The Effect of Project-Based Learning Involving Percussion Instruments on the Self-Confidence of Fourth-Grade Elementary School Students

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Abstract

This study aimed to determine the effect of percussion instrument instruction based on Project-Based Learning (PBL) on the self-confidence of fourth-grade elementary school students. The results indicate that the experimental group experienced an increase in their mean self-confidence score, from 51.16 in the pre-test to 53.28 in the post-test. The Wilcoxon test yielded a significance value of 0.016 ($p < 0.05$), indicating a significant difference before and after the intervention. In the control group, the mean score increased from 52.64 to 54.92; however, this increase was not statistically significant, with a significance value of 0.068 ($p > 0.05$). The Mann-Whitney test resulted in a significance value of 0.423 ($p > 0.05$), showing no significant difference between the final outcomes of the two groups. Thus, while percussion instrument instruction based on Project-Based Learning led to positive changes in the self-confidence of students in the experimental group, this method has not been proven to be statistically superior to the approach used with the control group.

Keywords: *Project-Based Learning, Percussion Instruments, Self-Confidence, Elementary School Students.*

A. INTRODUCTION

Education serves as a vital instrument for the holistic development of a student's potential. Through the educational process, students are expected to cultivate the intellectual abilities, skills, attitudes, and character traits necessary for life. This aligns with the mandate of Law Number 20 of 2003, Chapter 2, Article 3, concerning the National Education System, which states that "education aims to develop the potential of learners to become individuals who possess faith and piety toward God Almighty, exhibit noble character, are healthy, knowledgeable, creative, and independent, and function as democratic and responsible citizens" (National Education System, 2003). Based on this objective, education emphasizes not only the mastery of knowledge but also the formation of a student's learning character.

Developing a student's learning character is a long-term process that must begin at an early age to ensure that, in the future, students can attain the desired learning character. This development should commence at the primary education level, which serves as the fundamental base for fostering a student's full potential consistent with the mandate of the 2003 National Education System Law mentioned previously (National Education System, 2003). In the context of the educational process, the school community must strive to help students reach their full potential

across three domains: cognitive, affective, and psychomotor. One subject that can serve as a vehicle for achieving this is the study of arts and culture.

As part of the curriculum implementation in primary schools, the study of arts, culture, and crafts plays a vital role in developing students' capacity for self-expression, creativity, and artistic appreciation. This aligns with Article 3 of Law Number 20 of 2003, which states that the goal of national education is to develop students' potential so that they may become creative individuals underscoring that creativity is an essential component of education. Music education, as a branch of arts education, provides students with opportunities to express their ideas, feelings, and experiences through various musical activities. Therefore, music instruction should be designed to be active and meaningful, fostering the development of creativity while simultaneously building students' self-confidence throughout the learning process.

In essence, education exists to develop human potential in its entirety. The progressive education perspective emphasizes that learning should be student-centered, offering authentic learning experiences through activities that require active student participation. In the context of music education, students must be given space to explore, express themselves, and create, allowing them to hone their creative abilities and cultivate the courage to showcase their work. Music education serves not merely as a means to master musical skills, but also as a medium for developing a student's personality, including their creativity and self-confidence.

Creativity is an individual's ability to produce new and useful ideas, concepts, or works. It can flourish when students are given the opportunity to explore ideas, experiment with various possibilities, and create works either independently or in groups throughout the learning process. Meanwhile, self-confidence is a firm belief in one’s own abilities, empowering an individual to express their ideas, opinions, and skills in front of others. Both aspects are crucial, as students are expected to have the confidence to perform and articulate their musical ideas.

In the context of music education in elementary schools, instructional practices often remain conventional, offering students limited opportunities to engage actively in the creation of musical works. This aligns with observations conducted between February 24 and March 3, 2026, at SDN 1 Cijengkol. A teacher-centered approach often results in students primarily receiving information rather than exploring their own capabilities. Consequently, students' creative potential and self-confidence within music education have not developed optimally. This is evidenced by the fact that students' work tends to be identical to the examples provided by the teacher. Supporting documentation is attached.

Based on an interview with the classroom teacher on February 27, 2026, it was identified that one of the challenges in music education at the school is the limited availability of musical instruments. Furthermore, there is an issue regarding a lack of self-confidence among the students; observations conducted on March 3, 2026, revealed that students tend to be reluctant to participate in arts-related competitions. Moreover, when asked to come to the front of the class to present their work, students

often feel embarrassed 83% of them are hesitant to showcase their creations in front of their peers. This indicates a very low level of self-confidence.

To address these issues, the researcher proposes a solution. One approach to music instruction that can foster both creativity and self-confidence is the use of percussion instruments. Percussion instruments are relatively easy for elementary school students to play, as they do not require complex technical skills. By playing percussion instruments in groups, students can learn to create simple rhythmic patterns, collaborate with their peers, and perform their musical work in front of the class. Such activities have the potential to develop musical creativity while simultaneously boosting the students' courage to express themselves. In the context of developing student creativity, an effective pedagogical approach to implement is the Project-Based Learning (PjBL) model.

The Project-Based Learning (PjBL) model can be applied in music education through projects that involve creating and performing simple musical pieces using percussion instruments. Such activities encourage students to collaborate, develop creative ideas, and present their work before their peers a process that fosters both creativity and self-confidence.

Self-confidence is crucial for personal development, particularly within educational and social contexts. It shapes an individual's attitudes and behaviors, as well as their capacity to navigate various challenges. According to Brian Adam, self-confidence is a positive evaluation of oneself a way of perceiving one's own self (Adam, 2021). Thus, self-confidence reflects a positive attitude toward oneself, manifested in how an individual views their own abilities and worth; consequently, it should be treated as a top priority.

Self-confidence is a vital psychological component for achieving success in various aspects of life, especially in the realm of education. It influences how individuals perceive themselves, make decisions, and act when faced with difficulties or opportunities. This perspective aligns with the views of Mohammad Mustari, who defines self-confidence as the belief that one possesses the ability to act toward the achievement of specific goals, coupled with the conviction that one's level of performance can influence events in one's life (Mustari, 2019).

B. METHOD

This study employs a quantitative approach using an experimental method. A quantitative approach was selected because the research focuses on collecting numerical data, which is subsequently analyzed statistically to test hypotheses (Creswell & Creswell, 2018; Widia, 2025). The experimental method aims to determine causal relationships between variables by applying specific treatments under controlled conditions (Sugiyono, 2019).

The research design utilized is a quasi-experimental, "nonequivalent pretest-posttest control group design." This design involves two groups: an experimental group and a control group. Both groups undergo a pre-test before instruction and a post-test after instruction to assess changes in the students' self-confidence. The

experimental group receives instruction in percussion instruments based on the Project-Based Learning model, while the control group undergoes instruction without the application of this model. This design was chosen based on existing classroom structures, meaning that the research subjects were not selected through random selection (Sugiyono, 2019; Syaiful, 2024).

The population for this study consists of fifth-grade elementary school students, with a sample of 50 students drawn from SDN 1 Cijengkol and SDN 1 Caringin. Sampling was conducted using a purposive sampling technique a method of selecting participants based on specific considerations and criteria aligned with the research objectives (Sugiyono, 2019).

Data collection was carried out using a non-test technique in the form of a questionnaire designed to measure the students' level of self-confidence. The questionnaire was administered to both groups before and after the intervention. The data obtained were then processed and analyzed statistically to determine changes in the students' self-confidence levels, as well as any differences in outcomes between the experimental group and the control group.

C. RESULTS AND DISCUSSION

This study aims to determine the effect of percussion instrument instruction based on Project-Based Learning on the self-confidence of fourth-grade elementary school students. The study involved two groups: an experimental group that received percussion instrument instruction based on Project-Based Learning, and a control group that received instruction without this approach. Student self-confidence was measured using questionnaires administered before and after the instruction (pre-test and post-test). The collected data were then analyzed to identify changes in students' self-confidence following the instruction and to examine differences in outcomes between the two groups.

Normality test results indicated that the research data were not normally distributed, as the significance values were less than 0.05. Consequently, hypothesis testing was conducted using non-parametric statistical methods specifically, the Wilcoxon test and the Mann-Whitney test. The Wilcoxon test was used to assess differences in students' self-confidence scores before and after the instruction within each group, while the Mann-Whitney test was used to determine differences in outcomes between the experimental group and the control group.

The Wilcoxon test results for the experimental group show an Asymptotic Significance (2-tailed) value of 0.016. Since this value is less than the significance level of 0.05, it can be concluded that there is a significant difference in students' self-confidence scores before and after the intervention. An analysis of the ranks indicates that 16 students experienced an increase in scores (positive ranks), 6 students experienced a decrease (negative ranks), and 3 students showed no change in their scores. These findings suggest that the majority of students in the experimental group experienced an increase in self-confidence after participating in percussion instrument instruction based on a Project-Based Learning (PBL) approach. The mean score also

rose from 51.16 in the pre-test to 53.28 in the post-test, reflecting a positive shift in the students' self-confidence following the intervention.

The increase in self-confidence within the experimental group can be attributed to the characteristics of Project-Based Learning, which provides students with opportunities to engage actively in the learning process. Through projects that involve creating and playing percussion instruments, students do not merely receive information from the teacher; rather, they gain learning experience through direct involvement in completing tasks. Such activities allow students to demonstrate their abilities, share ideas, collaborate with peers, and present the projects they have completed. These experiences help students develop a stronger belief in their own capabilities.

Learning to play percussion instruments provides students with an opportunity for self-expression through musical activities. Engaging in musical performances whether individually or in groups allows students to showcase their abilities and participate in collaborative endeavors. The processes of practicing, delegating tasks, and presenting the final project can foster greater self-confidence in students when demonstrating their skills before others. Furthermore, such activities help cultivate the courage to participate, express opinions, and present their work in front of their peers.

The Wilcoxon test results for the control group yielded an Asymptotic Significance (2-tailed) value of 0.068. Since this value exceeds the significance level of 0.05, it can be concluded that there is no statistically significant difference in the students' self-confidence scores before and after the instruction in the control group. The mean score for the control group increased from 52.64 to 54.92; however, this increase does not represent a statistically significant change. These findings indicate that the change in the self-confidence levels of students in the control group was not substantial enough to be considered significant according to the Wilcoxon test.

The Mann-Whitney test results for the post-test scores of both groups show a Mean Rank of 23.86 for the experimental group and 27.14 for the control group. The obtained Asymptotic Significance (2-tailed) value is 0.423. Since this value is greater than the significance level of 0.05, it can be concluded that there is no statistically significant difference in the final self-confidence scores between students in the experimental group and those in the control group. These findings indicate that the increase in self-confidence observed in the experimental group does not represent a significant difference when compared to the control group.

Based on the overall analysis, instruction in percussion instruments using a Project-Based Learning approach resulted in positive changes in the self-confidence of students in the experimental group. This is evidenced by an increase in the mean score from 51.16 to 53.28, as well as the results of the Wilcoxon test, which yielded a significance value of 0.016. The control group did not show a significant change, with a Wilcoxon test significance value of 0.068. The Mann-Whitney test yielded a significance value of 0.423, indicating no significant difference between the final outcomes of the two groups. Thus, although the implementation of Project-Based

Learning in percussion instruction fostered positive changes within the experimental group, this approach has not been statistically proven to be more effective than the instructional approach used for the control group.

D. CONCLUSION

Based on research findings regarding the impact of Project-Based Learning (PBL) in percussion instrument instruction on the self-confidence of fourth-grade elementary school students, it can be concluded that this approach led to positive changes in the self-confidence of students in the experimental group. This is evidenced by an increase in the mean questionnaire score, from 51.16 in the pre-test to 53.28 in the post-test. The Wilcoxon test yielded a significance value of 0.016 ($p < 0.05$), indicating a significant difference in students' self-confidence scores before and after the intervention.

In the control group, the mean score was 52.64 in the pre-test, increasing to 54.92 in the post-test. The Wilcoxon test for this group resulted in a significance value of 0.068 ($p > 0.05$), indicating no significant difference in students' self-confidence scores before and after the instruction. The Mann-Whitney test yielded a significance value of 0.423 ($p > 0.05$), indicating no significant difference between the post-test scores of the experimental group and the control group. Thus, although the experimental group showed a significant score increase according to the Wilcoxon test, it cannot be concluded that Project-Based Learning in percussion instruction provides a statistically superior impact on students' self-confidence compared to the instruction received by the control group.

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