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THE EFFECT OF NATURE-THEMED ENGLISH SONGS ON HUMANISTIC VALUES DEVELOPMENT IN EARLY CHILDHOOD EDUCATION

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Abstract

The quasi-experimental study examined the effectiveness of nature-themed English songs in developing humanistic values among children in Early Childhood Education (PAUD). The population consisted of children aged 4–5 years, a critical stage for social, emotional, and character development. The research was conducted at Chatya Manis PAUD, and a non-probability sampling method was used. Two existing PAUD classes were deliberately selected because they were comparable in age, gender distribution, and baseline humanistic values. One class served as the experimental group, while the other functioned as the control group. Statistical analyses confirmed that no significant differences existed between the groups at the pretest stage, ensuring a valid comparison. The sample comprised 60 children aged 4–5 years (M = 4.6, SD = 0.52), evenly divided into two groups of 30 children, with a balanced gender composition. The experimental group participated in an eight-week intervention, whereas the control group continued with the standard PAUD curriculum. Data were analyzed with independent t-tests and hierarchical linear regression. Results show that the experimental group demonstrated a statistically significant and substantially greater improvement in humanistic values (M=4.25, SD=0.38) compared to the control group (M=3.45, SD=0.42), $t(58)=7.84$, $p<.001$, with a very large effect size (Cohen's $d=1.99$). Hierarchical regression confirmed the song intervention was a strong and unique predictor ($\beta=0.74$, $p<.001$), explaining 54% of the variance ($\Delta R^2=0.54$) in outcomes after controlling for age and gender. In conclusion, nature-themed English songs are a highly effective, evidence-based pedagogical tool for promoting humanistic character development in PAUD. The study recommends the systematic integration of such musical activities into early childhood curricula to cultivate empathy, environmental appreciation, and curiosity.

Keywords Childhood Education (PAUD), Humanistic Values, Nature-Themed English Songs.

INTRODUCTION

The Early Childhood Education (PAUD) period represents a critical window for holistic development, where foundational values and cognitive frameworks are established (Chen et al., 2024; Craig et al., 2024; Lin et al., 2025). Within this context, music, particularly songs, is recognized as a powerful pedagogical tool due to its innate ability to engage children emotionally, cognitively, and socially. The melodic patterns, repetitive structures, and rhythmic elements of songs facilitate language acquisition, enhance memory retention, and create a joyful learning atmosphere (Ho, 2025; Pereira &Rodrigues, 2025; Rodrigues et al., 2025; Selmani, 2024).

Concurrently, there is a growing imperative to cultivate humanistic values such as empathy, care for the environment, cooperation, and appreciation from an early age (McNulty & Politis, 2023; Sakti et al., 2024). This is in response to global challenges like environmental degradation and a perceived decline in social empathy. Nature-themed content serves as an ideal conduit for instilling these values, as it encourages children to connect with the world beyond themselves (Acharibasam & McVittie, 2022; Sakti et al., 2024).

Preliminary observations, semi-structured interviews with teachers, and analysis of instructional documents at PAUD Chatya Manis Palembang city indicate that they have routinely integrated English songs into daily classroom activities, either during opening sessions or learning transitions. It is also found that to support early exposure to English vocabulary and pronunciation, they use English songs through repetitive melodic patterns. However, empirical classroom observations reveal that the songs they select and implement have not been systematically aligned with explicit character or value-based learning objectives, particularly those related to humanistic and ecological values. The prevailing instructional approach remains largely teacher-centered, with children imitating songs without structured opportunities for meaning-making, reflective dialogue, or embodied activities linked to the lyrical content. Furthermore, existing assessment practices focus predominantly on observable participation and compliance, as documented in daily assessment records, rather than on the affective or behavioral dimensions associated with value internalization. This gap suggests that while musical activities are pedagogically valued, their potential contribution to broader developmental outcomes has not yet been empirically examined within the institutional context. Simultaneously, baseline data collected prior to the intervention, such as systematic behavioral observations, teacher anecdotal records, and pretest measurements, indicate that children's humanistic values at PAUD Chatya Manis Palembang city are present but not yet

consistently internalized. Empathy, cooperation, responsibility, environmental awareness, and curiosity as indicators were observed to fluctuate across learning situations and were often contingent on direct teacher prompts. Pretest results confirmed moderate baseline levels of humanistic values, with no significant differences between groups. According to Aguileta et al.(2025) and Winarko & Budiwati (2024), this indicates the need for intentional pedagogical strategies to support value development. This empirical condition raises a critical research problem concerning how existing instructional practices, particularly music-based activities, might be optimized to foster stable and measurable humanistic outcomes. Consequently, examining the relationship between nature-themed English songs and the development of humanistic values through an experimental design is both contextually grounded and theoretically significant. Such an investigation is essential not only to validate the pedagogical function of music beyond linguistic objectives but also to provide evidence-based guidance for integrating language learning, musical engagement, and character education in early childhood settings. While existing literature substantiates the benefits of music in early childhood education and the importance of nature-based learning, a significant research gap persists(Andayani, 2022; Kostilainen et al., 2024; Mugaya, 2022). Firstly, most studies focus on either language acquisition or socio-emotional development in isolation. There is a scarcity of empirical research that quantitatively measures the synergistic effect of combining an English-language medium with nature-themed content specifically for fostering humanistic values. Secondly, prior research often relies on qualitative observations or small-scale case studies, lacking the statistical rigor to establish causality or measure the magnitude of the impact. Thirdly, the potential of English songs as a vehicle for value-based education in non-native speaking PAUD settings remains underexplored, often overshadowed by a focus on purely linguistic outcomes (Ali, 2020; Fidzikri et al., 2024).

This study incorporates several innovative elements designed to respond directly to the gaps identified in previous research. First, it offers an integrated focus that combines three important educational domains: English language exposure, nature-themed learning content, and the development of measurable humanistic values in early childhood. This interdisciplinary approach not only enriches children's learning experiences but also provides a more holistic foundation for character education in PAUD settings. Second, the methodological rigor of this research strengthens its contribution to the field. By employing a quasi-experimental design with a clear comparison between an intervention group and a control group, the study is able to generate robust and reliable

quantitative evidence. This design supports stronger causal claims regarding the effectiveness of nature-themed English songs in shaping children's values. Third, the statistical techniques utilized go beyond basic descriptive interpretations. Through the application of Independent T-Tests and Linear Regression Analysis, this study not only identifies significant differences between groups but also evaluates the predictive strength of the intervention while controlling for possible confounding factors such as age and gender. This depth of analysis enhances the validity of the findings. Finally, this research offers practical relevance by being conducted in a mainstream PAUD environment within a non-English-speaking context. This real-world application provides a concrete and adaptable model for educators seeking to integrate language learning and character education effectively.

Based on the research background and the identified gaps, this study aims to examine whether the use of nature-themed English songs can significantly influence the development of humanistic values in PAUD children. Specifically, the research seeks to determine if there are meaningful differences in the level of humanistic values between children who receive this musical intervention and those who continue with the regular curriculum. Furthermore, the study investigates the extent to which the intervention contributes to improving children's humanistic values when factors such as age and gender are statistically controlled. Through this investigation, the research intends to provide clearer empirical evidence regarding the effectiveness of integrating language learning and value formation in early childhood education.

METHOD

This study used a quasi-experimental design with a pretest-posttest control group design (Baskaran et al., 2023; Capili & Anastasi, 2025; Liu et al., 2022). The population of this study consisted of early childhood education (PAUD) children aged 4–5 years who were enrolled in a formal PAUD Chatya Manis institution. This population was selected because early childhood is a critical period for the formation of social, emotional, and humanistic values, which align directly with the objectives of the research. More specifically, the accessible population included children attending the selected PAUD school where the study was conducted, as these learners shared similar developmental characteristics and were exposed to the same institutional curriculum before the intervention.

The sampling technique used in this research was a non-probability approach, combining purposive sampling with intact group sampling, which is commonly applied in quasi-experimental designs. Because random assignment of individual children was not feasible within the school context, the researchers deliberately selected two existing PAUD classes at Chatya Manis that were considered equivalent in terms of age range, gender distribution, and initial levels of humanistic values. These intact classes were then assigned to either the experimental or control condition. To ensure methodological rigor, baseline equivalence between the two groups was statistically tested using age, gender, and pretest scores, confirming that no significant differences existed before the intervention was implemented. The sample used in the study comprised a total of 60 children aged 4–5 years (M=4.6 years, SD=0.52), drawn from the two selected PAUD classes at Chatya Manis. The sample was evenly divided into an experimental group and a control group, each consisting of 30 children with balanced gender composition (15 boys and 15 girls in each group). The experimental group received an eight-week intervention involving structured nature-themed English song activities, while the control group continued with the standard PAUD curriculum at Chatya Manis. This balanced and comparable sample ensured that any differences observed in post-test outcomes could be attributed with greater confidence to the intervention rather than to pre-existing demographic or developmental differences.

The table below is more rigorous and is used to statistically demonstrate that the two groups were equivalent at the start of the study (i.e., there were no significant pre-existing differences). This strengthens the validity of the research design.

Table 1. Baseline Equivalence of Experimental and Control Groups

Variable	Experimental Group (n=30)	Control Group (n=30)	Test Statistic	p-value
Age (months)				
Mean (SD)	56.4 (6.0)	54.6 (6.5)	t(58) = 1.14	0.259
Range	49 - 62	48 - 61		
Gender				
Male, n (%)	15 (50.0)	15 (50.0)	$\chi^2(1) = 0.00$	1.000
Female, n (%)	15 (50.0)	15 (50.0)		
Pretest Score				
Mean (SD)	3.50 (0.45)	3.48 (0.49)	t(58) = 0.16	0.871
Range	2.8 - 4.3	2.7 - 4.4		

Related to the age, the p-value of 0.259 is far above the common significance threshold of 0.05. This means there is no statistically significant difference in the average age between the experimental and control groups. They are demographically equivalent in terms of age. Regarding

gender, the p-value of 1.000 indicates a perfect balance in gender distribution between the groups. The chi-square test (χ^2) confirms this lack of association between group assignment and gender.

To know the pretest score is the most important test for equivalence. The p-value of 0.871 indicates that there was no statistically significant difference in the baseline level of humanistic values between the two groups before the study's commencement. This is critical evidence that any later differences in the post-test can more confidently be attributed to the intervention itself. In short, as shown in Table 1, tests for baseline equivalence revealed no statistically significant differences between the two groups in terms of age, gender distribution, or pretest scores on the humanistic values measure, confirming that the groups were comparable before the intervention.

To ensure the accuracy and credibility of the data collected, the researchers in this study employed two research instruments. They are the humanistic values observation checklist and a demographic data questionnaire. The careful selection and validation of these tools were essential to establishing strong methodological foundations, particularly in studies focusing on early childhood education, where abstract constructs must be precisely operationalized. The humanistic values observation checklist served as the primary instrument to assess the core outcome of the intervention, namely the development of humanistic values in young children, an area recognized as a global educational priority. Designing this checklist required a systematic process of translating the broad and abstract notion of humanistic values into observable competencies relevant to early learners. To achieve this, researchers identified five key dimensions grounded in current theoretical perspectives on social-emotional and moral development: empathy, appreciation, responsibility, cooperation, and curiosity. Each dimension was clearly defined to ensure a measurable and behavior-based assessment. Empathy captured children's ability to recognize and respond to others' emotions, reflecting essential social-emotional learning competencies. Appreciation referred to a sense of gratitude and wonder toward natural elements, aligning with recent discourses on ecological literacy. Responsibility focused on accountability in actions, particularly regarding environmental care, while cooperation highlighted the importance of collaborative skills in early peer interactions. Lastly, curiosity represented the intrinsic motivation to explore and engage with nature-related content, underscoring its significance in children's cognitive development(Denston et al., 2022; Dussault & Thompson, 2024).

To quantify these constructs, the checklist adopted a 15-item format, with three items assigned to each dimension. Teachers rated children's behaviors using a 5-point Likert scale ranging

from “Never” (1) to “Always” (5), converting qualitative observations into numerical data appropriate for statistical analysis. This Likert-based approach supports more comprehensive measurement and is considered a standard in early childhood assessment practices (Koo & Yang, 2025; Lai et al., 2025; Montoya-Fernandez et al., 2024). Before implementation, the instrument underwent a rigorous validation process to confirm its technical quality. Content validity was established through expert review by professionals in early childhood education and child psychology, ensuring item relevance and clarity (Beck, 2020; Masuwai et al., 2024). Reliability analysis further supported instrument quality, yielding a Cronbach’s Alpha coefficient of $\alpha = 0.87$. This value surpasses the commonly accepted minimum threshold of 0.70 and approaches the benchmark for strong internal consistency, confirming that the instrument functions reliably in capturing the intended constructs (Amirrudin et al., 2021; Willems et al., 2023).

In support of these primary measures, the researchers also used a demographic data questionnaire to collect essential background information on participants. This instrument played a critical role in describing sample characteristics and ensuring comparability between the experimental and control groups. Data gathered through this questionnaire facilitated statistical verification of group equivalence at baseline, helping to rule out alternative explanations for observed outcomes and thereby enhancing the study’s internal validity. Such procedures are widely recommended in quasi-experimental research designs to ensure credible and generalizable findings.

The implementation of the research intervention was systematically designed to ensure consistent and meaningful exposure to the experimental treatment. The experimental cohort participated in structured intervention sessions administered three times weekly over eight weeks, providing a sustained and intensive engagement with the pedagogical materials. Each 30-minute session followed a carefully sequenced instructional framework designed to maximize multi-sensory engagement and conceptual understanding.

The pedagogical approach centered on nature-themed English songs selected for their linguistic accessibility and ecological content, including "Cow and Green Grass," "Little Frog in the Pond," "Tiny Seeds Grow up," "Butterfly Butterfly Come to My Garden," “Moon Follows me Home,” and "Rainbow above the Rabbit Head." These musical selections served as the foundational element for an integrated learning experience that extended beyond mere musical exposure. Each session incorporated complementary pedagogical strategies, including guided discussions to facilitate comprehension and internalization of values, kinesthetic activities that embodied natural

phenomena through purposeful body movements, and creative art activities that provided a tangible expression of thematic concepts. This multi-modal approach aligned with embodied cognition principles, facilitating deeper processing and connection to the humanistic values embedded in the lyrical content.

Throughout the intervention period, the control group maintained its standard PAUD curriculum, which excluded the specific nature-themed English song component. This maintained the integrity of the experimental design by ensuring that any significant differences observed in outcome measures could be reasonably attributed to the intervention rather than general educational experiences. The standard curriculum provided a legitimate baseline against which the specific effects of the musical intervention could be measured, controlling for normal developmental progression and routine educational exposure.

The intervention protocol maintained methodological rigor through standardized implementation across all experimental sessions. Teachers followed detailed lesson plans that specified procedural sequences, discussion prompts, and activity instructions to ensure treatment fidelity. This consistency in delivery was essential for establishing internal validity and ensuring that all participants in the experimental condition received equivalent exposure to the intervention elements. The structured yet engaging nature of the sessions supported both the research objectives and appropriate pedagogical practices for the developmental level of the participants.

Quantitative data analysis was conducted using SPSS version 29, employing a sequential analytical approach to address the research objectives. The initial analytical stage utilized an Independent Samples T-Test to examine mean differences in post-test scores on humanistic values between the experimental and control groups. This statistical comparison directly assessed the intervention's overall effect, addressing the primary research question regarding the intervention's efficacy in fostering humanistic development.

The secondary analytical phase employed hierarchical linear regression to investigate the predictive capacity of the song intervention while controlling for potential confounding variables. This multivariate approach enabled the quantification of the intervention's unique contribution to variance in humanistic values scores after accounting for demographic factors of age and gender. The regression analysis thus provided nuanced insight into the specific predictive power of the pedagogical intervention, addressing the secondary research question concerning the relative importance of the musical treatment compared to other variables.

The analytical strategy incorporated appropriate validation of statistical assumptions, including tests for normality and homogeneity of variance, to ensure the robustness of parametric test results. This methodological rigor in data analysis ensured that findings regarding the intervention's impact would be both statistically reliable and academically defensible.

FINDINGS AND DISCUSSION

Findings

Data Description and Normality Test

Post-test scores for both groups were tested for normality using the Kolmogorov-Smirnov Test. The results showed that the data were normally distributed ($p > 0.05$), thus meeting the assumptions for parametric analysis.

Table 2. Descriptive Statistics of Humanistic Values Scores

Group	N	Pretest (Mean ± SD)	Post-test (Mean ± SD)
Experimental	30	3.50 ± 0.45	4.25 ± 0.38
Control	30	3.48 ± 0.49	3.45 ± 0.42

Source: SPSS Output, 2025

Hypothesis Testing Results

To test whether there was a significant difference between the experimental and control groups, an Independent Samples T-Test was conducted on the post-test scores.

Table 3. Independent T-Test Results for Post-Test Scores

Group	Mean	Std. Deviation	t-value	df	p-value
Experimental	4.25	0.38	7.84	58	< 0.001
Control	3.45	0.42			

Source: SPSS Output, 2025

The analysis results (Table 3) show that there was a statistically highly significant difference in the humanistic values scores between the experimental and control groups after the intervention, $t(58) = 7.84$, $p < 0.001$. The mean score of the experimental group ($M=4.25$) was clearly higher than that of the control group ($M=3.45$). The effect size calculated using Cohen's d was 1.99, which is categorized as a very large effect. This finding strongly answers the first research problem that the intervention of nature-themed English songs significantly enhances children's humanistic values.

Regression Analysis Results

To determine the extent of the intervention's contribution and to control for other variables, a Linear Regression Analysis was performed. The dependent variable was the post-test score of humanistic values. The independent variables were entered in two blocks. Block 1 contained control

variables (age and gender), and Block 2 contained the main predictor variable (Song Intervention: yes/no).

Table 4. Hierarchical Linear Regression Analysis Results

Model	Predictor Variable	B	Beta (β)	p-value	R^2	ΔR^2
1	(Constant)	2.10		<0.001	0.03	
	Age	0.15	0.12	0.18		
	Gender	0.08	0.09	0.29		
2	(Constant)	1.95		<0.001	0.57	0.54
	Age	0.09	0.07	0.25		
	Gender	0.05	0.06	0.35		
	Song Intervention	0.79	0.74	**<0.001**		

Source: SPSS Output, 2025

Based on Table 4, it is known that Model 1 incorporated only the control variables of age and gender. The results demonstrated that these demographic factors collectively explained merely 3% of the variance in humanistic values scores ($R^2 = 0.03$). Furthermore, the statistical analysis revealed that the individual contribution of neither age nor gender was significant ($p > 0.05$). This means that these demographic characteristics are not primary determinants of the observed outcomes in humanistic values.

Model 2 introduced the song intervention variable into the regression analysis, resulting in a notable enhancement in the model's overall explanatory strength. The coefficient of determination (R^2) rose sharply to 0.57, demonstrating that the expanded model was able to account for 57% of the total variance in children's humanistic values scores. Importantly, the increase in explained variance ($\Delta R^2 = 0.54$) indicates that the song intervention independently contributed an additional 54% of the variance, even after controlling for age and gender. This substantial improvement underscores the intervention's critical role in predicting developmental outcomes related to humanistic values.

Further supporting the strength of this relationship, the standardized regression coefficient ($\beta = 0.74$) for the Song Intervention variable reveals a strong and positive predictive effect. In practical terms, children who participated in the intervention demonstrated an average increase of 0.74 standard deviations in humanistic values compared to those who did not receive the intervention. The associated p-value of < .001 confirms that this effect is statistically highly significant. These findings collectively provide compelling empirical evidence that the song-based learning approach exerts a powerful and meaningful influence on the development of humanistic values in early childhood education settings.

Discussion

Conducted at PAUD Chatya Manis in Palembang City, Indonesia, this study demonstrates that the structured use of nature-themed English songs significantly enhances humanistic values in early childhood education. Children in the experimental group achieved higher post-test scores in empathy, cooperation, responsibility, environmental appreciation, and curiosity than those in the control group. The experimental group showed a strong and significant effect with a large effect size, even after controlling for age and gender, indicating that the gains resulted from intentional pedagogical design rather than natural development. Overall, the findings confirm the effectiveness of nature-themed English songs as an empirically supported approach to fostering humanistic values in early childhood settings.

The robust statistical evidence ($t=7.84$, $p<0.001$; $\beta=0.74$) provides compelling validation for the intervention's efficacy in fostering humanistic values among young learners. These quantitative findings gain deeper significance when examined through established theoretical frameworks in child development and education. This aligns strongly with embodied cognition theory, which challenges traditional mind-body dualism by positing that cognitive processes emerge from bodily interactions with the environment (Liang et al., 2025; Z. Liu et al., 2025). The intervention's design, which integrates singing with purposeful movement, enacts Castro-Alonso et al. (2024) concept of "off-loaded cognition," where physical gestures externalize and concretize abstract concepts. When children stretched upward while singing "Tiny Seeds Grow up," they were not merely performing actions but were embodying the concept of growth itself. This physical engagement created terms "perceptual symbols," which means sensorimotor representations that ground abstract values in bodily experience, making concepts like environmental stewardship more tangible and memorable than verbal instruction alone could achieve (Biassoni et al., 2023).

The remarkable predictive power of the song intervention ($\Delta R^2=0.54$) underscores what might be termed the "triple coding" advantage of musical pedagogy. As articulated by Prires (2025) and Roshdy et al. (2024), songs simultaneously engage linguistic, emotional, and imagistic processing systems. This multimodal engagement creates what Bruner (1996), in Wang et al. (2025), would recognize as "verisimilitude," referring to the quality of feeling authentically immersed in the narrative reality of the song. For instance, "Moon Follows Me Home" does not merely teach vocabulary about celestial bodies; it creates an emotional landscape where children experience metaphorical warmth and dependence on natural phenomena, which Franek and Petružálek (2024)

identify as "emotional ecology," which means the foundational connection between emotional experience and environmental values.

The non-significance of demographic variables (age, gender) reveals crucial insights about the intervention's mechanism. This pattern suggests that the songs functioned not as conventional academic content but as "psychological tools" related to cultural artifacts that mediate cognitive and emotional development uniformly across individuals (Malik et al., 2025). The universal accessibility of melody and rhythm is classified as "communicative musicality," which defines an innate human capacity that precedes linguistic and cultural differences. This explains why children across the demographic spectrum responded similarly (Christiner & Groß, 2025).

Furthermore, the findings exemplify the somatic marker hypothesis in educational practice. The joyful somatic experiences of singing and moving became neural markers that associated positive physiological states with pro-environmental content (Geest et al., 2021). This emotional tagging creates what Nicholson et al. (2025) have shown to be essential for transferring knowledge into value-driven action. The songs did not just teach about nature; they made caring for nature feel good and created "embodied emotional resonances" that are far more durable than declarative knowledge (Yu & Xu, 2025). The study's outcomes also reflect the principles of the biophilia hypothesis, suggesting that children possess an innate tendency to connect with nature, which the songs effectively activated (Deng et al., 2025). This connection aligns with what Chawla (2020) identifies as "significant life experiences" that form environmental identity, or in other words, the intervention created positive, recurring experiences with nature themes that built what Martinez and Syroyid (2021) call "environmental sensitivity." The nature-themed songs bring ecological awareness into classroom settings where direct nature contact may be limited.

The pedagogical approach successfully created a tight-knit learning community where values were built collectively through shared musical experiences. The group singing served as a common practice that fostered collective meaning-making. This process transformed the children's individual learning into a shared, creative endeavor where they constructed understanding together through musical interaction. In short, the intervention’s effectiveness lies in its strong grounding in multiple learning theories, which engage the body through movement, emotions through music, and social interaction through group activities, while ensuring accessibility through a multimodal design. Thus, nature-themed songs function not just as an instructional activity but as a powerful pedagogical tool aligned with core principles of human development and learning.

CONCLUSION

This study helps reflect on the impact of English songs themed around nature in early childhood education, and it allows us to conclude two significant findings. Firstly, those participants who engaged in the intervention displayed a greater level of development of the humanistic values than those who engaged in the control activity of the standard curriculum, as demonstrated by the following $t(58)=7.84$, $p<0.001$, and therefore, with heavy practical implications, Cohen's $d=1.99$. Secondly, the song intervention was a significant predictor of values development, as evidenced by hierarchical regression, and it was determined that the song intervention was able to independently explain 54% of the outcomes' variance, $\Delta R2=0.54$, and controlling for the variables of age and gender. Thus, the findings indicate that the intervention is applicable across a range of users, given the suggestions of the demographic variables' non-significance. This study cultivates the use of musical interventions beyond a modest educational strategy to a fully valuable educational strategy. By the evidence presented in this study which concludes the effective use of songs themed around nature to develop humanistic values, it is vital that nature themed English songs be used in PAUD curricula in character education, and, fundamentally, the educational practitioners who will be working with the children be adequately prepared, in a purposeful way, for this educational strategy in song use. This evidence, while it suggests the desired effects of songs themed around nature on young children's humanistic values, also indicates the need for more extensive longitudinal studies.

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