment classification. The other factors are related to

the communication between teacher and students. The communicative interaction in teaching and learning process can be classified into psychological environment (Thamilselvi and Sekar, 2014). This study focuses on the classroom physical environment because physical environment is the overall appearance of everything inside the classroom, and it can affect students' comfort level and their ability to learn. In addition, classroom physical environment is important to students' success in teaching and learning process.

**Classroom physical environment.** The quality of classroom environment is very important and needs proper attention that consists of various aspects. The aspects in the physical classroom environment, according to Puteh et al., (2015), the physical classroom environment can affect the teaching process, learning process, the relationship between teacher and students. It is in line with Qaiser, Hasan and Ishtiaq (2014) who suggested that the physical environment refers to physical characteristic of the room. In addition, classroom physical environment is a combination of different things, for instance lighting, temperature, ventilation system, size of the room, and furniture. According to Stone (2001), the positive moods are frequently generated by environmental conditions, while negative moods were more a product of onerous lesson planning. It means that the space design may improve satisfaction levels. Fisher (2008) suggested that the physical environment's refers to the physical room in which teacher and learners are the main element including spatial elements such as furniture, walls, as well as other classroom equipment, and computer equipment. It means that the classroom physical environment is an important determinant of students' achievement. An

encouraging learning environment creates a comfortable teaching and learning environment, while keeping the students focused and interested in the classroom.

**Classroom physical environment aspects.** There are several aspects of classroom physical environments. According to Qaiser et al., (2014), the classroom environment aspects consist of thermal factors, spatial factors, acoustics factors, and visual factors.

***Thermal factor.*** First, thermal factor refers to the heating and ventilation in the classroom and are generally out of teacher's control. According to Wardle (2003), thermal factors should be neither too hot nor too cold, because overly warm environments cause children to be sleepy. It means that an ideal environment allows teachers to differentiate the room temperature in accordance with the activities of the students in each room. Furthermore, Dockrell and Shield (2004) suggested that the ventilation and heating system are found to contribute quite distinctly to the level of classroom noise. The students can get knowledge that a reasonable temperature and constant temperature can positively impact students' health and learning.

***Spatial factors.*** Second, spatial factors are related to the space management and have great impact on behavior particularly on communication. According to Woolfolk (2007), the student sit in front locations seem to increase students' participation to speak in the class, whereas the students' sit in the back will make students more difficult to participate and make them easier to daydream.

Teachers may take benefit from spatial factors. Having spacious spaces, they can move around the room when possible, establish eye contact with students and direct questions to students seated far away and vary the seating (Weistein and Mignano, 2003). According to Guardino and Fullerton (2010), working with a classroom teacher to rearrange the classroom physical environment by creating different individual versus group works spaces provides personal spaces for individual belongings and rearranging the classroom furniture to reduce destructible.

*Acoustics factors.* Third, Hamilton (2014) stated that acoustics factor is distractions factor of communication to deliver the message. Acoustics factors deals with noise. According to Ching and McPherson (2005), there are two causes of noise in the classroom, namely external and internal noise. External noise includes noises from phones ringing, cars, airplanes, trains, or any other form of surface traffic. In addition, internal noise refers to any noise that was created by the daily activities of teachers and students within the classroom. Noise is an important factor to assess in a classroom because it is related to several classroom components such as achievement, spatial, cognition, privacy and density. Additionally, Crandell and Smaldino (2000), stated that the background of noise can make students difficult to listen and learn the material, when students who is attempt to focus on the lesson presented by the teacher or peer discussion. Nelson (2000) added a noise environment may have a negative impact on the ability of listen students to remain academically.

**Visual factors.** Fourth, visual factor refers to the quality of lighting in different parts of classroom. Students can be affected by too much or too little environmental lighting so that a classroom should have appropriate lighting. According to Kaderavek and Pakulski (2002), the adequate lighting in the classroom is essential for those students who made an analysis in reading. Another implication of classroom lighting was stated by Heschong (2003) that when lighting in classroom is inappropriate, it can make eyestrain, and visual problem can develop if students have only short distance views. This basic concept informed teachers that their students need different lighting environments for different educational tasks, and allowed teachers to prepare the lighting environment that is compatible with the task. The lighting glares negatively affect the speed and quality of students' performance and resulted in fatigue and poor retention.

### **Students' Achievement**

**The definition of achievement.** Students who achieve well in academic have some advantages. According to Daulta (2008), achievement serves as a key criterion in order to judge student's true potentials and capabilities. The learning achievement can be meant the result achieved by students in learning process. In this study, the achievement refers to the students' achievement at EED UMY. The teachers have to make some evaluation to measure students' achievement namely formative and summative evaluation.

**The factors affecting students' achievement.** According to Sudjana (2004), factors that affect students' achievement consist of two factors: internal factor and external factors. Internal factor come from inner students and external factor is the factors come from outside of the student or other influences.

*Internal factors.* Internal factors refer to factors which come from inner students. The internal factors can be classified into physical factors and psychological factors. In physical factors there are two factors namely health and disability factors. Meanwhile, according to Bahri and Zain (2010), psychological factors consist of intelligence, attention, interest, behavior and motivation.

Firstly, students' intelligence become factor that influence the achievement because every student has different intelligences. It can be observed from their response in teaching and learning when their teacher taught in the classroom, how to adapt to new condition quickly, and creativity. The second factor is attention. Slameto (2010) suggested that attention is the heightened activity of mind that aims to focus to think solely to a thing. The third factor is interest. According to Sudjana (2004), interest is related to the activities that are freely chosen by individuals. Students who like to read tend to choose the activities to read by which they will be able to get knowledge and technology. It will greatly affect the students' achievement. Students' interests are fulfilled when students learn the lesson more seriously.

The fourth factor is behavior. Sudjana (2004) stated that behavior is one of the purposes in planned learning to change students' behavior. So, the meaning of

behavior is a person in the growth phase in which the means of his body was ready to implement new skills. Therefore, students' behaviours most likely influence their achievement. The next factor is motivation. According to Sudjana (2004), motivation is closely linked with objectives to be achieved in the study. In determining that goal can be realized or not, student must have motivation inside them. In other words, motivation is the process whereby continuous activity to reach achievement.

According to Bahri and Zain (2010), the students' achievement also depends on students and teachers factors. Students' factors include motivation, attention toward subject, ability to apply what has been learned. Meanwhile, the teachers' factors are the abilities to establish students and teacher communication encourage students' interest and motivation, transfer material, and response to the students' ability.

*External factors.* The factors come from other influence who affect students to receive the material especially in the classroom physical environment. Some people may think that classroo physical environment is not very important in managing the classroom. However, Weinstein (1996) suggested that managing the classroom is essential to recognize that the classroom physical environment can influence the way teachers, students feel and think. It was line with Saricoban and Sakizli (2006) stated that classroom physical environment can enhance students behavior. It means that external factors related to classroom physical environment aspects such as thermal factor, spatial factors, visual factors, and acoustics factors in the classroom.



**The measurement of the students' achievement.** Students' achievement is related with the result of the assessment at the end of a term. For instance, a progress test at the end of a unit reflects the students' progress. Dimiyati (2002) suggested that students would be more motivated in learning if the students know the result of their study. The result of their study can be achieved through formative or summative evaluation, both of which are important to the instructional process and lead to improve outcomes (Salvia, Ysseldyke, Bolt, 2007).

According to Marsh (2008), formative evaluation provides data in regard to instructional units in progress and students in action. Clarke (2001) suggested that conducting formative evaluation bring about students' growth. Teachers can use formative evaluation to improve instructional methods. Richard (2006) stated that formative evaluation can be used to address problems that have been identified and can be used to improve the delivery of the program in teaching and learning process.

Second test is the summative evaluation. Summative evaluation can be used to produce students' achievement. Marzano (2006) suggested that summative evaluation is occurring at the end of learning period. It means that summative evaluation is a process of learning that review students outcome at the end of unit instruction. It is in line with Cohen, Manion, and Marrison (2004) who suggested that summative evaluation comes at the end of a program and assesses. It is indicated that usually summative evaluation is also used to measure the students' achievements, review of what has taken place during the course, and what has

been learned. According to Harmer (2007), the summative evaluation is the kind of measurement that takes place to make a one off measurement. It means that summative evaluation is almost similar to the test given by the teacher for the students. It occurs in one place and limits by the time and it has a purpose to know students achievement in unit of the lesson.

### **The Review of Related Studies**

The research will describe some works which are relevant to these thesis to make thesis arrangement easier are as follows:

The previous research that was conducted by Marzita Puteh, Che Nidzam Che Ahmad, Noraini Mohamed Noh, Mazlini Adnan, and Mohd Hairy Ibrahim that was published in Journal of International Journal of Social Science and Humanity Vol.5, No.3, 2015. The title journal is *The Classroom Physical Environment and Its Relation to Teaching and Learning Comfort Level*. The research discussed the relationship between the physical aspects of the classroom and the teaching and learning comfort level. The researchers conducted the research through quantitative research which uses survey as the research design. The data employs two instruments are Physical Classroom Environment Inventory (PCEI) and Teaching and Learning Comfort Level Scale (TLCLS). In this research, it was found out that there was significant relationship between the physical aspects of the classroom environment and teaching and learning comfort level and significant influence the physical aspects like furniture, space, and air

quality. These aspects contribute to the comfort level of teaching and learning in the classroom.

The second research was carried out by Merike Darmody and Emer Smyth that was published in *Journal of Children, Youth and Environments* Vol.22 (1), 2012. The title is *Exploring School and Classroom Environments in Irish Primary Schools*. They selected some schools to compare the age of the building, the size of the building, layout and location. The methodology of research was qualitative research with a case study as the research design. They focused on various aspects of school design and environmental factors like noise, space, light, air quality, use of color in the classroom, and the students' perceptions on what aspects of building students liked most. They had chosen 50 pupils and 20 staff members in the school as participants for the interview taken using random sampling. The results indicated that temperature, noise, lighting, and class size are important factors that influence students' comfort in the classroom.

The third research was accomplished by Cynthia S. Johnson and Gysbert A. Ruiters. *Journal of Academic Research International* Vol.4 No.4 July 2013. The title is *(Re) - Envisioning Classroom Design with Light and Colour*. The purpose of the study was to know the relationship between classroom environment and students' achievement. The methodology of research was quantitative analysis using action research as the research design. This research chose participants using random sampling taking 10 students from a small northern British Columbia High School.

This research uses a journaling rubric, a checklist, and likert-scale students to produce correlations of students' behaviors', teacher observations, and achievement scores. The result indicates that lighting and colorations in the classroom can affect students' achievement in writing ability.

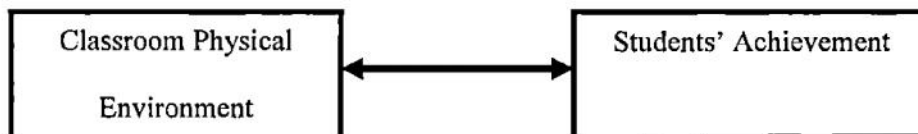
### **Conceptual Framework**

Based on the literature review, a classroom is where the majorities of learning activities occur, and comprises one part of the schools' physical environment. Classroom is a meaningful place between teacher and students frequently to engage in meaningful teaching and learning activities. In other words, a classroom environment teaches about how to think and to acquire knowledge through classroom environment. Classroom environment consists of two types, namely physical and psychological. The researcher focuses on the physical environment including visual factors, acoustics factors, thermal factors and spatial factors. Visual factors refer to lighting in the classroom that gives dazzling if lighting too much in the classroom. Acoustic factor relates to the noise level including external and internal noise. Thermal factor correlates with ventilation or window. It is fundamental role in making classroom atmosphere favorable and comfortable. In addition, the spatial factors refer to seating arrangement in the classroom that can make students and teacher move around easily. The classroom physical environment can affect students comfort and the ability of the teacher to move around the classroom. In addition, making contact with students is increasing students' engagement in classroom activity.

Achievement is the result that students get after following a teaching and learning process in certain period of time. There are many factors that affect the students' achievement in the classroom, such as concerned with factors that come from students and from the teachers. Students' factors include motivation, attention toward subject, ability to apply what has been learned. Meanwhile, the teacher' factors are the abilities to establish students and teacher communication, encourage students' interest and motivation, transfer material, and response to the students' ability.

In this respect, classroom physical environments including visual, spatial, acoustics and thermal factors can have relation to the students' comfort, motivation and interest in the teaching and learning process. Since students' achievement are influenced by many factor including students' comfort, motivation, and interest. The researcher assumes that there is a relation between classroom physical environment and students' achievement. The relation can be drawn as follows:

Figure 2.1 Conceptual Framework



## Hypothesis

Based on the statement of the problem above, therefore, the researcher proposes the hypothesis of this study which is formulated as follows:

Alternative Hypothesis ( $H_1$ ) = There is a significant correlation between classroom physical environment and students' achievement at EED UMY.

Null Hypothesis ( $H_0$ ) = There is no significant correlation between classroom physical environment and students' achievement at EED UMY.