Journal Of Psychology and Social Sciences
Vol.2 No.4 2024, 163-169
Publisher: CV. Doki Course and Training
E-ISSN: 2987-2545 | P-ISSN: 2987-8551

The Effect of Listening to Slow-Tempo Classical Music on Reading Comprehension in Students

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ARTICLE INFO

Article History
Received : 2025-01-08
Revised : 2025-01-13
Accepted : 2025-01-20

Keywords
Reading Comprehension
Classical Music
Listening
Students

ABSTRACT

Reading comprehension is a critical component of the learning process, particularly for students, as it is considered a fundamental skill that must be acquired. The current study utilizes the first movement of Beethoven's "Moonlight Sonata" as an experimental condition, given its slow-tempo properties. The primary aim of the study is to investigate the impact of slow-tempo classical music on the reading comprehension abilities of university students. A between-subject randomized two-group design, post-test only research approach was utilized, with a total of 30 students participating in the study. The measurement of reading comprehension was conducted using the UTBK 2021 TPS test, with the experimental group taking the test while listening to Beethoven's "Moonlight Sonata," while the control group took the test without music. The study employs a two-tailed hypothesis and indicates that the Ha hypothesis is rejected. Therefore, it can be concluded that listening to classical music, specifically the "Moonlight Sonata 1st Movement" by Beethoven, does not have a significant effect on the reading comprehension abilities of students. However, it is recommended that students explore studying with and without music to determine their preferred method.

Introduction

Higher education is a crucial stage in an individual's development, often accompanied by the challenges of self-adjustment, especially for students coming from other cities or even abroad. Out-of-town students, particularly those enrolled in the Faculty of Science and Technology, frequently face high levels of stress in their efforts to adapt to a new environment, a competitive academic setting, and increased academic demands. In this context, this research aims to explore the role of a cognitive approach as a potential strategy to reduce the stress experienced by out-of-town students in the Faculty of Science and Technology.

Students living abroad or in different cities may need to adapt to a new environment that is significantly different from their home. This transitional period, often referred to as 'culture shock,' involves relearning social and psychological issues as they face new challenges. These challenges include encountering new teachers and friends with different values and beliefs, as well as adapting to new freedoms, opportunities, and academic, personal, and social demands (Rufaida et al., 2018). According to Santrock (2007), the transition from high school to university brings both positive and negative aspects. As Santrock (2012) notes, emerging adulthood, occurring between the ages of 18 and 25, is marked by experimentation and exploration. Generally, adults are expected to demonstrate financial independence and take responsibility for the consequences of their actions (Santrock, 2012). Out-of-town students often experience changes in various aspects of their lives. These changes include alterations in social expectations, roles, and behaviors, necessitating self-adjustment to deal with these new situations (Nadlyfah & Kustanti, 2018).

Regarding the stress experienced by out-of-town students, various emotional symptoms, as described by Selye (1976), result from the body's non-specific response to various demands. These demands can lead to stress symptoms that disrupt students' learning activities. These symptoms manifest as physical and psychological changes. Physical changes may include trembling, insomnia, palpitations, anxiety, sweating, and other similar characteristics. On the other hand, psychological changes are evident in emotional, intellectual, and interpersonal aspects. Emotional symptoms include anger, irritability, intellectual symptoms may involve forgetfulness, a cluttered mind, reduced memory, and difficulties with concentration, while interpersonal symptoms may lead to decreased trust in others and a tendency to find fault in others.

Selye's stress theory, which describes stress as the body's non-specific response to various demands, is highly relevant to out-of-town university students. Students arriving from other cities or even abroad often face diverse and unavoidable demands as they adapt to new environments and cope with increased academic pressures. The stress they experience can result in physical and psychological symptoms that disrupt their learning processes and overall well-being (Selye, 1976).

Previous research has highlighted the complexity of the self-adjustment challenges faced by out-of-town students. Factors such as feelings of loneliness, cultural changes, and academic pressures can significantly contribute to their stress levels. To assist students in managing this stress, the cognitive approach has

emerged as a promising alternative. This approach explores how individuals manage their thought patterns and emotions when confronting stressors (Selye, 1976).

The primary objective of this research is to evaluate whether the cognitive approach can effectively reduce stress levels in out-of-town students within the Faculty of Science and Technology. We will involve a sample of out-of-town students who may experience stress in various forms, including social, academic, or emotional stress. Thus, this research will provide a deeper understanding of the potential psychological interventions in helping students cope with adjustment stress.

This research is expected to make a positive contribution to the literature on the self-adjustment of out-of-town university students and cognitive interventions in the context of higher education. The research findings can offer practical guidance to institutions of higher education, particularly in the Faculty of Science and Technology, to develop more effective programs to assist students in managing their adjustment stress. Thus, this research can help out-of-town students achieve better well-being during their study periods.

This journal comprises several sections, including the theoretical framework, research methods, results and analysis, as well as discussions. We will further elaborate on each of these sections in the following text to provide a comprehensive understanding of this research's contribution to comprehending the influence of the cognitive approach in reducing stress among out-of-town students in the Faculty of Science and Technology.

Method

This research employed a pure experimental design with a randomized pretest-posttest control group design and follow-up intervention. The pretest-posttest control group design involved randomly assigning units to either the treatment group or the control group, measuring theoretically relevant variables before randomization (pretest measurements), and measuring the same theoretically relevant variables after randomization (posttest measurements) (Bonate, 2000; Shadish et al., 2002). The intervention took the form of cognitive training, employing the three-column technique, and was conducted in three sessions within one week. The research variables included the cognitive approach as the independent variable and the level of stress in students' self-adjustment as the dependent variable. The research population consisted of all students in the Faculty of Science and Technology at UIN Raden Fatah Palembang. The research sample was randomly selected from students in various study programs within the Faculty of Science and Technology. Based on screening data obtained from 30 individuals, 15 individuals

with high stress levels and 15 individuals with moderate to low stress levels were chosen. A total of 15 participants consented to join the experimental group, and 15 participants joined the control group. Roscoe (1975) suggested that the experimental sample size should range from 10 to 20 or a minimum of 15 individuals per group. The subject criteria for this research were as follows: 1) Students from the Faculty of Science and Technology living away from home who experienced stress in self-adjustment; 2) Experienced moderate to high stress levels based on the subjects' scores on the self-adjustment stress scale; 3) Had not undergone any other training during the intervention measurement process; 4) Were willing to participate in this research by signing a consent form. Data on the level of stress in self-adjustment were collected using a Self-Adjustment Stress Scale developed by the researcher based on Sarafino's four stress response types. Quantitative data analysis involved the Shapiro-Wilk test and an independent sample t-test for the experimental and control groups, revealing a reduction in self-adjustment stress in the experimental group. Additionally, qualitative data were obtained through interviews and observations of the research subjects.

Results and Discussion

After a series of research activities, it was found that the levels of stress in self-adjustment experienced by the 15 experimental and 15 control groups showed changes. Although the reduction in stress in self-adjustment varied among subjects, the results of this research indicated a significant change in the majority of subjects.

The Shapiro-Wilk test was used to assess the normality of data distribution, aiming to determine whether the data originated from a normally distributed population. In this study, the normality test employed the Shapiro-Wilk technique with the assistance of IBM SPSS Statistics 22, as shown in statistical Table 1.

Table 1
Shapiro Wilk

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Rendah	.136	5	.200*	.987	5	.967
Standardized Residual for Sedang	.167	5	.200*	.964	5	.833
Standardized Residual for Tinggi	.237	5	.200*	.961	5	.814

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

According to Hidayat (2013), the Shapiro-Wilk test is a method for calculating data distribution, which is an effective and valid normality test for small samples.

The result indicated a Sig. value > 0.05, signifying that the data was normally distributed.

Subsequently, the researcher conducted a difference analysis between the two groups in this study, i.e., the experimental group and the control group, as shown in Table 2.

Table 2
Difference Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Hasil Score	KK	15	64.2000	1.82052	.47006
	KE	15	37.6667	3.35233	.86557

From the results in Table 2, it can be observed that the Control Group (Mean = 64.2000) had high levels of Stress in Self-Adjustment, while the Experimental Group (Mean = 37.6667) had low levels of Stress in Self-Adjustment.

Furthermore, the obtained Sig. (2-tailed) value was < 0.05, indicating a significant difference between the Control Group and the Experimental Group regarding Stress in Self-Adjustment, as shown in statistical Table 3.

Table 3
Independent Sample T-Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Score	Equal variances assumed	3.611	.068	26.938	28	.000	26.53333	.98497	24.51572	28.55095
	Equal variances not assumed			26.938	21.597	.000	26.53333	.98497	24.48843	28.57824

The research results demonstrated a significant change in the levels of self-adjustment stress in the experimental group compared to the control group. These changes in the stress levels of subjects in this research were considered normal. External factors such as non-experimental variables encompassing individual factors, environmental conditions, place of residence, and even weather conditions can influence research outcomes and are beyond the researcher's control (Marliani, 2013).

This study indicates that training with a cognitive approach using the three-column technique can reduce stress in self-adjustment. Although the reduction in stress might not always be significant for every subject, interview results show that subjects perceived the benefits of participating in the training.

While this research provides valuable insights, it's important to note its limitations, including the short duration of the training, the timing of the research concurrent with exams, and the lack of control over the environment. Future research should aim to address these limitations for stronger results.

Training with the cognitive approach utilizing the three-column technique has not been widely used to reduce stress in self-adjustment, but there is research using the three-column technique that has achieved significant results. For instance, Hartati (2012) utilized the three-column technique to reduce delinquent behavior tendencies in adolescents. The goal was to help adolescents better evaluate and criticize their negative selves, thus becoming aware of negative aspects within themselves and subsequently transforming them into positive ones. The research results indicated that the three-column technique successfully reduced delinquent behavior tendencies in adolescents.

Moreover, Mayasari (2008) employed the three-column technique to reduce negative thought patterns and anger in adolescents in correctional institutions. Through the three-column technique, it was hoped that adolescents could improve their thought patterns because new thoughts could encourage adolescents not to act emotionally when addressing life issues. Adolescents who violate the law eventually face punishment and, whether they like it or not, must adjust to a new environment and new friends in prison. The research results showed that the three-column technique could reduce negative thought patterns and anger in adolescents in correctional institutions (LAPAS).

These findings align with research conducted by Lora (2016), which showed highly significant differences in stress levels in self-adjustment between the experimental and control groups. The experimental group experienced a decrease in stress levels in self-adjustment, while the control group did not.

Conclusion

Based on the analysis, the findings indicate a significant difference between the experimental and control groups, as seen in the Shapiro-Wilk Test with a Sig. > 0.05 and the Independent Sample T-Test with a Sig. (2-tailed) < 0.05. However, it should be noted that these results may be influenced by the potential interaction between subjects in the experimental and control groups. Additionally, qualitative analysis revealed that the research subjects understood and benefited from the training provided. At the posttest stage, the Experimental Group showed a 50% reduction in self-adjustment stress scores compared to the Control Group.

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