

EXPERIMENT ON THE INFLUENCE OF POP MUSIC ON IMPROVING STUDENT CONCENTRATION

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Abstract

This study aims to explore the influence of pop music on the learning concentration of students of Walisongo State Islamic University, Semarang. Concentration is a crucial element in the learning process, often influenced by the individual's environment and habits, including listening to music. This study applied the Non-Equivalent Control Group Design experiment design with a pre-test and post-test. Of the 32 participants in this study, who were selected based on purposive sampling, students were divided into experimental groups that learned while listening to pop music and control groups without music. The results of the analysis showed that both groups experienced an increase in average scores from pre-test to post-test, but the difference between the two groups was not statistically significant ($p = 0.618$) because the p value was greater than the specified significance limit ($p = <0.05$). These findings suggest that although pop music can create a more enjoyable learning atmosphere, its effect on study concentration is not significant. The implications of this study emphasize the importance of creating a supportive learning environment as well as providing recommendations for students to explore their personal learning preferences.

Keywords: Music, Concentration, Students, Experimental Psychology

Abstrak

Penelitian ini bertujuan untuk mengeksplorasi pengaruh musik pop terhadap konsentrasi belajar mahasiswa Universitas Islam Negeri Walisongo Semarang. Konsentrasi merupakan elemen krusial dalam proses belajar, sering dipengaruhi oleh lingkungan dan kebiasaan individu, termasuk mendengarkan musik. Penelitian ini menerapkan desain eksperimen Non-Equivalent Control Group Design dengan pre-test dan post-test. Partisipan penelitian ini sebanyak 32, yang dipilih berdasarkan purposive sampling, mahasiswa dibagi menjadi kelompok eksperimen yang belajar sambil mendengarkan musik pop dan kelompok kontrol tanpa adanya musik. Hasil analisis menunjukkan bahwa kedua kelompok mengalami peningkatan nilai rata-rata dari pre-test ke post-test, namun perbedaan antara kedua kelompok tidak signifikan secara statistik ($p = 0,618$) karena nilai p lebih besar dari batas signifikansi yang ditentukan yaitu ($p = <0.05$). Temuan ini menunjukkan bahwa meskipun musik pop dapat menciptakan suasana belajar yang lebih menyenangkan, pengaruhnya terhadap konsentrasi belajar tidak signifikan. Implikasi penelitian ini menekankan pentingnya menciptakan lingkungan belajar yang mendukung

serta memberikan rekomendasi bagi mahasiswa untuk mengeksplorasi preferensi belajar mereka secara pribadi.

Kata kunci: Musik, Konsentrasi, Mahasiswa, Psikologi Eksperimen

INTRODUCTION

Concentration is a fundamental aspect of the learning process that determines the extent to which a person can absorb, process, and remember information. Concentration greatly influences how a person can solve problems, both academically and in everyday life. In the context of higher education, concentration is one of the key factors influencing student learning outcomes. A student's ability to maintain sustained attention to the material presented by the instructor is crucial for understanding and academic achievement. Therefore, concentration is an essential component that cannot be overlooked in the teaching-learning process at the university level. According to Damanik, (2024) Concentration is an important factor influencing student learning outcomes, as only with good concentration can students understand complex information and store it in long-term memory. However, not all students possess optimal concentration abilities in every situation. In reality, many students experience disturbances or obstacles in concentrating during the learning process, both in the classroom and when studying independently.

Windraguri dkk., (2024) stated that many students experience difficulty concentrating, especially when they are sleepy, bored, in a hot room, or feeling other discomforts. These conditions indicate that concentration is not only influenced by internal factors such as motivation and interest in learning, but also by external factors related to the learning environment and a person's physical condition. In addition, concentration can also be influenced by high academic workload, psychological pressure, and distractions from social media or digital devices that have become an integral part of modern student life. Today's students live in a digital age full of distractions, ranging from smartphone notifications, easy internet access, to multitasking habits that interfere with their focus on learning. Therefore, it is important to understand the factors that can help students improve their concentration in the learning process. One approach that is being widely researched and used is the use of music as a concentration aid. Music has long been recognized as an auditory stimulus that can influence mood, emotions, and focus levels (Najiha & Susanti, 2023; Rohman, 2024; Yuvi & Wahyuning, t.t.). In various studies, music has been proven to have an impact on brain activity and cognitive performance. Background music, in particular, has been widely used as a strategy to create a comfortable and enjoyable learning environment, which in turn can enhance attention and concentration.

Yuliana dkk., (2020) in their study showed that background music used during the learning process affects students' concentration. This finding opens up the possibility that music not only serves as entertainment but can also be an effective tool in the teaching and learning process. One of the most popular genres of music among students is pop music. Pop music is known for its catchy melodies, engaging rhythms, and lyrics that often reflect the emotional experiences of its listeners. Nurmalisa, (2020) mentions that pop music is often chosen by students when studying because it is believed to improve

mood and make learning activities more enjoyable. Pop music with a certain tempo and intensity can create a more relaxed and focused psychological state, thereby helping students reduce stress and anxiety levels that often hinder concentration. Furthermore, pop music has simple yet appealing melodies that can help the brain remain active and alert during the learning process. However, the impact of music on concentration is not universal (Kamelia dkk., 2023; Murdiansyah, 2022; Zikri Zz, 2022).

The effect of music on concentration can vary depending on individual preferences, the type of task being performed, the volume of the music, and the background music used. Some students may feel more focused when listening to music, while others may feel distracted and unable to absorb information properly. Therefore, further research is needed to determine how music, especially pop music, affects students' concentration while studying in a more specific way. This study aims to answer these questions by examining the influence of pop music as background music on students' concentration levels while studying. This study focuses on students at Walisongo State Islamic University in Semarang as the research subjects, using an experimental approach to compare the concentration levels of students who study with pop music and those who study without music. With this experimental design, the researcher hopes to objectively identify whether there are significant differences in concentration abilities between the two groups. This study is also expected to provide insights into how music can be used as an alternative learning strategy to improve concentration, especially in facing learning challenges in the digital age full of distractions. In addition, a deeper understanding of the relationship between music preferences and learning concentration can also open new discussions in the field of educational psychology, particularly regarding personalized approaches in learning strategies.

Through the results of this study, it is hoped that students can obtain useful information on effective ways to improve their concentration while studying, including the use of music as a learning aid. For lecturers and educators, the results of this study can also be used as a reference in designing more innovative and adaptive learning methods to meet student needs. For example, in the context of online or blended learning, lecturers can consider using background music in learning videos to create a more conducive and engaging learning atmosphere. In the long term, the findings of this study can also contribute to the development of curricula and educational policies that are more responsive to the learning characteristics of today's young generation. By considering cognitive and emotional aspects in the learning process, it is hoped that learning approaches in higher education can be more humanistic and effective. This research also opens opportunities for further exploration of other music genres and their impact on psychological variables such as learning motivation, self-control, and academic stress. As part of efforts to create an optimal learning environment, it is important to continue seeking and developing learning strategies that can support improvements in student academic quality.

Music, as part of popular culture that is closely related to students' lives, has great potential to be utilized more widely in the context of education. Therefore, this study is not only relevant from an academic perspective but also has broad practical implications

for improving the quality of education at the university level. Through a data-driven and empirical analysis approach, this study aims to provide a comprehensive overview of the role of pop music in influencing students' learning concentration. Thus, the results of this study are expected to serve as a valid and reliable reference for future researchers interested in exploring similar topics, as well as a starting point for the development of more creative, effective, and enjoyable learning models. Furthermore, the results of this study are also expected to stimulate students' awareness of learning strategies that are appropriate for their learning styles, including the use of music as a learning support medium. In an increasingly complex and dynamic educational environment, the ability to maintain focus and concentration is a crucial asset. Therefore, any efforts that can help students enhance these abilities deserve serious exploration, including unconventional approaches such as the use of pop music as background music during learning.

METHOD

This study uses a quantitative approach to objectively evaluate the impact of pop music on students' concentration. The design applied is a Non-Equivalent Control Group Design with pre-test and post-test, where subjects are divided into two groups: an experimental group that listens to pop music during the learning process, and a control group that does not receive any music treatment. The total number of research subjects was 32 students from Walisongo State Islamic University, divided into two groups of 16 students each. The sampling method used was purposive sampling. Purposive sampling is a technique of determining samples that are deliberately selected by researchers based on certain criteria Creswell, (2015). The criteria included active students who were willing to participate in the experiment and had no hearing impairments. The research procedure began with a pre-test to measure the level of understanding of both groups before the treatment. After that, both groups were given the same material to study, where the experimental group listened to pop music, while the control group studied without music. After the treatment, a post-test was conducted to measure the level of understanding of each group regarding the material that had been studied.

The measurement was carried out using a Quizizz-based evaluation tool, with multiple-choice questions consisting of 10 questions and 5 true-false questions. The final score was calculated based on the percentage of correct answers, and the results of the two groups were compared to see the effect of pop music on concentration. Data analysis included a normality test using the Shapiro-Wilk test to determine data distribution, as well as a homogeneity test using the Levene test to ensure that the variances of the two groups were homogeneous. Hypothesis testing was conducted using an independent sample T-test to analyze significant differences between the control and experimental groups. Through this method, the study aims to provide empirical evidence regarding the effect of pop music on student concentration, as well as contribute to the development of more effective learning methods.

RESULT AND DISCUSSION

Descriptive Test

Table 1. The results of the descriptive test analysis

	Pretest	Posttest	Pretest (2)	posttest (2)
Mean	56.7	87.9	47.9	77.0
Std error mean	3.53	2.03	3.71	3.06
Median	53.0	87.0	50.0	80.0
Mode	47.0	87.0	53.0	80.0
Standard deviation	14.1	8.14	14.8	12.2
Minimum	40	73	20	53
Maximum	80	100	73	100

Based on the data, this study showed the performance of two groups of students, where the experimental group learned with pop music accompaniment while the control group learned without musical accompaniment. Each group consists of 16 students, and for the measurement of concentration levels is measured through pre-tests and post-tests using questions accessed through Quizizz. During the pre-test, the scores in the experimental group increased from 56.7 to 87.9 at the post-test, with a decrease in standard deviation from 14.1 to 8.14, indicating more consistent results after the intervention. The control group itself also experienced an increase in the score, with an initial average of 47.9 in the pre-test to 77.0 at the post-test with the standard deviation decreasing from 14.8 to 12.2.

Test classic assumptions

Normality Test

Table 2. Results of the Normality Test

	Pretest	Posttest	Pretest (2)	posttest (2)
N	16	16	16	16
Shapiro-Wilk W	0.896	0.923	0.974	0.952
Shapiro-Wilk p	0.069	0.190	0.900	0.530

For the pre-test data, a W value of 0.896 was obtained with a P value of 0.069. Meanwhile, the post-test data obtained a W value of 0.923 with a P value of 0.190. Since the P-value > 0.05 in both tests, it can be concluded that the data in the experimental group are normally distributed. In the pre-test data (2), the control group obtained a W value of

0.974 with a P value of 0.900. Meanwhile, the post-test data (2) obtained a W value of 0.952 with a P value of 0.530. Since the P-value was > 0.05 in both tests, it can be concluded that the data in the control group were normally distributed.

Thus, the data in the experimental group and the control group meet the assumption of normality.

Homogeneity Test

Table 3. Results of data analysis of the Homogeneity Test (Lavene's)

	F	df	df2	p
Difference	1.28	1	30	0.267

The results of the homogeneity test using the Jamovi application, obtained a significant value of 0.267 and $P > 0.05$ or $0.267 > 0.05$, and from this it can be concluded that the data of the difference between pre-test and post-test values in the experimental group and the control group is the same or homogeneous. The difference between pre-test and post-test data in the experimental group and the control group met the homogeneity assumption.

Uji Hypothesis

Table 4. Results of Independent Samples T-Test data analysis.

		Statistic	df	p
Difference	Student's t	0.503	30.0	0.618

In this study, the hypothesis test was aimed at measuring the influence of pop music on concentration. H0 stated that there was no significant effect between listening to pop music and increasing students' concentration while studying. Meanwhile, H1 stated that there is a significant influence of listening to pop music can increasing students' concentration while studying. The results of the hypothesis data processing obtained a P value of 0.618. So, based on the $p > p\text{-value}$ obtained, $p > 0.05$, this shows that the hypothesis of one of these studies is rejected. It can therefore be concluded that there was no significant difference between the control group and the experimental group. This shows that the observed concentration cannot be significantly associated with exposure to pop music. Pop music was not a significant part of or thing that influenced this experiment.

DISCUSSION

The results of this study show findings related to the influence of pop music as a background in learning situations. On the one hand, the quiet learning conditions were shown to support concentration better compared to the group that studied with pop music. These findings are consistent with previous research Silaen dkk., (2023), which shows

that a quiet learning environment helps reduce distractions, so that individuals can focus more on the task at hand. However, on the other hand, although the difference in scores between the two groups was not statistically significant ($p = 0.618$), there was an improvement in scores on the post-test for the group that studied with pop music. This suggests that pop music has a potential influence on mood or motivation to learn, even if its effect on concentration is not particularly strong or consistent. Pop music, with its energetic beats, can help create a more enjoyable and stimulating atmosphere, which may be useful for some individuals. These findings are in line with the research of Qalbina dkk., (2025), which stated that the digital generation tends to be used to multitasking, including learning while listening to music. On the other hand, the absence of significant influence from pop music is also supported by previous research showing that background music, especially those with lyrics, can be a source of cognitive distraction (Sabina Muntasya, 2024). Music with lyrics can interfere with the process of thinking and remembering, especially on tasks that require high concentration. These results are also in line with the findings of Oktaviani, (2023), who stated that the effects of music on concentration often depend on the context of the individual's tasks and habits.

Overall, although pop music did not have a significant impact on concentration in the study, it did not completely negate the benefits of music in learning. Positive effects may be more noticeable in the emotional aspect, such as creating a more relaxed and pleasant atmosphere. Meanwhile, quiet conditions remain a better choice for tasks that require a high level of concentration (Firman, 2024; Haque dkk., 2020; Iqbal dkk., 2024). The combination of individual preferences and the type of task at hand may be a key factor in determining the effectiveness of music in supporting the learning process. This study implies that the influence of pop music on the increase in student concentration has several important implications. In education, the results of Adyla Syukrhaini Marwi dkk., (2023) research show that background music used during the learning process has a positive influence on students' learning concentration. This supports the potential use of pop music as a tool to improve focus on learning, both individually and in classroom activities, such as discussions or assignments.

However, this study also has limitations in considering other factors that may also affect student concentration, such as the lack of conduciveness of the room at the time of material delivery, environmental influences, personal preferences, and emotions. These factors can affect the level of student concentration. In a study by Izzah, (2020), it was found that classes with high noise can reduce the level of learning concentration of students compared to classes with low noise levels. This can indicate that noise levels can affect study concentration. Therefore, further research should consider these factors to get maximum results

CONCLUSION

This study aimed to evaluate the effect of listening to pop music on students' concentration while studying, by comparing the performance between the experimental group (who learned to the accompaniment of pop music) and the control group (who learned without the accompaniment of music). The results of the descriptive analysis showed that both groups experienced an increase in average scores from pre-test to post-

test. The experimental group showed an increase from an average of 56.7 at the pre-test to 87.9 at the post-test, with the standard deviation decreasing from 14.1 to 8.14, indicating more consistent results after the intervention. Meanwhile, the control group increased from an average of 47.9 to 77.0, with the standard deviation decreasing from 14.8 to 12.2. Although both groups showed significant improvements individually, the results of the hypothesis test showed that there was no significant difference between the two groups, with a p value of 0.618 ($p > 0.05$).

The classical assumption test showed that the data from both groups met the criteria of normality and homogeneity, so further statistical analysis could be validly performed. However, the results of the hypothesis test support the zero hypothesis (H_0), which states that listening to pop music has no significant effect on student concentration. This suggests that learning in quiet conditions provides better concentration performance, as seen from the higher average scores in the control group. These findings are in line with previous research that confirms that a calm and distraction-free learning environment is more supportive of students' concentration skills.

However, although the difference between the experimental and control groups was not statistically significant, the increase in average scores in the experimental group showed that pop music still had the potential to create a more enjoyable and dynamic learning atmosphere. The fast, rhythmic rhythm of pop music can provide a certain stimulating effect for students, although the impact on concentration tends to be inconsistent or significant. Overall, this study indicates that learning conditions with minimal distractions, such as learning in quiet conditions, are more effective in supporting academic performance. However, pop music can still be considered to create a more interesting learning atmosphere, especially for students who are used to learning while listening to music.

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