



Classroom Learning Programs for Reducing Stress on Students' Senior High School

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Abstract. The learning atmosphere in schools is a strategic factor in developing optimal student potential where the teacher, as an actor, plays an essential role. The study aims to examine the role of the learning atmosphere in reducing student stress. Data were obtained randomly from 641 senior high school students in East Java (161 male and 480 female). The tools: What is Happening in this Class?, and the Perceived Stress Scale were used to obtain the data. Data were analyzed using descriptive analysis techniques and regression analysis. The results showed that the learning atmosphere significantly reduces stress, and Student involvement is the most dominant factor in reducing stress levels. It can be concluded that student's involvement in the classroom is an alternative learning program that can be used to reduce student stress. Recommendations are the need for a learning atmosphere to improve learning outcomes and reduce stress. The teacher can create a classroom atmosphere that allows students to be intensively involved in learning.

Keywords: students involvement · learning atmosphere · psychological problems · psychological well-being · students stress

1 Introduction

Although the classroom can be a fun learning space for students, it can also be a psychological pressure, causing low student motivation. A study indicates that students experience mental health problems with difficulty processing information [1, 2]. Stress is a significant factor that causes psychological distress in students characterized by anxiety and depressive symptoms [3]. It is caused by academic fatigue that originates in interpersonal, intrapersonal, educational, and environmental relationships. It shows that stress is not extraneous in the learning process [4, 5]. Kurbanoglu & Akin [6] said that students experience difficulties processing information, especially those with mental health problems. Furthermore, research proved that 64% of those who did not graduate and did not attend college admitted to having mental health problems. Also, 45% of

students admitted not receiving support or accommodation, and 50% did not disclose their college mental health conditions. Some of these studies show that stress is an inseparable part of educational practice. Therefore, proper handling is needed to optimize the learning process.

Stress is a significant problem for students as it faces various academic, social, and personal challenges. When pressure is considered harmful or excessive, it can affect academic achievement. In their studies, Unwin et al. [7] showed that stress is a significant factor causing psychological distress and depression. It comes from various interpersonal, intrapersonal, academic, and environmental sources. In line with this, Van Ryzin & Roseth [8] states that student stress in learning can be triggered by two factors: (1) negative peer interaction; and (2) social marginalisation or exclusion from peer groups. Stress management is an essential skill for all students. Cong et al. [9] stated that there are two main strategies to prevent student stress: (1) strategies that focus on problems and (2) strategies that focus on emotions. Strategies that focus on problems are active approaches; for example, receiving social support, solving problems, seeking advice or information, and analysing problems logically. Simultaneously, strategies that focus on emotions are avoidance and passive, such as withdrawal from stressful situations. However, some students use negative strategies to prevent stress, as Timmins et al. [10] found that several students turned to drugs and alcohol to reduce stress and anxiety.

This article analyses the classroom learning program's effect on reducing student stress in senior high school. Three issues will be the focus of the discussion: 1) What is the description of student stress levels in school? 2) How does the school atmosphere affect student stress? 3) Which type of school atmosphere affects student stress? This article is based on three basic arguments: 1) A conducive learning atmosphere with healthy relationships between the actors involved in the learning process will provide students with a pleasant experience; 2) System support and constructive communication patterns between actors in a learning atmosphere will foster self-confidence and optimism among students when they face problems; 3) A well-programmed learning design and a conducive learning atmosphere will develop the potential for student optimism.

2 Method

The data were obtained from 641 students (male = 161, female = 480) from 7 senior high schools in East Java. The subjects' ages ranged from 15–18 years (mean = 16.83; deviations standard = .73). Subjects were selected randomly from the 7 participating schools. The data collection process was completed after the school provided research permission and the student concerned agreed to be a research subject. A complete description of the research subjects can be seen in Table 1.

Table 1 explains that the number of subjects in each school is relatively the same. The number of female subjects is more than male. One of the reasons is that there are no male subjects from Kediri, and the number of female subjects from each school is more than male.

Two measuring tools were used to measure learning atmosphere, optimism, and stress. The learning atmosphere variable was measured via the tool *What is Happening in this Class?* (Fraser, Fisher, & McRobbie, 1996; MacLeod & Fraser, 2010; Skordi &

Table 1. Description of the research subject

No	District	Research subject					
		Male	%	Female	%	Total	%
1	Jombang	31	4.84	61	9.52	92	14.35
2	Surabaya	48	7.49	51	7.96	99	15.44
3	Gresik	14	2.18	66	10.30	80	12.48
4	Kediri	0	0	92	14.35	92	14.35
5	Tulung Agung	27	4.21	66	10.30	93	14.51
6	Lamongan	15	2.34	81	12.64	96	14.98
7	Ponorogo	26	4.06	63	9.83	89	13.88
Total		161	25.12	480	74.88	641	100

Table 2. Dimension of the learning atmosphere

No	Dimension	Sample items
1	Support	The teacher is interested in my problem
2	Equity	I got the same of assistance from the teacher as other students
3	Cohesiveness	I am friends with students in this Class
4	Collaboration	I collaborate with other people when doing assignments
5	Involvement	I gave my opinion during class discussion
6	Investigations	I conducted experiments to answer teacher questions
7	Task orientation	I know what I am trying to achieve in this Class

Fraser, 2019) Moreover, has been validated by Dorman [14]. This measuring instrument is an instrument the classroom situation during the general learning process. It has a reliability of $\alpha = .75$ to $.94$ for each aspect [12]. This tool can reveal aspects of the learning atmosphere as follows in Table 2:

Stress measurement was performed using *Perceived Stress Scale*, a tool developed by Cohen et al., [15]. This tool consists of 10 items that measure the extent to which individuals live their lives in the face of pressures that might interfere with their health. It addresses two factors: perception of aid and perception of self-confidence. Perception of aid consists of 6 items: feeling confused, unable to work properly, feeling of failure, difficulty in solving problems, nervousness, and difficulty in rising from adversity. The perception of self-confidence consists of 4 items: irritability, loss of control, and feeling that life is not in line with wishes, and lack of control. This scale is a Likert scale with five alternative answers and is designed for subjects currently studying at the high school level. Examples of items for this scale include: *How often do you feel unable to do the work that needs to be done?* The results showed that the perception factor for help

has $\alpha = .86$, the perception factor for self-confidence $\alpha = .72$, in total this measuring instrument has $\alpha = .84$ [16].

Data analysis was carried out through three analysis techniques. The descriptive analysis technique was used, which aims to determine the level of stress in students. The method used was to compare the hypothetical mean and the empirical mean. If the student's empirical mean value is higher than the hypothesised mean, the student has a high stress level, and vice versa. The second analysis technique was a simple regression analysis that examines the learning atmosphere's effect on optimism and stress. The third technique was the Mediated Regression Analysis technique, which looks at optimism as a mediator variable on the relationship between the learning atmosphere and student stress.

3 Results

This article examined the classroom's learning atmosphere to grow optimism and reduce student stress. For this reason, the analysis focused on three parts: describing the student's stress level, examining the direct effect of the learning atmosphere on stress, and examining the role of optimism as a mediator variable on the relationship between the learning atmosphere and stress. In this case, the learning atmosphere is the relationship between teachers and students, peer-group relations, and the learning process.

3.1 Description of Student Stress in School

The descriptive analysis compares the stress variable's empirical and hypothetical mean. The results showed that student stress is in the high category. It is indicated by a higher empirical mean score than the hypothesised mean (30.05: 30). Furthermore, the analysis indicated that of the ten stress indicators, six indicators have a high category. Furthermore, stress is grouped into three categories: the high category if the score is higher than the hypothesised mean, the moderate category if the score is equal to the hypothesised mean, and the low category if the score is lower than the hypothesised mean. The analysis results are presented in Table 3.

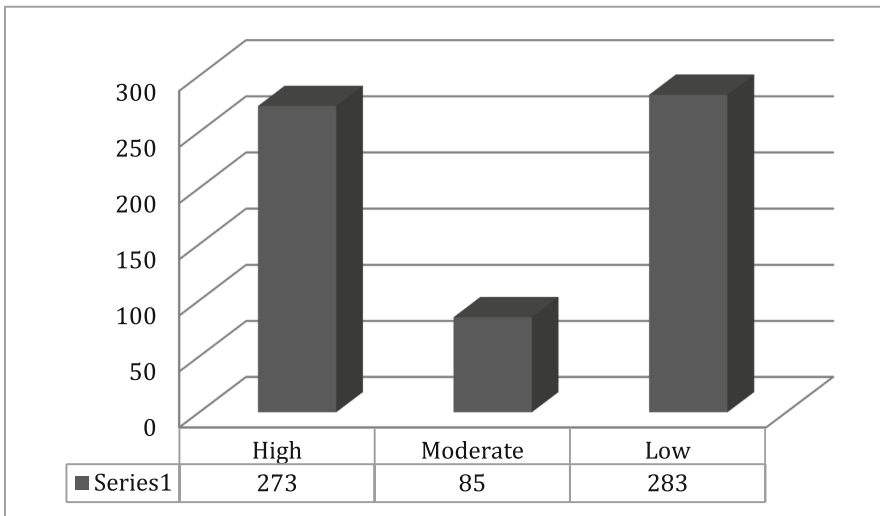
The results of the descriptive analysis showed that out of 641 students, there were 273 (43%) students who had high-stress levels, 85 (12%) students had moderate stress levels, and 283 (44%) students had low-stress levels. Furthermore, in boys subjects, it was found that out of 161 subjects there were 88 (55%) students who had high and moderate stress levels, while in girl subjects it was found that out of 480 students there were 270 (56%) who had high and moderate stress levels (Fig. 1).

3.2 The Effect of the Learning Atmosphere on Stress

The results of a regression analysis of the effect of school atmosphere in the classroom on student stress showed a value $R = .169$, $R^2 = .029$ $P < .050$. These results mean that the school atmosphere in the classroom is a predictor of the high or low level of student stress by 2.9%. The full data is in Table 4.

Table 3. Description of stress level

No	Variable	Category						Σ
		μ	Mean	SD	High	Moderate	Low	
Student stress		30	30.05		273	85	283	641
1	Feeling confused	3	3.49	4.04	292	300	49	641
2	Feeling Irritability	3	3.39	.84	278	252	111	641
3	Feeling nervous.	3	3.31	.94	246	291	104	641
4	Loss of behavioral control.	3	3.26	.90	230	307	104	641
5	It is hard to rise from adversity.	3	3.19	1.04	230	255	156	641
6	Unable to work.	3	3.17	.79	198	346	97	641
7	Feeling out of line with wishes	3	2.59	.78	54	315	272	641
8	It is hard to control yourself.	3	2.54	.91	79	270	292	641
9	Feeling like a failure.	3	2.49	.84	44	281	316	641
10	Trouble solving problems	3	2.39	.84	41	250	350	641

**Fig. 1.** The level of students stress

A partial regression analysis of the type of school atmosphere to student stress showed that the seven learning classrooms that have a significant effect on stress is involvement.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.169 ^a	.029	.018	3.61040		
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	242.463	7	34.638	2.657	.010 ^b
	Residual	8251.160	633	13.035		
	Total	8493.622	640			

Table 5. The result of partial regression analysis

No	Variables	1	2	3	4	5	6	7	8
1	Stress	-	-.037	-.014	-.182**	.117	-.069	.001	.117
2	Cohesiveness		-						
3	Student support			-					
4	Involvement				-				
5	Investigation					-			
6	Task-oriented						-		
7	Cooperation							-	
8	Equity								-

ns = not significant, * = .005 ** = .001 level of significant

Student involvement is the type of educational program in the classroom most effective in reducing student stress levels. The full data is in table 5.

Table 5 explains that student involvement in the classroom is among the seven most influential types of activity. Other influential activities are investigation and equity; only the correlation is positive. Other types of activity have an insignificant effect.

4 Discussion

The results of this study show that the school atmosphere in the classroom can be a predictor for reducing student stress. One of the activities in the classroom that can be used to lower student stress is active student involvement in the learning process [17]. These results reflect the importance of using an active student-oriented learning model as a learner, not a passive student. Learning models that can be used to make students active are constructive [18]. This learning model allows students to engage and interact with other students in the learning process in the classroom. In other words, the teacher’s selection of a learning model in the classroom is decisive for the student’s ability to cope with stress.

Teachers play an essential role in creating comfortable classroom spaces. With school psychologists, counsellors, and peers, teachers are crucial in providing emotional support

in overcoming students' anxiety and sadness. These views underline the reduction in student stress levels by teachers' intrinsic competence and character [19]. Therefore, it is essential to examine the relationship between the learning atmosphere and decreased stress levels through optimism variables. Formal learning does not always have positive implications; sometimes, learning in the classroom provides mental load and stress. In step with that, for example, Frick et al. [20] stated that stress could cause detrimental effects on health, academic achievement, and work performance. In addition,

Teachers can design any learning model in the classroom that is used in carrying out the process with two objectives. First, learning objectives that are oriented towards achieving the understanding and skills of the subject matter. Second, learning objectives that are oriented towards achieving other goals of the learning process. Reducing stress can be done by teachers by designing a nurturant effect. The model of activity has been carried out by several previous researchers [21, 22]. Thus, the teacher's efforts in encouraging student participation in the classroom can be a solution in overcoming student stress.

The results of this study reflect that the teacher-centered behavioristic learning model considers that students are passive in learning, should be abandoned because it is not in line with the demands of students who are developing today. The constructivistic learning model, where the teacher only acts as a facilitator in the learning process will allow students to act actively and feel involved in all learning activities [23, 24]. Thus, this study has provided an understanding that constructivistic approaches are more effective in reducing student stress during the learning process in the classroom.

A conducive learning atmosphere can increase students' understanding of the subject matter and reduce stress. The study's findings indicate that models of teaching and learning by teachers in the learning process reduce student stress. A learning atmosphere in which there is student involvement in the learning process in the classroom. This study only treats the school atmosphere as an independent variable in affecting bound variables, even though it is very interesting to examine other variables as moderator or mediator variables in the relationship between the two variables tested. Researchers can further consider these recommendations, for example including the optimism variable as a mediator or moderator variable in the relationship between school atmosphere and stress. Therefore, the research model with an experimental approach will be more convincing in knowing how much the contribution of the learning atmosphere to students' optimism and stress.

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