

INTEGRATION OF AI-BASED INQUIRY BASED LEARNING MODEL IN CULTURAL ARTS EDUCATION ON APPRECIATIVE ATTITUDES AND TRADITIONAL MUSIC SKILLS

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Article Info	Abstract
Article History Received: August 2025 Revised: September 2025 Accepted: October 2025 Published: October 2025	<i>This study aims to explore the effect of the Artificial Intelligence (AI)-based Inquiry Based Learning (IBL) model on appreciative attitudes towards traditional music and traditional music skills among language learners. This study used a quasi-experimental design with a non-equivalent control group design. The research sample consisted of 60 language learners divided into two groups: an experimental group that used the AI-based IBL learning model and a control group that followed conventional learning. The data were analysed using multivariate analysis of variance (MANOVA) to test the effect of the learning model on the two dependent variables. The findings indicate that the AI-based IBL model has a significant effect on both dependent variables. The experimental group experienced a greater increase in appreciative attitudes and traditional music skills compared to the control group. These findings suggest that the application of AI in arts education can increase student engagement and learning outcomes. In addition, the use of AI in the IBL model allows for instant feedback, which accelerates learning and improves students' practical skills. This study has significant pedagogical implications, showing that AI-based technology can transform the way arts learning is conducted by creating a more personalised and adaptive learning experience. These findings contribute to the development of technology-based education, particularly in the context of traditional music learning, and open up opportunities for the wider use of smart technology in arts education in the future.</i>
Keywords Inquiry based learning; Artificial intelligence; Appreciative attitudes; Traditional music skills;	
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INTRODUCTION

The transformation of 21st-century education demands the integration of technology and pedagogy across all subjects, including arts and culture education (Pavlou, 2020). Learning approaches that emphasize active engagement, problem-solving, and the use of intelligent technologies are becoming increasingly relevant. Arts education, which has traditionally been more demonstrative and expository in nature, is now required to foster meaningful exploratory and reflective processes. This aligns with the spirit of the Merdeka Curriculum, which positions students as active agents in the learning process (Ankyiah & Bamfo, 2023; Evaniuck & Shaughnessy, 2019; Mamvuto & Kangai, 2021; Zhao, 2024). However, various studies indicate that arts education in schools still tends to focus on memorization and repetition, providing limited opportunities for critical thinking and creative expression (Ankyiah & Bamfo, 2023; Chiu & Hwang, 2024; Lukaka, 2023). Moreover, the dimension of appreciative attitudes toward traditional arts is often overlooked, despite being a crucial foundation for preserving cultural heritage (Chen, 2020; Liping, 2020; Setyawan & Dopo, 2020).

The Inquiry Based Learning model is an instructional approach that offers substantial potential in promoting exploration, reflection, and active student engagement in arts education. Inquiry Based Learning encourages students to ask questions, investigate, test hypotheses, and construct their own knowledge through direct experience (Pedaste et al., 2015; Sam, 2024; Uum et al., 2016). This approach is consistent with constructivist theory, which emphasizes the importance of social learning and knowledge construction based on authentic experiences. In the context of arts and culture education, this model provides opportunities for students to explore symbolic meanings, cultural values, and personal expression through reflective and collaborative processes (Bippus & Gaspar, 2019; Costes-Onishi et al., 2020; Moreno, 2021). Nevertheless, the implementation of Inquiry Based Learning in arts classrooms remains limited, mainly due to constraints of time, resources, and teacher readiness (Bertling, 2019; H., 2024; Sam, 2024).

Along with the rapid advancement of technology, the integration of Artificial Intelligence in education has emerged as a global phenomenon that offers new opportunities for designing more personalized and adaptive learning. Artificial Intelligence enables learning systems to provide instant feedback, adjust content according to individual needs, and support data-driven evaluation processes in real time (Hua, 2024; Southgate, 2021). In the context of arts education, Artificial Intelligence technology can be utilized to observe, analyze, and evaluate students' musical performances objectively, as well as to provide developmental suggestions based on sound and motion analytics (Hu, 2021; Wang & Sun, 2024). The use of Artificial Intelligence has also been proven to increase learning engagement, particularly among digital-native generations who are accustomed to technology-based interactions (Zhang et al., 2021). Therefore, incorporating Artificial Intelligence into inquiry-based learning models represents a strategic opportunity to transform arts education from a static approach into a more dynamic and participatory learning process.

One of the main challenges in arts education in schools is the low level of students' appreciative attitudes toward traditional music. Many students do not understand the aesthetic, historical, and philosophical values of traditional music, and therefore tend to perceive it as outdated and irrelevant (Bussey & Ruskovic, 2003; Hodsoll, 1985; Musneckienė, 2014). In fact, traditional music plays an essential role in shaping cultural identity and national character. Traditional music fosters a sense of togetherness and group identity through shared experiences, whether in learning, performance, or ritual. This process cultivates a sense of belonging, pride, and attachment to one's own culture (Guan et al., 2024, 2024; Kashina & Tagiltseva, 2022; J. Liu et al., 2024; Popławska, 2020; Tuyll & Purdy, 2017). An appreciative attitude cannot be developed instantly; rather, it must be nurtured through direct experience, deep reflection, and meaningful engagement with artistic works (Bube, 2020; Fernandes, 2024). In this regard, Inquiry Based Learning supported by Artificial Intelligence has the potential to provide reflective and interactive stimuli that encourage curiosity, cultural empathy, and the ability to evaluate aesthetically and critically.

On the other hand, traditional music skills as a psychomotor aspect also remain a challenge in arts and culture education in schools. Many students struggle to play traditional musical instruments because instruction is often one-directional and provides limited opportunities for hands-on practice (Cope, 2005; Julia et al., 2019). In fact, musical skills can only be developed through exploratory processes, contextual repetition, and timely feedback (Coss, 2019; Moreira & Carvalho, 2010b, 2010a). The integration of Artificial Intelligence can assist teachers in conducting performance assessments more efficiently, providing practice recommendations based on common errors, and enabling students to record and review their own performances independently (Li & Wang, 2023; Yue & Jing, 2025). Thus, the Inquiry Based Learning approach supported by Artificial Intelligence has the potential to create a learning ecosystem that fosters autonomous and well-directed skill development.

Several previous studies have examined the effectiveness of the Inquiry Based Learning model in improving learning outcomes, but most of them have primarily focused on science and literacy subjects (Costes-Onishi & Kwek, 2022; Iglesias & Tejada, 2024; Meng et al., 2024; Sindberg, 2016; M. Zhang et al., 2025). Research related to the integration of Artificial Intelligence in learning has also been widely found in the contexts of mathematics, language, and STEM education (Bailey & Williams, 2025; Hamal et al., 2022; Leong et al., 2025; Murdan, 2024; Zheng, 2024). Unfortunately, studies that integrate Artificial Intelligence into the Inquiry Based Learning model within the context of arts and culture education, particularly traditional music, remain very limited. This constitutes the basis for the importance of this study, as it seeks to address this gap in the literature while simultaneously responding to the challenges of arts education in the digital era.

Based on the foregoing discussion, this study aims to examine the influence of implementing the Inquiry Based Learning model supported by Artificial Intelligence in arts and culture education on students' appreciative attitudes and traditional music skills. Specifically, this research investigates whether the application of this model significantly enhances these two learning outcomes compared to conventional models. The results of this study are expected to provide theoretical contributions to the development of contextual technology-based learning approaches, as well as practical contributions for teachers and educational institutions in implementing innovative strategies that align with the characteristics of today's learners. In addition, this study reinforces the relevance of arts education as a medium for shaping national identity and character that remain adaptive to the dynamics of the times. In the context of globalization and the digital disruption era, the preservation of traditional music does not solely depend on artists but also on educational systems capable of fostering students' appreciation and skills in cultural heritage. The integration of intelligent technology into the pedagogical approach of Inquiry Based Learning constitutes a strategic response to ensure that arts education does not lose its essence but instead becomes stronger in addressing the needs of the era.

RESEARCH METHOD

Research Design

This study employed a quantitative approach with a quasi-experimental method and a Non-equivalent Control Group Design. The primary objective of this research was to examine the influence of the Inquiry Based Learning model supported by Artificial Intelligence on students' appreciative attitudes and traditional music skills in arts and culture education. Within this design, two equivalent classes at the same grade level were purposively selected. One class was designated as the experimental group, which received instruction through the Inquiry Based Learning model integrated with Artificial Intelligence technology. Meanwhile, the other class served as the control group, which received arts and culture education through conventional teaching methods commonly implemented by teachers in the classroom.

The treatment in the experimental group was conducted over six weeks, with one session held each week. Each session was structured according to the syntax of the Inquiry Based Learning model, which was integrated with Artificial Intelligence in the learning process through digital platforms and applications capable of providing instant feedback on students' musical performance and conceptual understanding. To maintain the internal validity of the design, both groups were taught by the same teacher, using equivalent instructional materials based on the learning outcomes specified in the arts and culture curriculum. Thus, the differences in learning outcomes obtained can be directly attributed to the instructional treatment rather than other factors such as differences in teachers or learning materials.

Population and Sample

The population in this study consisted of all students in the Language Learners classes, namely Language Learners 1 (30 students), Language Learners 2 (36 students), Language Learners 3 (34 students), and Language Learners 4 (30 students). The research sample was taken from two classes out of a total of four available classes, namely Language Learners 1 as the experimental class and Language Learners 4 as the control class. Each class consisted of 30 students, resulting in a total sample of 60 students. The sampling was determined using purposive sampling, taking into consideration the equivalence of initial abilities and the proportional distribution of students. One class was assigned as the experimental group, whose students received instruction through the Inquiry Based Learning model supported by Artificial Intelligence, while the other class served as the control group, whose students received instruction through conventional methods.

Instruments

The instrument used to measure traditional music skills employed an assessment sheet developed based on the aspects of rhythm, expression and dynamics, sound, and playing technique. The rubric for assessing traditional music skills in this study is presented as follows.

Table 1
Rubric for Assessing Traditional Music Skills

No.	Indicators	Skor				
		1	2	3	4	5
1.	Accuracy of Rhythm	Unable to follow the rhythm at all	Frequently deviates from the correct rhythm	Fairly good, with minor deviations	Follows the rhythm well	Very precise and stable in following the rhythm
2.	Expression and Dynamics	No visible expression or dynamics	Very limited and monotonous expression	Adequate expression and dynamics, but inconsistent	Good and consistent expression and dynamics	Very strong, profound, and flowing expression and dynamics throughout the performance
3.	Sound Quality	Sound is unclear or inaudible	Sound is inconsistent or poor	Sound is fairly clear, but with technical errors	Sound is reasonably clear with only minor errors	Sound is clear and excellent throughout the performance
4.	Playing Technique	Unable to hold or play the instrument correctly	Playing technique is often incorrect or inappropriate	Playing technique is fairly good, but with some shortcomings	Playing technique is good and accurate, with only minor mistakes	Playing technique is excellent and fully aligned with proper standards

To measure appreciative attitudes, a Likert scale questionnaire was employed, which was developed based on affective indicators within Bloom's taxonomy domain (Bloom & Krathwohl, 1956; Krathwohl, 2002) and referred to the indicators of artistic appreciation attitudes proposed by Sedyawati (2015), namely awareness, comprehension, and appreciation of the values of local arts and culture.

Table 2
Appreciative Attitude Assessment Instrument

No.	Indicators	Sub-Indicators	Total Item
1.	Receiving	1. Demonstrating attention when listening to traditional music 2. Recognizing the existence of traditional music as part of local culture	4
2.	Responding	1. Participating in traditional music activities at school 2. Providing positive responses to traditional music performances	4
3.	Valuing	1. Feeling proud of one's own regional music 2. Considering traditional music to have its own beauty	6
4.	Understanding Meaning	1. Understanding the meaning and messages contained in traditional songs 2. Knowing the cultural values embedded in traditional music	5
5.	Characterizing Values	1. Considering traditional music as part of one's cultural identity 2. Encouraging others to appreciate traditional music	6
Total			25

Data Analysis

Data analysis in this study was carried out quantitatively with the aim of examining the influence of the Inquiry Based Learning model supported by Artificial Intelligence on two dependent variables, namely students' appreciative attitudes toward traditional music and their traditional music skills. The analysis was conducted with the assistance of SPSS Statistics 27 software and followed systematic stages as described in this study. The initial stage of the analysis began with descriptive statistics to obtain a general overview of the data. The results of descriptive statistics were used to identify the overall tendencies of students' scores and served as the basis for initial comparisons prior to conducting inferential analysis. Before performing the Multivariate Analysis of Variance (MANOVA), a series of statistical assumption tests was carried out to ensure that the data met the requirements for multivariate parametric analysis. The normality test was conducted for each dependent variable in both groups using the Kolmogorov-Smirnov test. The data were considered normally distributed if the significance value (p-value) was greater than 0.05. To examine whether the variances between the experimental and control groups were equal, Levene's Test was performed for each dependent variable. If the significance value was greater than 0.05, the variances were considered homogeneous, and the assumption was met.

After all assumptions were met, a Multivariate Analysis of Variance was conducted to determine whether the learning model had an effect on the two dependent variables simultaneously. The results of the Multivariate Analysis of Variance were considered significant if the significance value (p-value) was less than 0.05. This significance indicated that the Inquiry Based Learning model supported by Artificial Intelligence had a simultaneous effect on students' appreciative attitudes and traditional music skills. Through this systematic analytical procedure, the study is expected to provide a comprehensive and valid overview of the effectiveness of the Inquiry Based Learning model supported by Artificial Intelligence in enhancing students' appreciative attitudes and traditional music performance skills. Beyond strengthening the theoretical contributions in the field of technology-based arts education, this analysis also provides a strong empirical foundation for pedagogical innovation in the digital era.

RESEARCH FINDINGS AND DISCUSSION

Data Description

The descriptive statistics presented in this study include the variables of appreciative attitudes and traditional music skills. The descriptive statistics cover the mean scores and standard deviations for each variable in both the experimental group and the control group. These results provide an initial overview of the data distribution, the general tendencies of students' scores, and the differences between the two groups, which serve as the basis for comparison in the subsequent inferential analysis. Thus, the descriptive statistics constitute the first step in evaluating the effectiveness of the learning model applied in this study.

Table 3
Descriptive Statistics

Class		Mean	Std. Deviation	N
Appreciative_Attitude	Eksperimen	82,07	8,800	30
	Kontrol	72,20	7,058	30
	Total	77,13	9,344	60
Traditional_Music_Skills	Eksperimen	77,33	11,427	30
	Kontrol	65,83	12,463	30
	Total	71,58	13,196	60

Based on the data presented, there were significant differences between the experimental and control groups in both measured variables. In terms of appreciative attitudes toward traditional music, the experimental group obtained a mean score of 82.07, which was higher than the control group's mean score of 72.20. This finding indicates that the Inquiry Based Learning model supported by Artificial Intelligence enhanced students' positive attitudes toward traditional music. The standard deviation of the experimental group (8.800) was smaller than that of the control group (7.058), suggesting that the attitudes of students in the experimental group were more concentrated around the higher mean score. With regard to traditional music skills, the experimental group also demonstrated a higher mean score (77.33) compared to the control group (65.83), indicating that the Artificial Intelligence-based learning model had a positive effect on improving traditional music skills.

Tests of Normality

Based on the results of the normality test presented in the table, all significance values (p-values) for both the experimental and control groups on the two dependent variables appreciative attitudes toward traditional music and traditional music skills were greater than 0.05. Specifically, for the appreciative attitude variable, the p-value for the experimental group was 0.135, while the control group obtained 0.076. For the traditional music skills variable, the p-value for the experimental group was 0.200, and the control group obtained 0.070. These values indicate that the data distribution in both groups followed a normal distribution. Therefore, the assumption of normality was met, which allowed the data to be further analyzed using the parametric Multivariate Analysis of Variance.

Levene's Test of Equality of Error Variances

Levene's Test of Equality of Error Variances was employed to examine the assumption of homogeneity of variances between the experimental and control groups for the two dependent variables, namely appreciative attitudes toward traditional music and traditional music skills. This test aimed to ensure that the variances between the experimental and control groups were homogeneous or equal. The criterion applied in this test was that if the significance value (p-value) was greater than 0.05, the assumption of homogeneity of variances was accepted, indicating no significant differences in variances between the groups. Conversely, if the p-value was less than 0.05, the assumption of homogeneity of variances was considered violated, which could affect the validity of the Multivariate Analysis of

Variance results. Therefore, the outcome of Levene's Test is crucial to ensure that the data meet the required assumptions before proceeding to further inferential analysis.

Table 4
Levene's Test of Equality of Error Variances

		Levene Statistic	df1	df2	Sig.
Appreciative_Attitude	Based on Mean	1,048	1	58	0,310
	Based on Median	1,080	1	58	0,303
	Based on Median and with adjusted df	1,080	1	54,515	0,303
	Based on trimmed mean	0,976	1	58	0,327
Traditional_Music_Skills	Based on Mean	0,001	1	58	0,977
	Based on Median	0,008	1	58	0,931
	Based on Median and with adjusted df	0,008	1	54,297	0,931
	Based on trimmed mean	0,001	1	58	0,982

Based on the results of Levene's Test of Equality of Error Variances, the significance values (p-values) for all approaches used namely based on the mean, median, median adjusted with degrees of freedom, and trimmed mean were greater than 0.05 for both dependent variables (appreciative attitudes toward traditional music and traditional music skills). This indicates that there were no significant differences in variances between the experimental and control groups, and thus the assumption of homogeneity of variances was accepted. Accordingly, the data met the requirements to proceed with further analysis using the Multivariate Analysis of Variance, since the assumption of homogeneity of variances, which is essential for the validity of this analysis, was satisfied.

Multivariate Tests

The Multivariate Analysis of Variance was conducted to examine the effect of the learning model on two dependent variables, namely appreciative attitudes toward traditional music and traditional music skills. The results of this Multivariate Analysis of Variance provide information on the extent to which differences are significant between the experimental group, which received instruction through the Inquiry Based Learning model supported by Artificial Intelligence, and the control group, which received conventional instruction. The following table presents the results of the Wilks' Lambda analysis, which was used to test the differences between groups and to identify the extent to which the learning model influenced both dependent variables.

Table 5
Multivariate Tests

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	0,995	5411.091 ^b	2,000	57,000	0,000	0,995
	Wilks' Lambda	0,005	5411.091 ^b	2,000	57,000	0,000	0,995
	Hotelling's Trace	189,863	5411.091 ^b	2,000	57,000	0,000	0,995
	Roy's Largest Root	189,863	5411.091 ^b	2,000	57,000	0,000	0,995
Class	Pillai's Trace	0,331	14.120 ^b	2,000	57,000	0,000	0,331
	Wilks' Lambda	0,669	14.120 ^b	2,000	57,000	0,000	0,331
	Hotelling's Trace	0,495	14.120 ^b	2,000	57,000	0,000	0,331
	Roy's Largest Root	0,495	14.120 ^b	2,000	57,000	0,000	0,331

Based on the results of the Multivariate Analysis of Variance, the effect of the learning model on the two dependent variables appreciative attitudes toward traditional music and traditional music skills was found to be significant. The results of the multivariate statistical analysis using Wilks' Lambda showed a p-value of $0.000 < 0.05$, as well as an F-value greater than the F-table value, namely $14.120 > 3.16$. This indicates that there were significant differences between the experimental and control groups on both dependent variables. The very small Wilks' Lambda value (0.669) further suggests that the Inquiry Based Learning model supported by Artificial Intelligence exerted a very strong influence on both variables. Thus, these results demonstrate that the implemented learning model had a significant impact on improving students' appreciative attitudes and traditional music skills, and support the validity of the alternative hypothesis that the application of the Artificial Intelligence-based learning model can significantly enhance learning outcomes in arts and culture education.

Discussion

This study aimed to explore the influence of the Inquiry Based Learning model supported by Artificial Intelligence on two dependent variables, namely students' appreciative attitudes toward traditional music and their traditional music skills. Based on the analysis conducted, the main findings indicate that the Artificial Intelligence-based learning model had a significant effect on both dependent variables in this study. This was evidenced by the results of the multivariate statistical analysis using Wilks' Lambda, which showed a p-value of $0.000 < 0.05$, as well as an F-value greater than the F-table value, namely $14.120 > 3.16$. These findings are consistent with several previous studies demonstrating that technology-based learning, particularly those involving Artificial Intelligence, can enhance student engagement and learning outcomes across various educational contexts (Chen et al., 2010; Indra et al., 2023; Kusumo et al., 2024; Malik, 2023; Mufron et al., 2024). With respect to appreciative attitudes toward traditional music, the experimental group that received instruction through the Inquiry Based Learning model supported by Artificial Intelligence achieved higher mean scores compared to the control group, which received conventional instruction. Similarly, in terms of traditional music skills, the experimental group demonstrated significantly greater improvement compared to the control group.

In the variable of appreciative attitudes toward traditional music, the experimental group that employed the Inquiry Based Learning model supported by Artificial Intelligence demonstrated more positive attitudes compared to the control group. This result is consistent with studies showing that inquiry-based learning can enhance students' emotional engagement with the subject matter. Inquiry Based Learning encourages students to become more actively involved in the learning process, which in turn fosters more positive attitudes toward the topics being studied (Aktamış et al., 2017; Bozkurt et al., 2016; Tarwiyani et al., 2020). In the context of arts and culture education, artistic appreciation can be cultivated through deep learning experiences that enable students to explore, understand, and appreciate the cultural values embedded in traditional music (De-Araújo, 2018; Park & Kim, 2025; Roald, 2008). The use of Artificial Intelligence in the Inquiry Based Learning model provides instant feedback that assists students in refining their understanding, thereby creating a more meaningful learning experience (Kotsis, 2024; Liao, 2021; L. Liu et al., 2022; Y. Xu, 2024).

The analysis also revealed that the experimental group experienced a more significant improvement in traditional music skills compared to the control group. Traditional music skills are the outcome of practical learning that requires time and repetition to be mastered effectively (Carter & Grahn, 2016; Johansson, 2021; Maynard, 2006; Saville, 2011). In this study, the Inquiry Based Learning model supported by Artificial Intelligence provided students with opportunities for direct practice and instant feedback, enabling them to continuously refine their skills. This finding is consistent with Yang (2025), who emphasized that musical skills develop through continuous practice and proper monitoring, which can be

facilitated by intelligent technologies. Research by Li (2025); Shah (2013); Shah & Masumi (2016) also supports this result, highlighting that traditional music requires a practical and contextual approach, where quick and relevant feedback can accelerate the learning of musical skills. Within the Inquiry Based Learning model supported by Artificial Intelligence, students were able to record themselves and receive automatic analysis regarding technical errors or shortcomings in their performances. The use of Artificial Intelligence as a learning aid in music education allowed students to obtain accurate corrections and identify areas for improvement, which in turn significantly enhanced their musical skills.

The findings of this study are consistent with various previous studies. Research by Xu (2024) demonstrated that interactive and technology-based learning models can enhance student engagement in arts and culture education, which positively influence both appreciative attitudes and practical skills. Furthermore, Zhang (2025) revealed that the use of Artificial Intelligence in traditional music education has a positive impact on students' technical abilities, as this technology can provide more in-depth and faster feedback compared to conventional methods. In this regard, the findings of this study reinforce the argument that Artificial Intelligence based technology can improve both skills and artistic appreciation within the context of traditional music education.

However, although the Inquiry Based Learning model supported by Artificial Intelligence was proven effective in this study, several challenges must be considered in its implementation. One of the main challenges lies in the readiness of both teachers and students to use this technology optimally. According to research by Bah (2024); Chattopadhyay (2025); Fauzi et al. (2024), although Artificial Intelligence holds great potential in education, adequate orientation and training for teachers and students are essential to ensure that the technology can be utilized effectively. Therefore, the successful implementation of the Inquiry Based Learning model supported by Artificial Intelligence does not solely depend on the technology itself but also on the digital competence of teachers and students in optimizing the use of these tools in the learning process.

This study provides important implications for the development of arts and culture education in schools, particularly in enhancing students' appreciative attitudes and practical skills. Inquiry Based Learning supported by Artificial Intelligence can serve as an effective approach to addressing the challenges of arts education in the digital era. Therefore, integrating technology into arts education not only enriches the learning experience but also opens opportunities for more personalized and adaptive learning. Nevertheless, this study has several limitations, including the limited sample size drawn from a single school, which may restrict the generalizability of the findings to the broader student population in Indonesia. Future research could involve larger and more diverse samples to examine whether the results of this study can be applied more broadly. Moreover, further studies may explore comparisons among various Artificial Intelligence-based learning models in the context of arts and culture education, as well as investigate their influence on other dimensions of learning, such as creativity and collaborative abilities in the arts.

CONCLUSION

Based on the results of this study, it can be concluded that the Inquiry Based Learning model supported by Artificial Intelligence had a significant effect on students' appreciative attitudes toward traditional music and their traditional music skills. The hypothesis testing using Wilks' Lambda in the Multivariate Analysis of Variance indicated significant differences between the experimental and control groups on both dependent variables (p -value = 0.000), which means that the alternative hypothesis (H_1) was accepted while the null hypothesis (H_0) was rejected. In addition, the Partial Eta Squared values revealed that the Inquiry Based Learning model supported by Artificial Intelligence had a large effect on both

variables, with the effect size indicating a significant impact on students' learning outcomes. These findings demonstrate that the application of an Artificial Intelligence-based learning model can significantly enhance students' appreciative attitudes and traditional music skills, supporting the hypothesis that this model is effective in the context of arts and culture education.

This study provides important implications for the development of arts and culture education in schools, particularly in addressing the challenges of arts education in the digital era. The Inquiry Based Learning model supported by Artificial Intelligence can serve as an alternative approach to enhancing students' appreciative attitudes and practical skills in traditional music. This technology-based learning not only increases student engagement in the learning process but also provides instant feedback, enabling them to directly improve their skills and understanding.

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