The Relationships of Students' Perceptions of Classroom Environment, Self-efficacy, and Depression

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Abstract

The purpose of this study was to scrutinize the relationships of classroom environmental components with students' academic efficacy beliefs and depression, as well as investigating the effects of classroom environment and self-efficacy on depression level of students. The effects of classroom environment on self-efficacy were also examined. Data using questionnaires were collected from 364 (49 female and 315 male) students. Correlation analysis showed that of the seven classroom learning environment components six related significantly with depression, and the components were correlated with self-efficacy. As expected, self-efficacy and depression related significantly but negatively. Multiple regression results indicated that classroom learning environment components and self-efficacy accounted for about 26% in the variance of students' depression. The variables that significantly predicted depression were Self-Efficacy (β = -0.302), Student Cohesiveness (β = -0.256), Personalization (β = 0.235), Involvement (β = -0.124), and Satisfaction (β = -0.152). But only 9% in the variance of self-efficacy was explained by classroom learning environment components. The results suggested that the "personality" of classroom environment has a paramount significance in affecting students' psycho-social and educational outcomes.

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INTRODUCTION

Psychologists and other behavioural scientists argued that human behaviour is an outcome of the interaction of environment and the individual. For instance, Hurlock (1985) said that heredity determines what we can do and environment determines what we actually perform or do, which signifies the combined effects heredity and environment have on individuals' development. The famous researcher in the area of classroom environment, Fraser (1994: 493), stated that, "Educational environments can be considered as the social and psychological contexts or determinants of learning." This implies the paramount influence environment has on students' social, psychological, and cognitive development. During their schooling and college life, students interact with each other, the physical world, the surrounding community, and mainly with their teachers. Such interactions either facilitate or encumber different developmental aspects of the students.

Of the major social milieus in higher learning institutions or schools, the classroom is a setting where the majority of student-student and teacher-student interactions take place. Many researchers indicated that classrooms have considerable and diverse effects on cognitive and affective aspects of learners (e.g., Borich, 1988; Fraser and Walberg, 1991; Fraser, 1998a). It may not be surprising that learning environments have an effect on students' development as they spend a great deal of their waking time in the classroom environment (Fraser, 1998a). Evidence from research conducted over the past 30 years revealed that the quality of the classroom environment in schools is a significant determinant of student

learning (Fraser, 1994; 1998a). Classroom learning environments do not only affect the day-to-day activities of students but also colour their perceptions, which in turn according to Fraser (1994;1998a) impinge upon their cognitive and affective outcomes.

Fraser (1998a) indicated that classroom learning environment represents a space or a place where learners and teachers interact with each other and use a variety of tools and information resources in their pursuit of learning activities. Furthermore, Moos (1980) studied the psycho-social environment of classrooms where he postulated that the classroom climate consists of the teacher's behaviour, interactions between the teacher and the students, as well as interactions among the students. The nature and arrangement of the classroom environment make a difference on how the students learn and achieve their goals.

As cited by Baek and Choi (2002), Moos (1979) argued that environments have their own 'personality'. Moos discussed, "social environments, like persons, can have qualities such as warmth and supportiveness or rigidity and restriction" (Baek and Choi, 2002: 126). Such personality of environments would undoubtedly have either negative or positive effects on human behaviour. According to Moos, the social environment (such as school, family, and person) consisted of three dimensions: relationship, personal growth or goal orientation, and system maintenance and change.

He stated:

> *The relationship dimension assessed the degree of involvement, of mutual support, and of free and open expression within the setting. This dimension included factors such as involvement, affiliation, teacher support, peer cohesion, and conflict resolution. The personal growth, or goal orientation, dimension reflected the areas in which personal development and self-enhancement tended to occur. The nature of the dimension varied among setting according to its underlying purposes. Factors such as task orientation, competition, achievement, and interdependence were included in this dimension. The system maintenance and change dimension measured whether or not the setting was clear in its expectations, how to maintain its rules, and how to respond to its changes. This dimension included factors such as organization, rule setting, rule clarity, and teacher control (Baek and Choi, 2002: 126).*

From this argument, it is clearly understandable that the classroom context determines the psycho-social make ups of the students and their achievement. Moreover, the research outputs of Baek and Choi (2002) demonstrated that the classroom environment had a significant correlation with students' academic achievement. They also reported that the classroom environment (with 9 subscales) accounted for 27% in the variance of academic performances.

A summary of several research results has also supported such contentions. It has been indicated that students' perceptions of classroom environment is a critical factor in determining certain aspects of student outcomes such as motivation, achievement and student satisfaction (Haertel, Walberg and Haertel, 1981). The findings of Haertel, Walberg, and Haertel supported a strong relationship between student cognitive and learning outcomes and students' perceptions of the psychosocial characteristics of their classrooms. Their conclusion showed that an

increase in cognitive and affective learning outcomes were consistently related with classroom environments that were perceived by students as having greater cohesiveness, satisfaction, goal direction, organization and less friction.

As stated earlier, there is interaction between environment and individuals. Bandura's (1978) social cognitive theory represents such transactions of social/environmental and cognitive elements and behaviours of individuals. The theory explains psychological functioning in terms of environmental events, internal personal factors in the form of cognitive, affective, and biological variables, as well as behavioural patterns. His theory of triadic determinism states that these three (environment, personal cognitions, and behaviour) interact and influence each other bi-directionally. Such interactive nature of the three entities is presumed to shape the self regulation and reflection of individuals, which is another focus area of the social cognitive theory.

Though Bandura and other self-efficacy theorists repeatedly reported that the competence beliefs individuals have consistently predict their actions and performances. Dorman, Fisher, and Waldrip (2006) argued that efficacy theorists did not explicitly recognize the role of classroom and school psychosocial learning environments and students' experiences on their beliefs of efficacy. Dorman and his colleagues contended that such experiences would directly account for the development of students' academic self-efficacy. They stated:

> *Even a cursory review of the learning environment literature of the past three decades indicates that the learning environment is not an inert contributor to the sources of academic efficacy identified by Bandura and Schunk. Indeed it is striking that academic efficacy theory has not recognized the potential of psychosocial environment in explaining academic efficacy (Dorman, Fisher, and Waldrip, 2006, pp. 6–7).*

Hence investigating the effect of classroom environments on students' cognitive and psychological aspects is of a paramount significance to make the environment conducive to the students so that they get the most out of learning.

In short, one type of cognitive factor that could be affected by the classroom learning environment is self-efficacy, which is defined as one's perceived capabilities for learning or performing actions at designated levels (Bandura, 1997). Bandura (1994; 1997) underscores that self-efficacy is one of the most pervading and important psychological mechanisms of self-influence. This is due to the fact that self-efficacy beliefs determine how people feel, think, motivate them and behave. Such beliefs produce these effects through four major processes, which include cognitive, affective, motivational and selection processes.

When individuals feel that they are incapable of doing certain tasks, that they cannot control their environment, and attribute their failure to lack of competence rather than lack of effort and working hard, they develop a negative affect which can be referred to as depression or learned helplessness (Ramirez, Maldonado, and Martos, 1992; Peterson, Maier and Seligman, 1992; Yalew, 2005).

According to Bandura (1997), self-efficacy originates from previous performances, vicarious experiences (i.e., observation of others), and social

persuasion, and psychological and physical conditions of individuals. He maintained that vicarious experiences or observations of others play a role in the development of self-efficacy. Individuals do not need to directly experience a success or failure in a given task in order to learn any task. They can vicariously learn by observing and modelling others. In this regard, the role played by observing peers and friends is immense. It is more likely that the more similar the model (e.g., demographics such as age, sex, physical characteristics, and education, as well as status and experience) and the more relevant the task being performed, the more effect there will be on the observer's efficacy processing. Hence, the classroom environment that consists of a group of individuals with similar academic status could either negatively or positively colour the competence beliefs of students as they vicariously observe their friends and peers. In this case we can say that the classroom or school environment in which students interact most of their time with their peers could affect the level of their efficacy beliefs.

The other source of self-efficacy belief is social persuasion. Individuals influence one another through their remarks, suggestions, and comments. For instance, students' belief in their efficacy can be strengthened by the comments and verbal feedbacks of teachers, peers, and parents. It has been indicated that unkind words and negative feedback (e.g., "you can't do that") disable and deflate one's confidence and self-efficacy. A small negative comment or even nonverbal gesture can have a big impact on one's emotions and efficacy. In this case, the interactions students have with other students and teachers in the classroom would affect directly or indirectly their feelings of competence. In other words, the

environment wherein individuals live has some bearing on the perceptions they have about their competence feelings.

Schunk and Meece (2005) also acknowledged the influence of social settings like family, school, and peer on adolescents' perceptions of competence. They posited, "during adolescence there are important changes in young people's family, school, and peer environments. Influences associated with each of these social contexts may have profound effects on adolescents' beliefs about their capabilities of succeeding in and out of school" (p.74).

These theoretical backgrounds provide the bases to treat self-efficacy as a dependent variable, which is affected by the psycho-social classroom experiences of students.

On the other hand, Bandura (1994) stated that self-efficacy affects the level of stress and depression individuals experience in threatening or difficult situations, as well as their level of motivation. For instance he confirmed that low self-efficacy produces depression and anxiety. He further said:

> *People who impose on themselves standards of self-worth they judge they cannot attain drive themselves to bouts of depression. [The other] efficacy route to depression is through a low sense of social efficacy. People who judge themselves to be socially efficacious seek out and cultivate social relationships that provide models on how to manage difficult situations, cushion the adverse effects of chronic stressors and bring satisfaction to people's lives. Perceived social inefficacy to develop satisfying and supportive relationships increases vulnerability to depression through social isolation (pp. 74 – 75).*

In this statement we can understand that social and psychological contexts are considered as important precursors to depression. Those individuals who have the ability or the chance to interact with others and regard themselves as acceptable by others as well as feel competent to handle social, environmental and psychological problems tend to be less depressed.

Depression, which is a manifestation of pessimism and negative expectations about the future, is a result of repeated failure in past or feeling less efficacious in doing a task that has value to the individual. Some researchers (e.g., Stipek, 1992: 591) disclosed that students' perceptions of their ability and the expectation for success are "simply the reflections of their experiences in school" that depend mainly on their achievement history.

Self-efficacy affects goal setting and level of motivation people have, and the effort they put to reach the goals they set. More specifically, the higher the depression, the lower the goals people set for themselves, and the weaker will be their commitment to the goals as well as the lower the anticipation of success. Depression is a motivational problem that arises from failure, caused by either teachers, parents or both, in one or more tasks in the past (Stipek and Hoffman, 1980).

Depression destroys the major ingredients of learning, namely cognitive, emotional, and motivational aspects of the learner. Research indicated that it damages the child's desire and interest to learn (Peterson, Maier and Seligman, 1992; Yalew, 2005). Depression aborts the child's initiation to learn, causes the

child to believe that he/she has no control over the learning process and his/her behaviour, and to expect that the outcomes are inevitable.

As has been discussed in the preceding sections, classroom learning environments have their bearings on the psychosocial development of students. Moreover, it has been indicated that students' self-efficacy beliefs determine their behaviour and cognitive processes. There is, however, little research that brought together these two major influences on students' learning as well as the extent to which classroom environments impact the affective and cognitive aspects of the learners. This study assumed that classroom environments directly influence students' self-efficacy and could lead them to develop negative affects such as depression. In this case the study aimed at scrutinizing the effects of classroom environmental components on students' academic efficacy beliefs and depression, as well as the effect of self-efficacy on depression level of students.

More specifically, based on the theoretical explanations presented above, the purposes of this study were to examine the relationships between classroom environment with both positive (self-efficacy) and negative (depression) psychological variables of students. Besides, the study investigated the predicative validity of classroom environmental variables to self-efficacy, as well as the combined effects of classroom environmental variables and self-efficacy on depression.

The study could be of paramount significance in understanding how classroom environments influence such aspects of the students so that mechanisms could be sought to overcome the problems students have and to help them to be successful

in their educational careers. It also provides background information on how classroom environments would colour the psychosocial aspects of the learners so that teachers realize the type of interactions they will have with their students and the interactions students have with themselves affect the psychological, social and academic adjustments.

METHODS

Participants

The participants of this study were 364 (49 female and 315 male) students attending their sophomore, junior and senior years in nine departments in the Faculty of Education, Bahir Dar University. A questionnaire was administered to all students who were attending their regular classes. Classes that were conducted during the time of questionnaires were selected randomly. The questionnaire was handed out to 392 students but only the number of students mentioned earlier gave back complete and usable data.

Variables and Data Gathering Instruments

Academic Self-efficacy

Students' academic self-efficacy perceptions were assessed using a scale developed by Yalew (2003). The scale consisted of 10 items with a 6-point scale with response format of completely competent to not at all competent, where 6 represented completely competent, and 1 represented not at all competent. Studies showed that the inventory had reliability coefficient of 0.92 (Yalew, 2004). In item analysis, one item had low item-total correlation and depressed the reliability of the scale. As a result, it was discarded and the remaining 9 items were used for the analysis. The alpha reliability of the scale for this study was 0.83. The inventory was prepared in Amharic. Strictly speaking the scale was used to

measure students' academic efficacy beliefs which dealt with the competence they had vis-à-vis the academic subjects.

Classroom Environment

To assess the learning environment at higher education level, Fraser and Treagust developed the College and University Classroom Environment Inventory (Fraser, 1994). This scale was adopted and translated into Amharic. The original instrument had 49 items devoted to measure seven variables that measured students' perceptions of classroom environment which focused on the academic and psychosocial environment of university and college classrooms. The instrument conceptualized the environment as a dynamic social system that included teacher-student and student-student interactions. The seven variables included in the scale were involvement, student cohesiveness, satisfaction, personalization, task orientation, innovation, and individualization.

Table 1. Scale descriptions, reliability estimates, and sample items in the College and University Classroom Environment Inventory (CUCEI)

Scale	Description	Item	alpha
Student Cohesiveness	The extent to which students know, help and are friendly towards each other	Students in this class get to know each other well	0.71
Individualization	The degree to which students are allowed to make decisions and are treated differently according to ability, interest and rate of working	Students are generally allowed to work at their own pace	0.42
Innovation	The extent to which the instructor plans new, unusual class activities, teaching techniques and assignments	New and different ways of teaching are seldom used in this class	0.66
Involvement	The extent to which students participate actively and attentively in class discussions and activities	There are opportunities for Students to express opinions in this class	0.76
Personalization	The emphasis on opportunities for individual students to interact with the instructor and on concern for students' personal welfare	Lecturers help each student who is having trouble with the work	0.53
Satisfaction	The degree of enjoyment of classes	This class is a waste of time	0.58
Task Orientation	The extent to which class activities are clear and well organized	Getting a certain amount of work done is important in this class	0.68

However, using item analysis procedure, one item was deleted from each subscale due to either its low item-total correlation or its low and/or negative correlations with the other items. This reduced the number of items to 42. The items were scored on a four-point scale ranging from 1 to 4, where 4 represented strongly agree, and 1 represented strongly disagree, when the items were worded positively. For negatively stated items, reverse scoring was used. In this study the alpha coefficients of the subscales ranged from 0.42 for Individualization to 0.71

for Student Cohesiveness. The reliability of the overall scale was 0.87. The alpha coefficients, brief descriptions of each subscale, and sample items are provided in Table 1.

Depression

This scale was used to assess students' affective, motivational and somatic symptoms of depression that are related to learning in the university. It was scored on a four-point scale ranging from 1 to 4, with higher scores demonstrating higher level of depression. The items were adapted from Yalew (2003) with some modifications. Initially the scale had 16 items but through item analysis, one item was dropped due to its low relationship with the total scores. The reliability of the measure in this study was 0.87.

Data Collection Procedure

The College and University Classroom Environment Inventory was translated into Amharic and given to two experts together with the original scale to examine the concordance of the ideas of the original and translated texts. The experts indicated that some items were poorly stated. They were revised to fit to the Ethiopian context. The questionnaire was then distributed to the students in their regular classes with the consent and cooperation of the classroom teachers and the students. Students were instructed how to fill in the questionnaire items. The other scales, developed by the researcher himself, were administered together with the Classroom Environment Scales. Once the data were collected, questionnaires were sorted out to identify those that were properly filled in from those that were not.

To identify the "best" items from the "poor" ones, item analysis was carried out. Based on the results, items that correlated either negatively or insignificantly with other items and/or with the total scores were rejected from the list and the remaining items were used in the final analysis. The reliability indices of the scales were computed using Cronbach alpha coefficients.

Data Analysis

The objective of this study was to examine the relationships among students' perceptions of classroom environment, self-efficacy and negative affects, i.e., depression. Pearson product moment correlation and multiple regression analyses were used to analyze the data. Correlation was used to assess the relationships among the psychological variables and the subscales of classroom environment. The study also examined the effects of the seven factors or components of classroom environment and self-efficacy as predictor variables on depression. Moreover, the effects of the components of classroom environments on self-efficacy were also investigated using multiple regression analysis. One way ANOVA was employed to examine whether there were significant differences in the components of classroom environment, self-efficacy, and depression among the various departments and years of study. Descriptive statistics such as means and standard deviations were also computed. Item analysis was run to select items that had high item-total correlations which could be used to measure the variables. Trend lines were employed to present the levels of students' perceptions and self-efficacy and depression across departments and year of study. Those items that depressed the reliability of a scale were rejected.

RESULTS

The major purpose of this study was to investigate classroom environment perceptions of students and how their perceptions are related to students' self-efficacy beliefs and levels of depressions. In this section, results pertaining to the levels of students' perceptions of classroom environments with regard to various components of the classroom environment, as well as the effects of classroom environment components and self-efficacy on depression, and the impacts of classroom environment on self-efficacy are presented. Moreover, the effects of department and years of study on classroom environment perceptions of students were examined. Since sex failed to correlate significantly with any one of the variables, it has been dropped from the analysis.

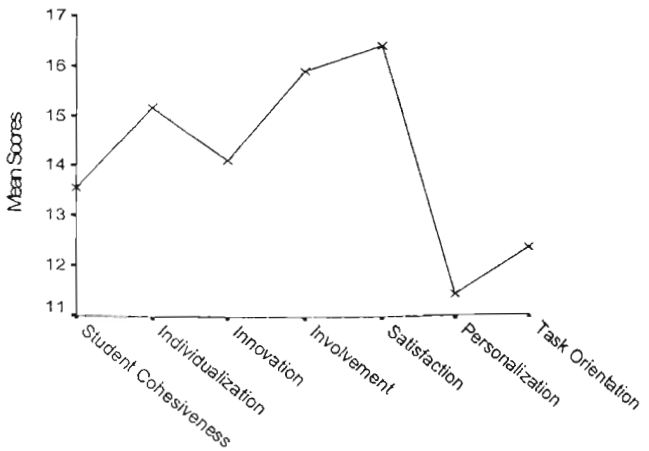

Figure 1. Magnitude of students' perceptions about classroom environment components

The first purpose of the study was to examine the magnitude of students' perceptions about classroom environment components. The results in Figure 1 indicated that students perceived their classroom environments as enjoyable and are involved in classroom activities. The students reported, however, that instructors did not provide adequate opportunities for individual students to interact with them and had very low concern for students' well-being. Moreover, they reported that the task given to them and the activities assigned to them were not as clear and well organized as they expected them to be. The results were presented in Figure 1.

Table 2. ANOVA results for classroom components by departments

Variables	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
Student cohesiveness	Between departments	54.617	7	7.802	0.788	0.598
	Within departments	3525.284	356	9.902		
	Total	3579.901	363			
Individualization	Between departments	91.658	7	13.094	2.014	0.053
	Within departments	2314.438	356	6.501		
	Total	2406.096	363			
Innovation	Between departments	564.893	7	80.699	10.422	0.000
	Within departments	2756.544	356	7.743		
	Total	3321.437	363			
Involvement	Between departments	212.631	7	30.376	3.126	0.003
	Within departments	3459.729	356	9.718		
	Total	3672.360	363			
Satisfaction	Between departments	89.189	7	12.741	1.974	0.058
	Within departments	2297.844	356	6.455		
	Total	2387.033	363			
Personalization	Between departments	101.830	7	14.547	2.118	0.041
	Within departments	2445.453	356	6.869		
	Total	2547.283	363			
Task orientation	Between departments	130.411	7	18.630	1.936	0.063
	Within departments	3425.974	356	9.624		
	Total	3556.385	363			

Interdepartmental comparisons were made to examine variations in students' perceptions of classroom components regardless of differences in years of study. One-way- ANOVA disclosed that there were significant variations in four of the seven classroom components. The differences were observed in individualization, innovation, involvement and personalization. The results are indicated in Table 2. Since the overall F values do not show which departments differ significantly

from which, multiple mean comparison procedures using Tukey HSD method was employed. As the number of students varied in each department, harmonic mean was used to compute the HSD values. The results indicated that the significant variation in individualization was contributed by the significant variation between Geography and English, in favour of the former. The significant differences in innovation resulted from the variations in Amharic and Biology, and Amharic and Chemistry, both in favour of Amharic, as well as between English and Biology, Chemistry, Geography, Maths, Pedagogical Science, and Physics, all in favour of English. In other words the means of Amharic and English Department students were significantly higher than the means of students in the other departments.

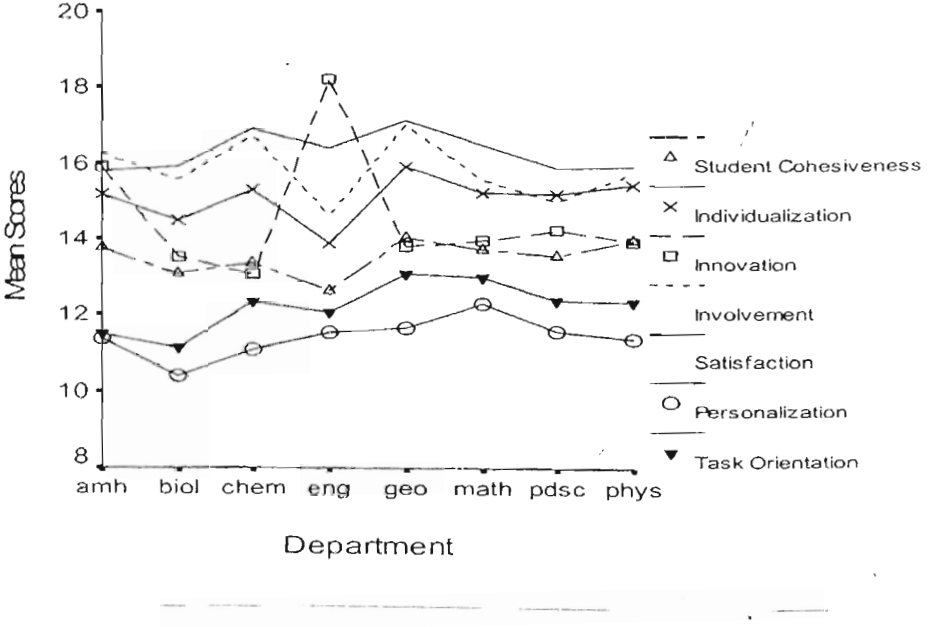

Figure 2. Magnitude of students' perceptions about classroom components by department

The mean difference between Amharic and English department students was not significant, showing that students in the language departments felt that their teachers plan new, unusual class activities, teaching techniques and assignments more than students in other departments. Students in the departments of Geography and Chemistry reported that they participate actively and attentively in class discussions and activities more frequently than students in Pedagogical Sciences department, and there was a significant difference in involvement in classroom activities between students in English and Geography department, where the latter ones felt more involvement. The other significant variation found was in personalization where such variation was contributed by a significant difference between Maths and Biology students where the formers reported higher level of interaction with their teachers and that the teachers had concerns for the personal well-being of their students. To vividly designate the variations among the departments visually, the results were represented diagrammatically in Figure 2.

Similar analysis was carried out to examine the effects of departments on students' feelings of self-efficacy and depression. The overall one-way-ANOVA result indicated that there was a significant difference in self-efficacy ($F_{7, 356} = 3.395$, $p<0.001$) but not in depression ($F_{7, 356} = 1.533$, $p>0.05$) across departments. A multiple mean comparison procedure using Tukey HSD indicated that the significant mean difference in self-efficacy was found only between English and Maths students, in favour of the former. Students from other departments reported no significant variation in their self-efficacy beliefs. The patterns of their efficacy beliefs and feelings of depression are presented in Figure 3.

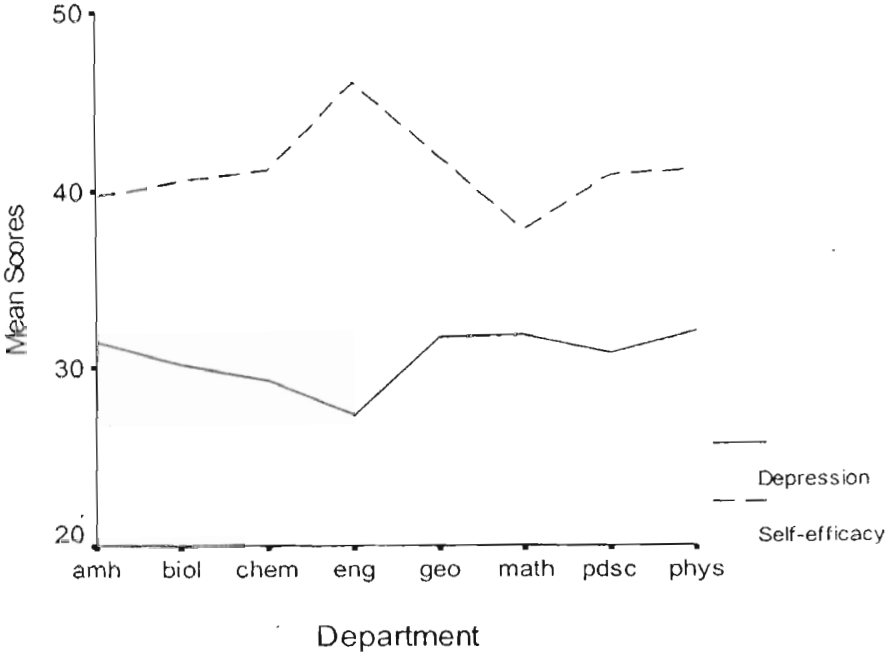

Figure 3. Levels of students' feelings of self-efficacy and depression across departments

Since one of the major purposes of this study was to investigate the relationships among classroom environment, self-efficacy and depression, a correlation analysis was carried out. In Table 3, means, standard deviations, and zero-order correlation coefficients were presented. The results showed that self-efficacy correlated significantly with all classroom environment components and depression. It has been found that self-efficacy correlated strongly with depression ($r = -0.379$), satisfaction ($r = 0.256$) and student cohesiveness ($r = 0.215$). With the exception of personalization, all correlations of depression with classroom environment

components were significant and negative. The intercorrelations among the classroom environment components were significant.

Table 3. Means, standard deviations, intercorrelation matrix among classroom environment components, self-efficacy and depression

Variables	Mean	SD	1	2	3	4	5	6	7	8
1 Self-efficacy	40.74	7.613	1.000							
2 Student cohesiveness	13.55	3.140	0.215**	1.000						
3 Individualization	15.17	2.575	0.145**	0.473**	1.000					
4. Innovation	14.12	3.025	0.147**	0.212**	0.212**	1.000				
5 Involvement	15.91	3.181	0.136**	0.370**	0.459**	0.204**	1.000			
6 Satisfaction	16.40	2.564	0.256**	0.385**	0.506**	0.161**	0.513**	1.000		
7. Personalization	11.43	2.649	0.112*	0.481**	0.413**	0.250**	0.337**	0.259**	1.000	
8. Task orientation	12.35	3.130	0.129*	0.555**	0.436**	0.265**	0.388**	0.393**	0.522**	1.000
9. Depression	30.63	7.778	-0.379**	-0.277**	-0.118*	-0.109*	-0.225**	-0.290**	0.025	-0.137**

**p< 0.01, *p< 0.05.

To identify a set of predictor variables, multiple regression analysis was conducted. It was computed to examine the combined effects of all the seven classroom environment components and self-efficacy on depression. The result showed that about 26% ($R = 0.507$, $R^2 = 0.257$, adj. $R^2 = 0.240$, $F_{8,355} = 15.317$) in the variance of depression was accounted for by these variables. Examination of the contributions of individual variables revealed that those variables that significantly contributed to the variance in depression were self-efficacy, student cohesiveness, satisfaction, and personalization. The first three factors correlated negatively and in the expected direction. However, personalization failed to correlate in the expected direction. The results are presented in Table 4.

Table 4. Multiple regression analysis of self-efficacy and classroom components on depression

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Self-efficacy	-0.308	0.049	-0.302	-6.280	0.000
Student Cohesiveness	-0.635	0.149	-0.256	-4.261	0.000
Individualization	0.280	0.179	0.093	1.564	0.119
Innovation	-0.100	0.125	-0.039	-0.800	0.424
Involvement	-0.304	0.139	-0.124	-2.190	0.029
Satisfaction	-0.462	0.179	-0.152	-2.579	0.010
Personalization	0.690	0.168	0.235	4.106	0.000
Task Orientation	-0.001	0.152	-0.001	-0.009	0.993

$R = 0.507$, $R^2 = 0.257$, $adjR^2 = 0.240$, $F_{8,255} = 15.317$, $p < 0.0001$

The results in Table 4 showed that self-efficacy and classroom component jointly accounted for about 26% in the variance of depression. However, the variables that significantly predicted depression were Self-efficacy (β = -0.302) Student Cohesiveness (β = -0.256), Personalization (β = 0.235), Involvement (β = -0.124), and Satisfaction (β = -0.152). The analysis revealed that self-efficacy was relatively the strongest predictor of depression followed by Student Cohesiveness.

Table 5. Stepwise regression analysis of classroom components and self-efficacy on depression

Model	Variables	Un standardized Coefficients		Standardized Coefficients	t	Sig.	R	R^2
		b	Std. Error	Beta				
1	Self-efficacy	-0.387	0.050	-0.379	-7.781	0.000	0.379	0.143
2	Self-efficacy	-0.342	0.050	-0.334	-6.869	0.000	0.428	0.184
	Student Cohesiveness	-0.509	0.121	-0.205	-4.218	0.000		
3	Self-efficacy	-0.344	0.049	-0.336	-7.046	0.000	0.466	0.217
	Student Cohesiveness	-0.758	0.134	-0.306	-5.652	0.000		
	Personalization	0.616	0.156	0.210	3.941	0.000		
4	Self-efficacy	-0.312	0.049	-0.305	-6.363	0.000	0.492	0.242
	Student Cohesiveness	-0.629	0.137	-0.254	-4.574	0.000		
	Personalization	0.664	0.155	0.226	4.293	0.000		
	Satisfaction	-0.526	0.155	-0.173	-3.404	0.001		
5	Self-efficacy	-0.314	0.049	-0.307	-6.434	0.000	0.500	0.250
	Student Cohesiveness	-0.592	0.138	-0.239	-4.290	0.000		
	Personalization	0.718	0.156	0.245	4.596	0.000		
	Satisfaction	-0.381	0.170	-0.126	-2.248	0.025		
	Involvement	-0.275	0.136	-0.112	-2.025	0.044		

To select the best predicator variables from those variables included in the regression equation, a stepwise multiple regression analysis has been computed. In Table 5, the identification of the predictors revealed that from the classroom environment subscales Student Cohesiveness, Personalization, Satisfaction, and Involvement were found to significantly influence depression together with Self-efficacy. The four classroom environment variables and self-efficacy accounted for 25% in the total variance of depression.

Further analysis was done by taking self-efficacy as a dependent variable and the classroom environment subscales as independent variables. Results from multiple regression analysis disclosed that the seven components jointly explained 9.1% in the variance of self-efficacy ($R = 0.304$, $R^2 = 0.093$, adj.$R^2 = 0.075$, $F_{7, 356} = 5.193$, $p<0.001$). Those variables that predicted self-efficacy significantly were Satisfaction ($\beta = 0.228$), Student Cohesiveness ($\beta = 0.159$), and Innovation ($\beta = 0.103$) (see Table 6).

Table 6. Multiple regression analysis of classroom components on self-efficacy

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	b	Std. Error	Beta		
Student Cohesiveness	0.385	0.160	0.159	2.414	0.016
Individualization	-0.097	0.193	-0.033	-0.501	0.617
Innovation	0.259	0.134	0.103	1.935	0.054
Involvement	-0.061	0.150	-0.025	-0.406	0.685
Satisfaction	0.678	0.190	0.228	3.563	0.000
Personalization	0.00002	0.181	0.000	0.000	1.000
Task Orientation	-0.127	0.164	-0.052	-0.776	0.439

$R = 0.304$, $R^2 = 0.093$, adj$R^2 = 0.075$, $F_{7, 356} = 5.193$, $p<0.0001$

Through stepwise regression analysis, it has been found that only the first two variables predicted students' efficacy beliefs but Innovation was eliminated from the model. These two variables contributed 8.1 per cent in the variance of self-efficacy.

Table 7. Stepwise multiple regression analysis of classroom components on self-efficacy

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R	R^2
		b	Std. Error	Beta				
1	Satisfaction	0.759	0.151	0.256	5.033	0.000	0.256	0.065
2	Satisfaction	0.603	0.162	0.203	3.719	0.000	0.285	0.081
	Student Cohesiveness	0.331	0.132	0.136	2.496	0.013		

DISCUSSION

The major purpose of this study was to investigate the relationships among classroom environment, self-efficacy and depression. Correlation and regression analyses were used to analyze the data. Trend lines have been fitted to compare the magnitude of students' perceptions on the components of classroom environment. The correlation analysis revealed that student cohesiveness, involvement, satisfaction, and task orientation related significant with depression and self-efficacy, all in the expected directions. Moreover, self-efficacy related significantly and negatively with depression, which implies that students with low self-efficacy tended to experience more level of negative affects, i.e., depression. This result is in line with the research reports of Yalew (2005) and Bandura

(1994; 1997). Although the correlations of self-efficacy with all components of classroom environment were significant, its relationships with personalization (r= 0.105, p=0.046), and task orientation (r = 0.120, p=0.022) were not strong. Its relationships with satisfaction and student cohesiveness were positive and moderately high. This implies that students who believed that the classroom environment is satisfying tended to have the competence to do tasks of their classrooms.

Comparative analysis was made to examine variations in students' perceptions of classroom environment dimensions. As presented in Figure 1, the magnitude of students' perception regarding the components of the classroom environment demonstrated that they felt that the classrooms did not facilitate student cohesiveness, innovation, personalization, and task orientations. In other words, students perceived that the classroom environments did not encourage them to work together, to get to know each other, and to feel part of the group. Moreover, the results suggest that the classrooms did not provide students the opportunity to be innovative and creative, i.e., teachers do not plan and present new ideas, give students assignments that develop their innovation, and do not vary teaching methods and techniques. The worst of all is that, according to the students' perception, students have very little opportunities to interact with instructors, and the instructors do not care for individual students' personal welfare.

The correlation and multiple regression analyses revealed interesting results. It has been found that the classroom environment dimension variables, with the exception of Personalization and Self-efficacy, related significantly with the level of student depression. Students who feel that their classmates know each other

well, interact with and are friendly to each other, and get support and help from others; those who view the classroom environment more enjoyable, those who feel that they actively participate in classroom discussions and activities, those who perceived that their classroom environment is a place where their instructors plan new and innovative activities, and those who thought that the classroom environment allowed them to make decisions and treated differently based on their ability, interest, and pace of work tended to be less depressed than their counterparts did.

As stated in the introduction part of this study, the classroom environment is a very crucial setting for students' educational achievement and psycho-social development. Many researchers reported that the classroom learning environment affects the students' social, educational, and psychological outcomes (Fraser, 1994; Hurlock, 1985; Dorman, Fisher, and Waldrip, 2006; Baek and Choi, 2002; Haertel, Walberg and Haertel, 1981). As learners acquire self-efficacy information from knowledge of others' performances through social comparisons (Schunk and Meece, 2005), it is more likely that they develop either positive or negative affects based on their social environments. The results of this study also substantiated these reports.

It is more likely that classroom environments that are not enjoyable in which the tasks are not clearly defined and organized as well as those that are less innovative and that give little or no chance to individual students to do tasks at their own pace, interests, and ability may cause negative affects like stress or depression. Moreover, students spend much of their time in classrooms. Consequently, much of their interactions are with their teachers and classmates. Lack of social support

from these important groups, and considering these groups as unfriendly and unapproachable by the students, would lead them to develop such feelings as depressions and other negative emotions.

When classroom environments are conducive and attractive to the students, they develop positive affects. For instance, a research outcome reported by some scholars showed positive associations between classroom environment components and science attitudes (Dorman, 2002; Fraser, 1998b) and students' academic achievement (Baek and Choi, 2002).

However, results from multiple regression analysis unveiled that the significant predictor variables of classroom environment to depression were student cohesiveness, satisfaction, involvement, and personalization. Student cohesiveness, which refers to the extent to which students know, help and are friendly towards each other, predicted students' psychological well being. Previous research reported also that when students perceived warm relationships with both other students and their teachers, their academic achievement showed an increase in magnitude (Baek and Choi, 2002). Following the triadic determinism of social cognitive theory, we can say that the social environment under which individuals interact with others would affect the psychological and social behaviour outcomes. In this case, the direction of the statistically significant beta coefficient between depression and student cohesiveness is plausible. The other classroom environment dimension that negatively correlated with depression was satisfaction. When students perceive that the environment is not enjoyable, the tendency to develop negative affect is more likely. The tasks they are expected to perform, the setting in which the teaching-learning processes take place, and the

overall atmosphere of the classroom engender satisfaction in students. Students evaluate the overall situations of the classroom environments and develop a feeling of satisfaction or dissatisfaction. In this study it was found out that those students who perceive the classroom environment as less enjoyable tended to feel depressed.

Furthermore, Involvement, which is defined as the extent to which students participate actively and attentively in class discussions and activities, was correlated significantly but negatively with depression. It is not surprising that when students are deprived of the opportunity to participate in class discussions, for whatever reasons, may develop a feeling of depression. In other words, active participation of students in class discussions would help them to express their ideas, beliefs, and feeling which could serve as leeway to discharge their pent up emotions. One way in which students may get satisfaction with the classroom environment could be through their active involvement in class discussions. This could be augmented with the correlation between Satisfaction and Involvement ($r = 0.513$) which is strong and positive. This could imply that students who are actively involved in class activities and discussions and are more satisfied with the classroom environment would develop positive affects.

Another intriguing result was the positive association between depression and Personalization. In the stepwise analysis, Personalization, which refers to opportunities for individual students to interact with instructors and the concern instructors have for their students' personal welfare, turned out to be a positive predictor of depression. This indicates that an increase in the level of interaction between students and their instructors and the concern instructors have for the

personal welfare of students is associated with an increased level of depression. Normally, we expect a negative association between the two variables. One explanation for this result could be students who have personal problems may go to their instructors seeking help from them. In higher learning institutions of Ethiopia, students very rarely go to their instructors seeking help when they encounter educational, psychological, social, and other personal problems, even when the instructors are ready to help them. It is only under some circumstances that the students go for help to their instructors. Hence it is most likely that students who perceive that their teachers give them the chance to interact with them and are concerned for their wellbeing might be those who had high level of depression. In other words, students who go to their teachers seeking solutions for their personal problems and those who want their teachers to be concerned about their welfare could be those who have stress and depression, which might have resulted in such positive relationship.

As presented in Tables 4 and 5, another variable that significantly and negatively predicted depression was self-efficacy. Self-efficacy has been found to affect the motivational, affective, and cognitive outcomes of students. This result is in concordance with the reports of previous research (Bandura, 1996; Pajares and Schunk, 2001; Yalew, 2005). Though mediational role of self-efficacy between and its effects on the psycho-cognitive outcomes are well documented, research that treated the effect of classroom learning environment on students' self-efficacy and affective aspects is limited. This study attempted to bring together the more pervasive cognitive factor, i.e., self-efficacy, and classroom environment components in explaining the negative affect, i.e., depression, of the students. The

results indicated that about 26% in the variance in depression was accounted for by the combined effects of the classroom environment dimensions and self-efficacy. The independent contribution of self-efficacy was 11.45% (-0.379 x -0.302 x 100%), which is near 45.5% of the total explained variance of depression. The remaining 14.55% in the variance in students' depression was accounted for by the dimensions of classroom environment. This signifies the paramount significance of learning environment as well as the role of self-efficacy in academic and psychological functioning of students.

Social cognitive researchers indicated that individuals engage in tasks in which they feel competent and confident and avoid those in which they do not feel competent or that they perceive they will fail (Bandura, 1994). It is also presumed that individuals who feel that the environment is comfortable feel positive about the environment and themselves. Efficacy beliefs affect the amount of stress and anxiety individuals experience as they engage in an activity (Pajares & Miller, 1994), and the level of learned helplessness they experience (Yalew, 2005). Consequently, self-efficacy beliefs put into effect a powerful influence on the level of psychological, social and educational accomplishments that individuals ultimately realize. Researchers indicated that individuals with low self-efficacy tend to experience stress and burnout because of their anticipation of failure, but those with high self-efficacy enter into potential stressful situations with confidence and assurance and thus are able to resist stressful reactions (Pajares and Schunk, 2001; Bandura, 1994).

The results of this study demonstrated both positive and negative psychological consequences of classroom environment on self-efficacy and depression. It has

extended further the results of previous research on classroom environment by including perceptions of competence, and depression as dependent variables. Dorman, Fisher and Waldrip (2006) reported similar results. These researchers give an account that classroom environment has been found to influence academic efficacy. Some years back similar results have been reported by Dorman (2001), as cited by Dorman, Fisher and Waldrip. He found significant relationship between classroom environment and academic efficacy.

Self-efficacy was affected by two of the seven classroom environment dimensions, i.e., satisfaction and student cohesiveness. It is interesting to see that the psychological component of classroom environment, which is satisfaction, is influencing the students' level of self-efficacy. Students' satisfaction with the educational provision and the classroom atmosphere could colour their personal judgments or self-efficacy beliefs. The other variable that predicted students' efficacy beliefs is the cohesion among them. In other words, students' warm relationship with each other as well as with their teachers affects the students' perception of competence. Bandura (1994) stated that one source of self-efficacy is verbal persuasion or social influence. Consequently, acceptance, rejection or simple verbal remarks by the social group wherein individuals belong directly or indirectly could affect the extent to which they feel competent or not.

The study also shows another key outcome. As the graph on Figure 3 displays, students' year of study seems to have importance in the development of competence or decline of depression. This could be explained in terms of two conditions. First, either those students with lower level of perceived competence might have discontinued their education, especially for academic reasons, or those

senior students might be the ones who passed through the challenges and demands of education which enabled them to develop a sense of efficacy. As individuals encounter challenges and overcome them through efforts and become successful, there is a tendency to feel competent.

The findings of this study have very important implications for teachers, the university management, and students. The results depicted that the classroom environment dimensions presented in the correlational analysis related positively with self-efficacy, and six of the seven components of classroom environment, and self-efficacy correlated negatively and significantly with depression. This could imply that making classroom learning environments more supportive, that are characterized by warm relationship, which encourage student involvement as well as creativity that give chances to the students to get satisfaction, increase the competence beliefs but decrease the depression levels of students. Teachers who provide support, show concern to their students, and engender student cohesion in classrooms are more likely to boost students' academic efficacy which is a consequential precursor to success. The results suggest that teachers should organize classrooms in such a way that students are encouraged to actively participate and get the opportunity to express their ideas, feelings, beliefs, and the latitude to air their pent up emotions. Doing so would minimize students' negative psychological outcomes such as depression, anxiety, and stress. This will also create a ground to the students to interact with each other, work together, get to know with one another, and to share experiences and learn from each other.

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