

A STUDY OF THE INFLUENCE OF CLASSROOM ENVIRONMENT ON THE ACADEMIC ACHIEVEMENT OF HIGH SCHOOL STUDENTS

Htay Lwin¹ and Sann Cho²

Abstract

The main purpose of this study is to investigate the influence of classroom environment on the academic achievement of high schools students. Questionnaire survey method was used and six sample schools were selected by a simple random sampling method. A total of (360) Grade Nine students (140 male students and 220 female students) from three high schools and three high school (branch) from Taze Township participated in this study. In order to get the required data, the questionnaire having 40 items with five points Likert scale was used. The questionnaire was based on five dimensions: school climate, communication, teachers' performance, classroom management and opportunity for learning. The reliability coefficient of the questionnaire was 0.879. Descriptive statistics, independent samples *t* test, one-way ANOVA and Pearson product moment correlation were applied to analyze each research question. The results showed that female students more positively perceived their classroom environment than male students. The results of the ANOVA showed that there was no significant difference in the students' perceptions among the six schools. Pearson correlation revealed that the classroom environment was significantly related to the students' academic achievement. Therefore, students' academic achievement can be predicted by examining their classroom environment.

Keywords: classroom environment, achievement, academic achievement

Introduction

Importance of the Research

Education is an essential factor for effective development of any country and plays a vital role in the development of human resources. The quality of education is a central theme in education systems and is linked with an individual's well-being and opportunities for better living. The quality of education not only depends on the teachers as reflected in the performance of their duties, but also in the effective coordination of the school environment.

In any school setting, whether it is elementary, secondary, or higher education, classroom environment is specially regarded as one of the most critical determinants of students learning outcomes. Classroom Environment is included in school climate or educational climate, part of the larger focus on school environment. Classroom environment identifies relationships among students with each other, the teacher and how this translates into learning. So, it is important to determine classroom environment and then to use the results as part of the comprehensive plan for school environment.

Classroom and social environment factors were found to be particularly important influences on student outcomes, even when a number of other factors were controlled. Classroom practices and developments have indicated that a positive classroom climate is needed for effective learning. International relationships, student-teacher relationship, peer relationships, teachers' beliefs and behaviors, teachers' communication style, classroom management and group processes are themes that can be considered to be included in the concept of the social climate of learning environments. That is why this study investigates classroom environment

¹Lecturer, Department of Methodology, Sagaing University of Education

²Senior Teacher, No. (1) B.E.H.S, Homalin, Sagaing Region

considering school climate, student-teacher relationship, peer relationships, teachers' performance and communicate style in class, classroom management and opportunity for learning.

Classroom Environment can influence students' academic outcomes. Creating a positive classroom environment is an important aspect of effective teaching. By creating positive classroom environment, teachers are provided the opportunity for better classroom discipline and management. A positive classroom environment is essential in keeping behavior problems to a minimum. It also provides the students with an opportunity to think and behave in a positive manner. Positive classroom environment helps to enhance, promote and encourage students' learning in all academic settings.

In Myanmar, male and female students are significantly different in academic performance especially for early adolescents. Similarly, there is also a great variation of students' performance among schools or learning environments. So, this study will examine the differences to improve the classroom environments and leaning outcomes of Myanmar Education. It is hoped that this study will provide information for parents, educators and school administrators to reflect upon various factors that help students in achieving their academic goals.

Purpose

The main purpose of the research is to investigate the influence of classroom environment on the academic achievement of high school students.

Objectives

The specific objectives of the research are as follows:

1. To identify the difference in students' perceptions on their classroom environment by gender.
2. To identify the difference in students' perceptions on their classroom environment in terms of school.
3. To explore the relationship between the classroom environment and the academic achievement of students.
4. To give suggestions and recommendations based on the results of the study.

Research Questions

1. Is there any difference in the students' perceptions on their classroom environment in terms of gender?
2. Is there any difference in the students' perceptions on their classroom environment in terms of school?
3. Is there any relationship between the classroom environment and the high school students' academic achievement?

Definition of Key Terms

Classroom Environment - Classroom environment encompasses a broad range of educational concepts, including the physical setting, the psychological environment created through social contexts, and numerous instructional components related to teacher characteristics and behaviors (Miler & Cunningham, n.d.).

Achievement - Achievement is defined as a product which can be measured by means of achievement tests (Annie & Stoker, 1996).

Academic Achievement - Academic achievement is the extent to which students, teachers or institutions have achieved their short or long-term educational goals (Annie& Stoker, 1996).

Scope of the Study

The researcher selected three hundred and sixty Grade Nine students from six high schools by using a systematic sampling method. To investigate the influence of the classroom environment on the academic achievement of high school students, this study was organized with five dimensions such as school climate, communication, teachers' performance, classroom management, and opportunity for learning.

Review of Related Literature

Classroom Environment

Classroom environment encompasses a broad range of educational concepts, including the physical setting, the psychological environment created through social contexts, and numerous instructional components related to teacher characteristics and behaviors. The study of classroom environment has been widespread across nearly all sub-specializations of educational psychology. Researchers are interested in relationships between environment constructs and multiple outcomes, including learning, engagement, motivation, social relationships, and group dynamics. Early researchers recognized that behavior is a function of people's personal characteristics and their environment (Miler & Cunningham, n.d.).

The classroom is an environment in which educational goals such as concern for community and concern for others must be promoted and modeled if they are to be acquired. This learning environment contains learners with their own personal histories, values, assumptions, beliefs, rights, duties, obligations and learning styles, for whom the learning task is a mean of perceiving and using linguistic affordances as appropriate, fostered by a climate of cooperative social interaction which produces new, elaborate, advanced psychological processes that are unavailable to the organism working in isolation (Vygotsky, 1986, cited in Finch, 2001).

Classroom environment within the school is a major influence in the development of students' self-concept. Landis (1972, cited in Persad, 1980) suggested that the classroom environment is an important aspect of the student's frame of reference. Landis found that students who achieve well in school exhibit higher self-concepts than do those who achieve poorly. Combs (1962, cited in Persad, 1980) indicated that the child learns about himself not only through his own success and failure, but also from the reactions of people toward him. He suggested that classroom environments should be more flexible, thus providing opportunity for students to explore and expand on their learning preferences.

Classroom has great impact on academic achievement. Teacher's attitude and behaviors are vitally important, and genuine involvement of student in class activities, flexibility of rules by teachers, communication, competition, staff morale also play a crucial role. The use of new techniques, planning various activities and assignments, encouraging creative thinking in student, affiliation between classmates and teacher are various factors which influence academic achievement of students (Ranka, 2016).

The classroom learning environment has a strong influence on students' outcomes and plays an important role in improving the efficiency of learning in all levels of classrooms (Arisoy, 2007). Classroom environment has two aspects: one is the physical environment (the material setting of the classroom such as furniture, lighting, spaces, desks, chairs) that affects the safety, the comfort of students, and learning and personal development of students. The other is the psychological environment referring to the social quality of the school and classroom. It is concerned about the perceptions and feelings about social relation among students and teachers (Arisoy, 2007).

To conclude, the classroom environment is a reflection of students' opinions concerning their academic performance. This includes students' perceptions of the rigor of the class, their interactions with their instructor and class peers, and their involvement in the class. Although each student will develop his or her individual sense of the classroom environment, there is also a common sense among the students and the instructor. Classroom learning environment has a strong influence on students, outcomes and plays an important role in improving the efficacy of learning in all levels of classrooms.

Concept of Academic Achievement

Educational institutions are mandated to use education as a tool for social transformation. The success of a school is measured by the quality of students it produces. The success of any institution is measured by the performance of its students in both academic and non-academic tests. Academic achievement is the educational goal that is achieved by a student, teacher or institution achieves over a certain period. The academic achievement of students heavily depends upon the parental involvement in their academic activities to attain the higher level of quality in academic success (Lemessa, 2015).

Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important. According to Annie, Howard, Stoker and Mildred (1996, cited in Oldeh, et al., 2015) academic achievement is the outcome federal the extent to which a student, teacher or institution has achieved their educational goals.

Bossaert, Doumen, Buyse and Verschueren (2011, cited in Oldeh, et al., 2015) defines academic achievement as student's success in meeting short or long term goals in education in the big picture. According to the authors, academic achievement means completing high school or earning a college degree. Lassiter (1995, cited in Oldeh, et al., 2015) looks at students' academic achievement as referring to a students' strong performance in a given academic area. A student who earns good grades or awards in science has achieved in the academic field of science. In classrooms, students perform their potentials efficiently, as a result of it, learning takes place and the learning outcome changes the behavior pattern of the student through different subjects.

To summarize, academic achievement is often used as an indicator of school quality because it is easily measurable using standardized tests. In this study, academic achievement was defined according to how well a student accomplishes work in all subjects. It was assessed by the students' total scores of all subjects in October Examination.

Factors Influencing Students' Academic Achievement in the Classroom Environment

Classroom Environment is very important for students so as to learn happily and freely in it and to improve their academic achievement. There are many essential factors that can influence students' academic achievement in the Classroom Environment. Some of them are;

School Climate

School climate is determined by the prevailing attitudes of teachers and administrators. School climate suggests level of teacher and administrator expectations of learners. It defines pattern of interaction among learners, teachers and administrators. When teachers, learners and principals all believe that academic achievement is possible, the school climate is conducive to learning, and achievement tends to be higher than otherwise would be predicted (Good and Brophy, 1986, cited in Armstrong, Henson & Savage, 1989).

School climate can be a positive influence on the health of the learning environment or a significant barrier to learning. The school environment can affect many areas and people within schools. A positive school climate has been associated with fewer behavioral and emotional problems for students.

Communication

Communication is an important form of interpersonal interaction and its forms can really help teachers improve their teaching style, strengthening the bond between them and their students (Babonea&Munteanu, 2012). Communication has helped to build relationships, and the extent to which students have liked and respected one another has been shown to impact the level of academic performance. Students who have been accepted by their peers and liked them in return, have felt better about being in the classroom. The effectiveness of the teaching and learning in the classroom environment is determined by the quality of the communication process.

Teachers' Performance

Teacher performance is the most crucial input in the field of education. Whatever policies may be laid down, in the ultimate analysis these have to be interpreted and implemented by the teachers, as much as through their personal examples as through teaching-learning process. Performance refers to an act of accomplishing or executing a given task (Owei, 1999, cited in Adejumobi, 2013).

The term teaching performance is referring to the conduct of instruction: posing questions, providing explanations, giving directions, showing approval, engaging in the myriad instructional acts that a teacher performs in the classroom. Performance could be described: an act of accomplishing or excuting a given task, the ability to combine skillfully the right behavior towards the achievement of organizational goals and objectives, the ability to combine relevant inputs for the enhancement of teaching and learning process (Adeyemi, 2010).

Classroom Management

One major aspect of the classroom climate that has fallen under the control of the teacher is that of classroom management and discipline. Classroom management refers to actions taken to create and maintain a learning environment conducive to successful instruction. According to Dugguh (2007, cited in Kedir, 2015), classroom management is the action a teacher takes to

create an environment that supports and facilitates instructions, academic, social and emotional learning.

Classroom management is a critical part of effective and successful instruction. Effective classroom management, which initiates with well-organized and efficient lesson planning preparation, helps a teacher to teach and students to learn. Classroom management includes these activities which impact academic achievement: management of curriculum planning, management of student behavior and procedure. Classroom management enhances students' questioning and exploration only if the learning environment is conducive. Effective learning depends completely on a well-managed classroom. If a classroom is not well-managed, it may have disordered and disruptive, and carelessness and poor learning may result. It is obvious that classroom management is important in student academic achievement (Kedir, 2015). Classroom management is the heart of teaching and learning in school setting. A well-managed classroom can provide an exciting and dynamic experience for everyone involved.

Opportunity for Learning

The achievement of students depends on the teachers' effort and preparation or creation of learning environments. There are so many factors that make a positive learning environment. In creating learning environment, teachers should considered the following factors:

- Teachers should have the feeling of connectedness
- Address learners' needs
- Keep it possible
- Provide feedback
- Celebrate success
- Safety
- Employ interactive games and activities.

There are ten characteristics of a highly effective learning environment.

- Encourage students to ask questions.
- Pay more emphasis on questions, not the answers.
- Be open to ideas.
- Mix up teachers' learning techniques.
- Teacher teaching reaches beyond the classroom walls.
- Personalize teachers' learning.
- Do away with a clinically based assessment plan.
- Ensure that students understand the criteria for success.
- Relearn learning habits.

Developing Positive Classroom Environments

Creating a positive classroom environment is an important aspect of effective teaching. By creating positive classroom environments, teachers are provided the opportunity for better classroom discipline and management. A positive classroom environment is essential in keeping behavior problems to a minimum. It also provides the students with an opportunity to think and behave in a positive manner. Positive classroom environments help to enhance, promote, and

encourage students' learning in all academic settings. The classroom environment can be defined in terms of the students' and teachers' shared perceptions in that environment (Fraser & Pickett, 2010).

There are a number of ways in which teachers can create positive classroom environments. Some suggestions for creating a positive classroom environment includes: starting the year with high expectations, encouraging student involvement, making the classroom visually appealing, getting parents involved, and using effective praise and effective feedback.

A positive classroom environment is an important tool for establishing a successful and effective school year. There are numerous factors that may have an influence on positive classroom environments. However, it is critical that teachers create a positive classroom environment to encourage the students' growth. A positive classroom environment enhances the students' ability to learn and to be productive in and out of the classroom.

Research Method

Participants

Six Basic Education High Schools in Taze Township were selected by using a random sampling method. Grade Nine students in these selected schools were considered as the sample of the study. A sample of (360) high school students from these schools were selected by using a systematic sampling method.

Instrument

As an instrument, a questionnaire to explore the influence of classroom environment on the academic achievement of high school students was constructed on the basis of the questionnaires of Mcghee, Lowell & Lemire (2007). The questionnaire included five-point Likert-scale items for five dimensions as follows:

1. School Climate
2. Communication
3. Teachers' Performance
4. Classroom Management
5. Opportunity for Learning

Procedure

First of all, the researcher explored the relevant literature concerning with the research. Secondly, in order to get the required data, the researcher constructed an instrument. For the validation of the instruments, the questionnaire was distributed to three experience teachers in Sagaing University of Education. The instruments were modified before the preliminary survey. The preliminary survey was conducted on 18th November, 2017 with forty Grade Nine students at No.(2), BEHS, Shwebo. For the internal consistency reliability, Cronbach's alpha coefficient was used. The reliability coefficient of the questionnaire was 0.879.

And then, the major survey (main study) was conducted on 27th November, 2017. Finally, the data obtained from the survey were analyzed. The academic achievement scores of Grade Nine students from October first semester examination were used as the criterion measure of students' academic achievement in the present study.

Analysis of the Data

The data were analyzed by using a descriptive statistics (mean, percentage and standard deviation), independent samples *t*-test and one-way ANOVA. The independent samples *t*-test was applied to compare the differences in Grade Nine students' perceptions on classroom environment by gender. One-way ANOVA was applied to compare the differences in students' perceptions on their classroom environment by each school. Moreover, Pearson product moment correlation was used to determine the interrelationship between Grade Nine students' perceptions on classroom environment and their academic achievement.

Research Findings

Descriptive Statistics for Students' Perceptions on Classroom Environment

In order to examine the Classroom Environment, students' perceptions on classroom environment were surveyed with the use of the Classroom Learning Environment (CLE) Questionnaire is based on questionnaires of Mcghee, Lowell & Lemire (2007).

Table 1 Means and Standard Deviations of Students' Perceptions on Classroom Environment

<i>Components</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>
School Climate (SC)	360	22	40	34.75	3.459
Communication (C)	360	18	40	33.76	4.390
Teachers' Performance (TP)	360	18	38	29.81	3.721
Classroom Management (CM)	360	18	39	30.11	4.062
Opportunity for Learning (OL)	360	8	40	29.38	5.205
Total	360	20	39	31.65	2.931

It can be found that Grade Nine students' perceptions on their classroom environment were satisfactory. In studying the means related to school climate, communication, teachers' performance, classroom management, and opportunity for learning, it was found that the students positively perceived school climate because it has the highest mean of 34.75 and students' perception was the least in opportunity for learning because it has the lowest mean of 29.38. Then, learning opportunities and activities for students should be promoted in schools, while physical environment for students was favorable to some extent.

Comparison of Students' Perceptions on Classroom Environment by Gender

In order to explore the gender differences in students' perceptions on classroom environment, the independent samples *t*-test was used. The results were shown in Table 2.

Table 2 The Results of t-test for Students' Perceptions on Classroom Environment by Gender

Components	Gender	N	M	SD	t	df	Sig.(2-tailed)
SC	Male	140	33.91	3.887	-1.375	358	.000***
	Female	220	35.28	3.048			
C	Male	140	32.68	4.668	-1.771	358	.000***
	Female	220	34.45	4.006			
TP	Male	140	29.44	3.392	-5.98	358	.137
	Female	220	30.34	3.570			
CM	Male	140	28.26	4.187	-2.031	358	.000***
	Female	220	30.90	3.783			
OL	Male	140	28.26	5.605	-2.568	358	.000***
	Female	220	30.83	4.679			
Overall	Male	140	30.63	3.058	-5.474	358	.000***
	Female	220	32.30	2.634			

Note: *** $p < .001$

As shown in Table 2, there were significant gender differences in all the components of classroom environment, except for the component of teachers' performance. It can be found that female students were more highly perceived their classroom environment than the male students. But, the mean of male students did not differ significantly from that of female students on teachers' performance in classroom environment. So, there was no significant gender difference in the students' perceptions on teachers' performance.

However, in general, it was statistically significant in the students' perceptions on classroom environment, based on means, that female students had higher perception than male students. Analysis of the group statistics indicated that the average perception mean on classroom environment for female students (32.30) was higher than the mean of male students (30.63). This finding can be interpreted that girls perceived on their classroom learning environments more positively than boys did.

In comparing the means of male and female perceptions on classroom environment and their academic achievement, it was found that these two variables are related. In other words, the academic achievement scores of female students became high when their perceptions on the classroom environment were favorable. On the other hand, the males' achievement scores became low when their perceptions on the classroom environment were unsatisfied (see Table 3).

Table 3 Mean Comparison of Students' Perceptions on Classroom Environment and their Academic Achievement

Student	Perceptions on Classroom Environment	Academic Achievement
Male	30.63	186.85
Female	32.30	195.12

In order to determine whether there was any significance in Grade Nine students' perceptions on their classroom environment in terms of school, sample analysis of variance (ANOVA) was used to analyze the data.

Table 4 ANOVA Results of Students' Perceptions on Classroom Environment in terms of School

Component		Sum of Squares	df	Mean Square	F	Sig.
SC	Between Groups	63.158	5	12.632	1.056	.384
	Within Groups	4232.840	354	11.957		
	Total	4295.997	359	44.877		
C	Between Groups	224.387	5	44.877	2.374	.039*
	Within Groups	6693.069	354	18.907		
	Total	6917.456	359			
TP	Between Groups	35.277	5	7.145	.513	.767
	Within Groups	4934.048	354	13.983		
	Total	4969.775	359			
CM	Between Groups	83.404	5	16.681	1.011	.411
	Within Groups	5840.585	354	16.499		
	Total	5923.989	359			
OL	Between Groups	239.810	5	47.962	1.790	.114
	Within Groups	9486.190	354	26.797		
	Total	9726.000	359			
Total	Between Groups	1006.817	5	201.363	.937	.457
	Within Groups	76093.672	354	214.954		
	Total	77100.489	359			

Note: * $p < .05$

The result of Table 4 indicated that students' perceptions on classroom environment did not differ significantly, except for the component of communication. It meant that communication behaviors are different among the schools. Generally, it can be interpreted that the classroom environments of the six schools differed a little but had no significance.

Relationship between Classroom Environment and Students' Academic Achievement

After examining students' perceptions on the classroom environment, it was continued to investigate the relationship between classroom environment and the academic achievement of Grade Nine students. Pearson product moment correlation was also calculated to know this relationship.

Table 6 Relationship between Classroom Environment and Students' Academic Achievement

Variable	Classroom Environment	Academic Achievement
Classroom Environment	1	.191**
Academic Achievement	.191**	1

** Correlation is significant at the .01 level (2-tailed).

The result showed that the students' perceptions on classroom environment were significantly related to their academic achievement at the 0.01 level. The strength of correlation coefficient was low ($r=.191$). However, there was a positive relationship between students' perceptions on their classroom environment and their academic achievement. This meant that if students' perceptions on their classroom environment are favorable, their academic achievement will be high. In other words, the two variables were positively correlated. Therefore, it can be concluded that the good and favorable classroom environments are likely to have higher students' academic achievement.

Conclusion

Discussion

The main purpose of the present study was to investigate the relationship between the classroom environment and the students' academic achievement within a theoretical framework of classroom environment. The academic achievement scores of Grade Nine students from October first semester examination were used as the criterion measure of students' academic achievement in the present study. This study explored to examine the male and female students' perceptions on their classroom environment. Moreover, this study focused on the comparison of students' perceptions on their classroom environment in terms of school.

According to the results of descriptive statistics, it was found that the students' perceptions on their classroom environment were satisfactory. By comparing the means related to each component of classroom environment, the students' perceptions related to school climate was the highest because it had the highest mean among the five components of classroom environment. However, students' perceptions related to the opportunity for learning was the lowest because it had the lowest mean among the five components. It pointed out that the physical environment of the selected schools was favorable and satisfactory for students.

Secondly, independent samples *t*-test was used to examine the gender differences in students' perceptions on their classroom environment. According to the results of *t*-test, there was a significant difference in male and female students' perceptions on overall components of classroom environment. However, there was no significant difference in male and female students' perceptions on the component of teachers' performance. It can be interpreted that teachers performed their actions fairly for both male and female students. So, it can be generally seen that female students more positively perceived their classroom environment than male students did. This finding was in consistent with the results of Goh& Fraser (1996) which indicated that girls perceived their classroom learning environments more positively than boys did. Girls were more involved, more affiliated and more cooperative with classmates than boys were. Therefore, gender is a key predictor of learning environment.

Finally, it was found that the Grade Nine students' perceptions on their classroom environment did not differ significantly among the six schools. And then, it was continued to investigate the relationship between the classroom environment and the students' academic achievement. Therefore, Pearson product moment correlation was used to analyze this relationship. Consequently, it was found that students' perceptions on their classroom environment had the significant relationship with their academic achievement. It can be concluded that the more favorable school climate, communication, effective teachers' performance, systematic classroom management and much opportunity students receive, the higher academic achievement they tend to get. This finding was in agreement with the results of Fraser & Fisher (1982) which indicated that students' perceptions on the learning environment appears to correlate to student outcomes and also the classroom environment had the predictive ability for students' cognitive and affective learning outcomes.

Suggestions

According to the results of the present study, female students more positively perceived their classroom environment than male students did. It is because girls are more likely to participate whereas boys tend to respond more often if they feel the class is interesting and less often if the class is perceived as boring. So, the teachers should utilize different techniques for male students to enhance their perceptions of feeling as a class participant. Therefore, the classroom teachers should place importance on the entire school performance to demonstrate school success in terms of annual academic progress of students. Parents should involve in the progress of classroom environment and should work in contact with the school authorities for the welfare of the students. Furthermore, teachers should determine which environments are most suitable for positive impact on students' achievement because higher academic achievement is influenced by positive and favorable classroom environments. Based on the results of the study, the following suggestions were made:

- Parents should involve actively in school activities not only for the better development of classroom environment but also for the improvement their children's achievement.
- As there are still many other variables affecting on classroom environment, the developmental history of each member of the group, age, personality variables, affective variables, socio-economic status, parents' educational status of the children should be taken into account in further studies.
- Further research is needed to determine whether there is a similarity or a difference between the actual classroom environments and that preferred by the students in preschool, primary and middle schools, college and university students in various areas.

Conclusion

The classroom has become an important place for educational research because most learning takes places there. The importance of classroom learning environment has been increasingly recognized all over the world. Classroom learning environment is a place where learners and teachers interact each other and use a variety of tools and information resources in the pursuit of learning activities. According to the results of findings, classroom environment is closely related to students' academic achievement and it had a positive influence on their achievement. Therefore, it is needed to create good and favorable classroom environments for students so as to improve their learning outcomes.

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