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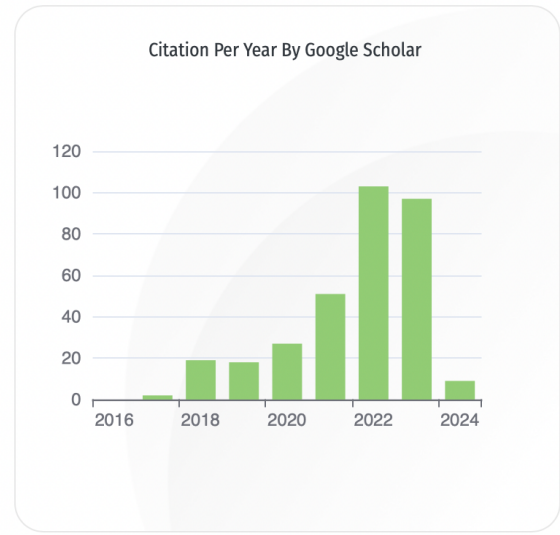
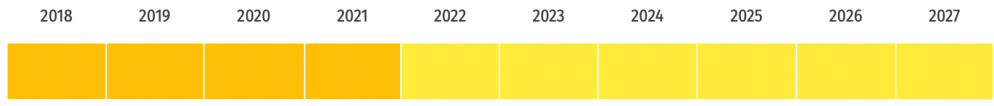
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## Chirping Symphony of Nature in the Digital Art World: How Ecomusicology Cultivates EFL Students' Nature Connectedness and Interests

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### Highlights

- Ecomusicology instructional approach is a useful approach for teaching environmental issues in ELT.
- Ecomusicology instruction develops EFL students' nature connectedness and interests.

**ABSTRACT:** This study responds to the imperative for ELT's explicit contribution to environmental sustainability. This study proposed and developed an ecomusicology instruction about Earth in ELT, exploring its impacts on EFL students' nature connectedness and interests. Using mixed-method convergent research design, 11 participants, third-semester students in an English education department in Surabaya, aged above 18, experienced the instruction for more than a week. Pre- and post-test surveys were administered to obtain quantitative data which were analyzed using Wilcoxon signed-rank test. Post-instruction, the students completed open-ended questionnaires for qualitative insights. Integrated results of quantitative and qualitative analyses revealed improvements in students' nature connectedness and interests. The results suggest that the use of ecomusicology in teaching environmental issues in English lessons enhances EFL students' unity with nature and strong nature interests. These results highlight a new avenue for the ELT field to address environmental issues by developing future citizens' (EFL students) environmental sustainability values: nature connectedness and interests through ecomusicology instruction.

**Keywords:** ecomusicology, Eco-ELT, nature connectedness, nature interests

### Introduction

As an art form, music plays a crucial role in promoting environmental sustainability. It has the potentials to influence the emotions, moods, wellbeing, identity, and behaviors of individuals towards others (Prior, 2002), including their thoughts about environmental issues (Publicover, et al., 2017). It also has the capacity to shape ecologically responsible communities (Guo, et al., 2020) who perform pro-environmental actions and advocacies as well as empathy towards nature by fostering a connection between humans and the natural world (Turner & Freedman, 2004). The current study confirms this vital role of music on the sustainability of ecosystems, as highlighted by de Moya Martínez & Syroyid Syroyid (2021). They found that music serves as a powerful tool for raising environmental awareness, promoting cares, and instilling environmental values. Thus, in our present digital age, marked by significant human-induced disruptions leading to global challenges like climate change and biodiversity loss, there is an urgent need to boost the practical application and research exploration of music and its contribution to advancing environmental sustainability.

Recently, the intersection of music and environmental sustainability has come to the field of English Language Teaching (ELT). This focus was initiated by Summer (2021),

who introduced a framework for ecomusicology in foreign language education. Ecomusicology, as a term, pertains to the studies of interrelationship among music, culture, and nature (Allen, 2012), particularly at a time of environmental crises (Titon, 2013). Summer (2021) recognizes the profound benefits of ecomusicology studies in foreign language instructions, including in ELT. They include increasing students' motivation, evoking positive emotional responses, fostering critical thinking, uniting people to be global citizens, and cultivating critical environmental literacies.

Summer (2021) further outlines four domains of instructional practices for examining music through an ecological lens: musicians (announcements, actions, and engagement in fostering environmental justice), music artefacts (songs/lyrics, music videos, short videos, and feature films), music in action (music making, performance, consumption, music industry), and the environment (physical places and natural resources). These instructional practices involve (1) creating lessons, (2) selecting suitable teaching materials like texts and eco-artefacts, and (3) designing activities and tasks that promote ecological literacies.

The significant benefits and framework of ecomusicology in foreign language education echoed by Summer (2021) have unfortunately not been optimally explored, especially in ELT. In ELT, music and its artifacts have generally been investigated for its contributions to language teaching materials (Rantung, et al., 2023) and improvements in students' English proficiency (see Yuen, 2022). However, its role in fostering ecological sustainability values, such as connection with the natural world (Turner & Freedman, 2004) and nature interests, remains largely unexplored. This gap in knowledge is crucial to address for two main reasons.

First, it contributes to the development of pedagogical content knowledge for sustainability (PCKS) among ELT teachers by introducing innovative instructional strategies through ecomusicology that could nurture sustainability values, specifically nature connectedness and interests. Through this research, ELT teachers gain insights into how to effectively teach environmental issues, preparing English language learners to become future citizens with ecological sustainability values, including a heightened sense of unity with nature and a strong interest in it. Developing a sense of oneness with nature is crucial for English students, as they are part of the global community residing on the same Earth as others and facing shared challenges of nature deteriorations. As responsible individuals, they bear the duty to cultivate a strong connection and interest in nature. A deep connection to nature increases their likelihood refraining from causing harm to the natural environment (Mayer & Frant, 2004) and prompts their pro-environmental behaviors (Barrera-Hernández et al. 2020). Moreover, fostering strong interest in nature is pivotal for them, as it helps them maintain their intrinsic motivation to deepen their knowledge of nature and engage in pro-environmental behaviors (Uitto & Saloranta, 2010). Interests in nature is also no longer viewed as an individual preference; rather, it signifies a sense of responsibility and concern for environmental well-being (Neurohr et al. 2023).

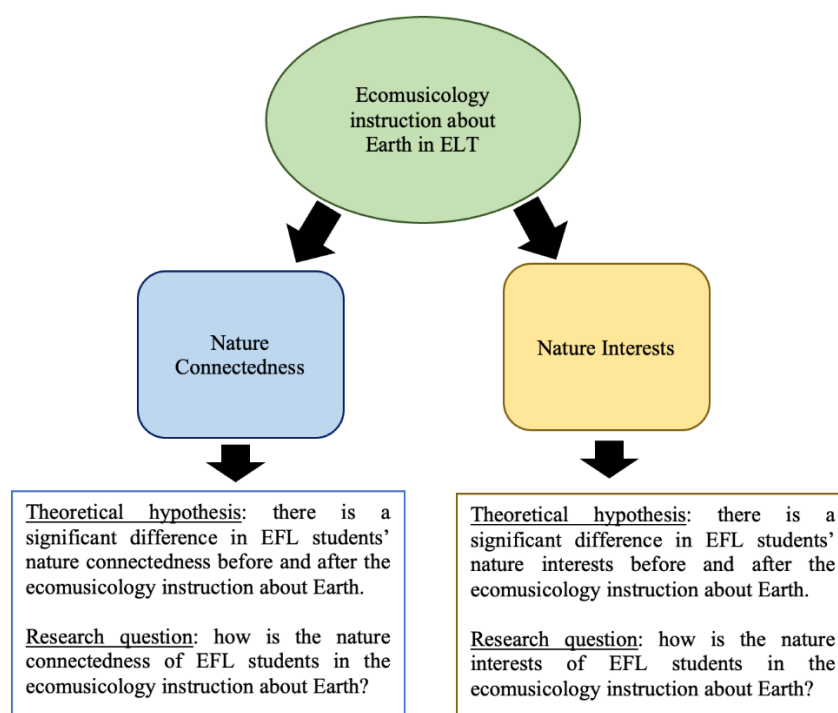
Second, by addressing the gap, this study fosters the growth of the Eco-ELT movement. Eco-ELT, a novel initiative in the realm of ELT, focuses the study and teaching of environmental issues (Saiful, 2023). The integration of ecomusicology practices into ELT expands the range and diversity of teaching approaches within the Eco-ELT framework, offering English teachers explicit methods to contribute to addressing contemporary sustainability challenges. This study responds to the imperative need for the ELT field to play a more explicit role in addressing sustainability issues (Katunich & Goulah 2020). Moreover, this study helps dispel skepticism regarding the ELT field's engagement in environmental sustainability. It is crucial to acknowledge that ELT, in addition to enhancing students' English proficiency, carries a social responsibility to foster ecological thinking and critical awareness (Xiong 2014).

To address the gap, the current study developed an ecomusicology instruction in ELT, focusing on the Earth Day song "Earth" by Lil Dicky, released in 2019. Soedjarwo (2021) has previously analyzed the song's environmental messages, delving into the lyrics to identify words and persuasive utterances that echo environmental advocacy. However, the song has not been implemented in ELT using an ecomusicology lens, nor has its impact on EFL students' environmental sustainability values, such as nature connectedness and interests in nature, been examined. Therefore, this study applied the ecomusicology approach to the song, aiming to investigate its influence on EFL students' nature connectedness and interests.

The conceptual framework of this study is presented in Figure 1. This study predicts an enhancement in EFL students' nature connectedness and interests through the ecomusicology instruction. The assumption is that when students engage with ELT instruction using the ecomusicology lens, focusing on Lil Dicky's song about Earth, they gain insights into environmental issues through different perspectives: the roles of musicians, the creation and impacts of music artefacts, and various aspects of music productions and impacts. These diverse musical themes in learning nature are expected to heighten students' understanding and awareness of environmental issues, fostering a sense of connection to nature. Additionally, students are likely to develop a greater interest in nature as they become more acquainted with its beauty and recognize the importance of preserving it for the well-being of ecosystems. The theoretical hypotheses formulated are that there are significant differences in EFL students' nature connectedness and interests before and after participating in the ecomusicology about Earth. To delve deeper into the impact of the instruction on nature connectedness and interests, the study also explores students' perspectives on their connection to nature and interests in nature following the instruction. Therefore, the research questions formulated are: (1) how is the nature connectedness and (2) the nature interests of EFL students in the ecomusicology instruction about Earth?



Figure 1  
Conceptual framework



## Methodology

### Research Design

This study employed a mixed-method convergent design, incorporating and drawing inferences from the results of quantitative and qualitative data analysis. This design was instrumental in answering comprehensively the research hypotheses and questions. Quantitative data were gathered using pre and post-test experimental design, while the qualitative data were obtained through open-ended questionnaire.

### Participants

The participants in this study were third semester majoring in English Education at a private university in Surabaya, Indonesia. They comprised 11 students aged above 18 years old. Their involvement in the research was voluntary, and they expressed their consent by signing a research consent form.

### Eco-ELT Intervention: An Ecomusicology Instruction about the Earth

The study designed an ecomusicology instruction about the Earth based on the framework of ecomusicology in foreign language education by Summer (2021). This instruction comprised three phases. In the initial phase, spanning 100 minutes (two teaching periods), students were introduced to the song "Earth" by Little Dicky, released in 2019 to commemorate Earth Day. The song featured renowned singers like Justin Bieber, Ariana Grande, and so on, lasted 7.11 minutes, and was in English. During this phase, students listened to and watched the music video twice in YouTube. Then, they engaged in discussions about the music production and actors/nature entities in the song.

Afterwards, they read the lyrics to comprehend the content, and finally wrote and discussed new vocabularies learned from the lyrics.

The second phase of ecomusicology instruction spanning a week, during which students independently delved into the song. They watched the music video on their own, guided by provided discussion questions adapted from Summer (2021), available in the Appendix. These questions covered the musicians (artist(s) and song history), music artifacts (content, target audience, representations of places, nonhuman entities such as plants and animals in the song), music analysis (instruments, singer(s), and personal and public reactions to the song), and the impact of the song on the environment, connecting to its reception. In the third phase, lasting 100 minutes (two teaching periods), students engaged in group discussions about the song, addressing topics outlined in guided questions.

### **Data Collection Instruments and Procedures**

The quantitative data were obtained through questionnaires: the nature connectedness and interests. In this study, nature connectedness refers to individuals' sense of oneness/unity to nature. The chosen questionnaire aligning with this conceptualization was from Nisbet & Zelenski (2013), and as such, this study employed the questionnaire. Additionally, this study defines interests in nature or nature interests as individuals' positive emotions to nature, willingness to learn about nature, and a favorable valuation to nature. The questionnaire selected to best capture this conceptualization was from Kleespies, et al. (2021), correspondingly, this study utilized the questionnaire.

The nature connectedness questionnaire, which demonstrated good psychometric analysis of a Cronbach Alpha, included six positively items. To prevent potential misunderstanding, all items were translated into Indonesian. Responses were recorded on a four-point Likert scale ranging from "strongly disagree" to "strongly agree". Similarly, the interest in nature questionnaire, organized into three domains (emotional interest, cognitive interest, and value-related interest), comprised three positive items in each domain. These items were also translated into Indonesian and presented on a four-point Likert scale. Both nature connectedness and interests were combined in a Google form and administered online to students 10 minutes before and 15 minutes after the ecomusicology instruction.

Qualitative data were gathered through open-ended questionnaires addressing both nature connectedness and nature interests. The prompt question to get data on nature connectedness was "please describe your feeling to nature after joining the ecomusicology instruction" while the question for nature interests was "please describe your interests in nature after participating the ecomusicology instruction". These two questions were integrated into the post-survey in the Google form. Thus, the time for the students to fill in the post-survey was longer than pre-survey.

### **Data Analysis**

This study performed mix-method independent data analysis where quantitative and qualitative data were analyzed independently. Afterwards, the results of analysis were integrated and interpreted. The quantitative data were analyzed using a Wilcoxon signed-

rank test to generate a significance difference of students' nature connectedness and interests before and after the ecomusicology instruction. This test was to confirm the following hypotheses.

H<sub>1</sub>: A significant difference in students' nature connectedness before and after participating the ecomusicology instruction about the Earth.

H<sub>2</sub>: A significant difference in students' nature interests before and after participating the ecomusicology instruction about the Earth.

The qualitative data were analyzed using content analysis to answer the established research questions: (1) how is the nature connectedness and (2) the nature interests of EFL students in the ecomusicology instruction about Earth? The study used the following codes for the results of content analysis. The "SS" referred to "student" and followed by number 1, 2, etc. So, SS10 was "student number 10". We also directly mentioned the sources of the qualitative data collection for trustworthiness such as "open-ended questionnaire", "nature connectedness", "nature empathy". Finally, the complete coding will be "SS10, open-ended questionnaire, nature connectedness, nature empathy" which means the data were from student number 10 gained from the open-ended questionnaire showing students' connection to nature in form of empathy towards nature.

### Research Ethics

Regarding research ethics, this study adhered to high standards. Participants were provided with a consent form, and their signatures were obtained before their participation in the research. The consent form included detailed information about the research areas, potential risks and benefits, and the participants' rights to withdraw from study without facing consequences. The study also ensured the confidentiality of participants' personal data, including the name of the study site.

## Findings and Discussion

### Findings of Nature Connectedness

This study elucidated the quantitative findings concerning students' nature connectedness following their participation in the ecomusicology instruction about Earth, as presented in Table 1.

**Table 1**

*The Quantitative Results of Wilcoxon Signed-Rank Test for Nature Connectedness*

Items	<i>n</i>	Pre-Median ( <i>Mdn</i> )	Post-Median ( <i>Mdn</i> )	<i>p</i> -value*	<i>Z</i>	Effect Size ( <i>r</i> )**	Effect Size ( <i>r</i> ) in Percentage
• My ideal vacation spot would be a remote, wilderness area.	11	3.2	3.2	.031	2.2	0.88	88%
• I always think about my actions affect the environment.							

- 
- My connection to nature and the environment is a part of my spirituality.
  - I take notice of wildlife wherever I am.
  - My relationship to nature is an important part of who I am.
  - I feel very connected to all living things and the Earth.
- 

**Notes:**

\* $p$ -value < .05 is statistically significant

\*\* effect size range (.0 to < .20 = no effect; .20 to < .30 = small effect; .30 to < .50 = moderate effect; and  $\geq$  .50 = large effect) (Dong, et al. 2021)

Table 1 presents the quantitative findings of the Wilcoxon Signed-Rank test of nature connectedness. It reveals a statistically significant difference in students' nature connectedness before ( $Mdn = 3.2, n = 11$ ) and after ( $Mdn = 3.2, n = 11$ ) the ecomusicology instruction, with  $Z = 2.2, p = .031$ . This result accepted the first hypothesis of this study ( $H_1$ ). Additionally, the effect size was 0.88, signifying that the ecomusicology instruction had a strong effect on nature connectedness, contributing to an 88% increase in students' nature connectedness.

The qualitative findings from the open-ended questionnaire successfully found the answers to the research question: (1) how is the nature connectedness of EFL students in the ecomusicology instruction about Earth? The results revealed that students expressed a sense of unity or connection with nature after engaging in the ecomusicology instruction. This connection was evident in their perspectives on the significance of preserving nature and their empathy towards it. For example, SS2 and SS6, contended that nature holds importance and beauty, emphasizing the necessity of protecting it. This perceived importance signifies the students' connection between themselves as humans and the natural world.

“Nature is very important to us. So, keep protecting the environment.” (SS2, *open-ended questionnaire, nature connectedness, nature importance*)

“Nature is important for me as it is most beautiful place. We should keep our world to become most peaceful place. To our nature we must not destroy it; keep animal, plant, anything exists in nature.” (SS6, *open-ended questionnaire, nature connectedness, nature importance*)

Additionally, SS3 and SS8 exhibited their sense of connection or unity with nature by expressing empathy towards it. Following the ecomusicology instruction, they reported feeling sadness and remorse towards nature due to the ongoing destruction.

“A little sad because nature and its contents are getting worse everyday. However, I am also happy because many people still care about nature, such as famous

singers in the song. They are important in the song to encourage change in nature.”  
(SS3, open-ended questionnaire, nature connectedness, nature empathy)

“After learning this song, I realized many important things to preserve nature. I feel sorry for the many bad events in nature.” (SS8, open-ended questionnaire, nature connectedness, nature empathy)

Above all, the integrated quantitative and qualitative findings were in agreement to show an enhancement in students’ nature connectedness after their participation in the ecomusicology instruction about the Earth. A visual representation of the interconnected quantitative and qualitative findings is encapsulated in Figure 2.

**Figure 2**

*The Students’ Nature Connectedness in the Ecomusicology Instruction about the Earth*

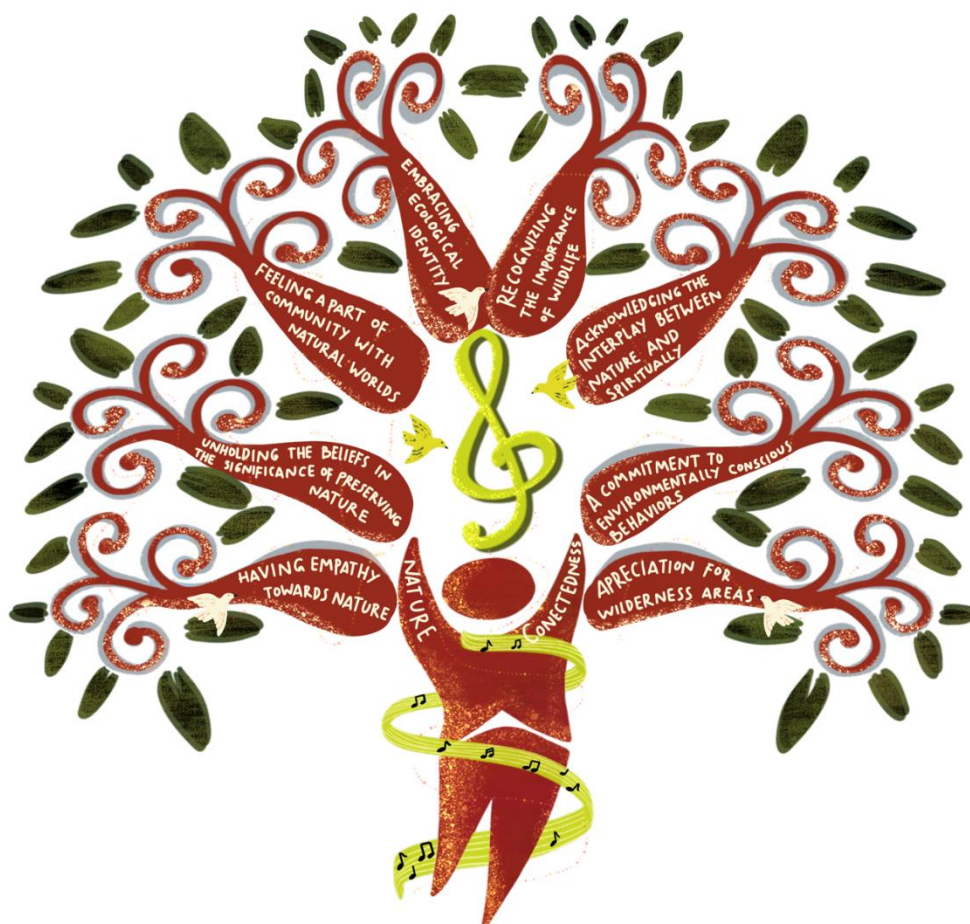


Figure 2 illustrates the development of students’ nature connectedness in the ecomusicology instruction about the Earth. The treble clef, notes, and bar lines that surround and are held by the human tree represent the ecomusicology instruction. The human tree him/herself symbolizes the heightened senses of oneness with nature, elaborated in the branches of the tree. The elaborations were derived from the

combination of quantitative results outlined in the questionnaire items and the qualitative findings from the open-ended questionnaires. Thus, following their participation in the ecomusicology instruction about the Earth, students exhibited an increase appreciation for wilderness areas, showcased a commitment to environmentally conscious behaviors, acknowledged the interplay between nature and spirituality, recognized the importance of wildlife, embraced ecological identity, and felt a part of community with the natural world. Furthermore, the students held positive perspectives on the importance of preserving nature and displayed empathy towards nature.

### Findings of Nature Interests

This study further unraveled the quantitative results of students' interests in nature following their participation in ecomusicology instruction about Earth, as shown in Table 2.

**Table 2**

*The Result of Wilcoxon Signed-Rank Test for Nature Interests*

Domains & Items	<i>n</i>	Pre-Median ( <i>Mdn</i> )	Post-Median ( <i>Mdn</i> )	<i>p</i> -value*	<i>Z</i>	Effect Size ( <i>r</i> )**	Effect Size ( <i>r</i> ) in Percentage
<b>Emotions</b>							
• I find it exciting to deal with nature.							
• Learning about nature is fun for me							
• When I am engaged in nature, I am very concentrated and forget everything around me.							
<b>Cognition</b>							
• I would like to know much more about nature.							
• I would like to learn more about nature.	11	3.1	3.3	.042	2.0	.72	72%
• In my free time I often deal with topics related to nature.							
<b>Valuation</b>							
• I find it meaningful to be involved with nature.							
• I think it's important to be well informed about nature.							
• The subject of nature is important to me.							

### Notes:

\**p*-value < .05 is statistically significant

\*\* effect size range (.0 to < .20 = no effect; .20 to < .30 = small effect; .30 to < .50 = moderate effect; and ≥ .50 = large effect) (Dong, et al. 2021)

Table 2 presents the finding of the Wilcoxon Signed-Rank test for nature interests. The result indicated a statistically significant difference in students' interests in natural world before ( $Mdn = 3.1, n = 11$ ) and after ( $Mdn = 3.3, n = 11$ ) the ecomusicology instruction, with  $Z = 2.0, p = .042$ . This result accepted the second hypothesis of this study ( $H_2$ ). Furthermore, the effect size was .72, suggesting that the ecomusicology instruction had a substantial impact, contributing to a 72% development in students' nature interests.

This study also successfully answered research question: (1) how is the nature interests of EFL students in the ecomusicology instruction about Earth? It found from the open-ended questionnaire that students developed strong interests in natural world after engaging in the ecomusicology instruction. Specifically, SS3 and SS7 expressed heightened interests in nature, attributing it to the significance of nature for the existence of living beings and appreciating its beauty.

“Very interested, because nature has a big impact on the survival of the creatures in it. So, I'm very interested in studying nature so I know what I should do and why I shouldn't do it.” (SS3, *open-ended questionnaire, nature interests*)

“Very interested, because nature is beautiful when we can preserve it.” (SS7, *open-ended questionnaire, nature interests*)

SS6 and SS8 also exhibited increased interests in natural world following the instruction. They gained more knowledge about the current situation of nature, recognized the importance of caring for it, and appreciated the playful aspects of nature.

“For me, I've learned that this song gives me image about our world today, and it make me interested in nature.” (SS6, *open-ended questionnaire, nature interests*)

“I feel interested in discussing nature more deeply because I think talking about nature is something very important and also fun.” (SS8, *open-ended questionnaire, nature interests*)

Above all, the integrated quantitative and qualitative findings demonstrated an increase in interests in nature among students following their participation in the ecomusicology instruction about the Earth. A visual representation of these interconnected quantitative and qualitative findings is encapsulated in Figure 3.

**Figure 3***The Students' Interests to Nature in the Ecomusicology Instruction about the Earth*

Figure 3 elucidates the development of students' interests in nature in the ecomusicology instruction about the Earth. The treble clef, notes, and bar lines that surround and are held by the human represent the ecomusicology instruction. The plants, rocks, trees, and birds represent the diverse entities in nature. The love symbolizes the strong interests in nature, elaborated in the branches of the tree. The elaborations were derived from the combination of quantitative results outlined in the questionnaire items and the qualitative findings from the open-ended questionnaires. Thus, following their participation in the ecomusicology instruction about the Earth, students harbored positive emotions to nature and posed a willingness to be more knowledgeable about nature. Additionally, students posed positive valuation to nature, as reflected in the items of questionnaire in the valuation domain, suggesting a favorable worldview regarding their engagements with nature as humans.



## Discussion

The integrated quantitative and qualitative results revealed improvements in students' nature connectedness and interests through the ecomusicology instruction about the Earth. In the light of nature connectedness conceptualization echoed by Nisbet & Zelenski (2013), the results indicate that the ecomusicology instruction could make EFL students feel oneness or unity with nature. Additionally, based on the delimitation of nature interests by Kleespies, et al. (2021), the results suggest that the instruction contributes to cultivating students' positive emotions to nature, a willingness to learn about nature, and a favorable valuation to nature. These results extend the findings of study by de Moya Martínez & Syroyid Syroyid (2021), music serves as a powerful tool for raising environmental awareness, promoting cares, and instilling environmental values. In addition, the results also expand the significances of ecomusicology in foreign language education which encourage learners' motivation to delve into nature-related topics, elicit positive emotional responses, foster critical thinking, nurtures a sense of global citizenship, and promote environmental literacies (Summer, 2021). This study contributes to adding new insights, showing that music, when studied through an ecocritical lens and applied in foreign language instruction, can enhance connection with nature and interests in the natural environment.

The observed results of this study can be ascribed to the inherent nature of music and the ecomusicology instruction. Music, functioning as a conduit for environmental sustainability, stimulates the emotions and moods (Prior, 2002) and prompts thoughts on environmental issues (Publicover, et al., 2017) among students. The ecomusicology instruction, which amalgamates music, culture, and nature (Allen, 2012) within the context of environmental crises (2013), also play a critical role in explaining the results. This instructional approach provides students with the opportunity to engage in ecocritical discussions or analyses of various musical themes: musicians, music artefacts, music productions, and their impact on environment, fostering students' understanding and critical awareness of the intricate relationships underlying environmental issues affecting the Earth. With this comprehension and ecocritical awareness, students reflect on their presence and actions within the Earth's ecosystems. This reflection leads to the development of a sense of community or oneness with nature. The quantitative results corroborate this assertion, the ecomusicology instruction had a strong effect on nature connectedness, contributing to an 88% increase in students' nature connectedness. Furthermore, armed with knowledge of negative impacts of anthropogenic perturbations on Earth's ecosystems, students would also consider the necessity to protect nature and feel empathy towards it. The perspective and feeling of empathy contribute to establishing a sense of inclusion with nature. The qualitative results confirm this assertion; students' connection with nature was evident in their perspectives on the significance of preserving nature and their empathy towards it.

Beyond fostering the nature connectedness, both the nature of music and the ecomusicology instructional approach play crucial roles in cultivating students' interests

in nature. Interests in nature are viewed as individuals' positive emotions to nature, willingness to learn about nature, and a favorable valuation to nature (Kleespies, et al. (2021). The musical elements, such as the beautiful notes and melodies of the song "Earth" by Little Dicky carrying stories and messages about the importance of protecting and love the Earth, contribute to making the learning experience about nature more enjoyable for students. Consequently, following their participation in the instruction, the quantitative results showed that the ecomusicology instruction had a substantial impact, contributing to a 72% development in students' nature interests. The results indicated that students reported harboring positive emotions to nature, expressing a willingness to be more knowledgeable about nature, and displaying positive valuation to nature. The results align with the assertion of Uitto & Saloranta (2010), echoing the importance of nature interests for maintaining individuals' intrinsic motivation to deepen their knowledge of nature and pro-environmental behaviors. Furthermore, recognizing that interests in nature are also no longer viewed as an individual preference; rather, signify a sense of responsibility and concern for environmental well-being (Neurohr et al. 2023), the qualitative results confirmed this perspective. Students, in their responses to in open-ended questions, indicated strong interests in nature, attributing it to the importance of caring for nature for the existence of ecosystems, concerns about the current situation of nature, and appreciation for the beauty and playfulness aspects of nature.

The results of this study also further solidify the roles of music and its artifacts in English as a foreign language (EFL) education, as initially proposed by Summer (2021), where they are predominantly used as teaching materials (Rantung, et al., 2023) and investigated for their impacts on improving students' English proficiency (see Yuen, 2022). This study reveals that music and its artefacts, when discussed through the lens of ecomusicology, can also serve as a pathway to foster EFL students' nature connectedness and interests. Consequently, the incorporation of digital art forms, such as music, should be continuously encouraged in English education. This integration addresses sustainability issues by cultivating strong interests in nature and fostering positive relationship between humans and nature. It responds to the explicit need for ways in which the ELT field can contribute to tackling sustainability crises, as pronounced by Katunich & Goulah (2020). Additionally, the results of this study underscore that the field of ELT holds the potential to promote a sense of inclusion with nature and interests in nature among EFL students. These results provide additional insights, complementing the assertions made by Xiong (2014) on the social responsibility of the ELT field in cultivating ecological thinking and critical awareness, in addition to developing English proficiency.

### **Conclusion, Limitation, and Implication**

The study aims to assess the impact of an ecomusicology instruction about Earth on EFL students' nature connectedness and interests. The integrated quantitative and qualitative results revealed improvements in both areas. Quantitatively, there was a

significant difference in students' nature connectedness and interests before and after participating in the ecomusicology instruction, with an 88% increase in nature connectedness and a 72% increase in nature interests. Qualitatively, students' connection with nature was evident in their perspectives on the significance of preserving nature and their empathy towards it. Additionally, students expressed strong interests in nature, attributing it to the importance of caring for nature for the existence of ecosystems, concerns about the current situation of nature, and appreciation for the beauty and playfulness aspects of nature.

Despite the success of this study, two limitations should be acknowledged. First, the absence of a control instruction for comparison with the ecomusicology intervention hinder a more robust statistical judgement of the significance difference in the increase of students' nature connectedness and interests. This study addressed this limitation by providing qualitative evidence. However, further studies are still encouraged to incorporate a control instruction and involve possible covariates that could elucidate the results of ecomusicology instruction on nature connectedness and interests. Second, this study exclusively concentrated on environmental sustainability values due to ecomusicology instruction. Subsequent studies may explore the impact of the instruction on EFL students' English proficiency.

This study adds novel practical implications to the fields of ecomusicology and EFL education. Ecomusicology, as an interdisciplinary study integrating music, culture, and nature, can serve as a pathway to develop individuals' sense of oneness and strong interests in nature and be applied in English as a Foreign Language (EFL) education. In this case, ecomusicology can be seen as a form of environmental humanities in educational practice. Furthermore, this study suggests that Eco-ELT, the study and teaching of environmental issues in ELT (Saiful, 2023), can incorporate ecomusicology to enhance students' environmental sustainability values: nature connectedness and interests. The attempts of integrating ecomusicology into ELT should also be more encouraged, as ecomusicology instruction in ELT provides interesting and joyful learning experiences related to both natural world and English language for students.

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**Appendix**

## Ecomusicology Discussion Questions

<b>Musicians</b>	
Artist(s)	(1) Who is/are the singer(s) of the song? (2) What are their personal interests in singing the song?
History	(1) When was the song was released? (2) What was happening at that time in the world/planet?
<b>Music Artefacts</b>	
Content	(1) In your views, what is the song all about? Why the song matter? (2) What can be criticized about the song, its content and display?
Person	(1) Who is addressed in the song? / Whom is the song for? (2) Are there specific names/people mentioned? If yes, who? And why?
Place	(1) Is it a global song or does it refer to specific places? (2) Which places are dealt with?
Other beings	(1) Are there any animals involved in the song? How does the song show the animals? Why so? Are the animals specifically land-based animals? Or are there other animals from ocean or air presented? (2) Is there any representation of plants? How does the song present the plant? Why so? Are the plants from land-based or from the ocean too? (3) How are the presentation of nature in general in the song?
<b>Music in Actions (Music Analysis)</b>	
Instruments	(1) Which music instruments are used or can be heard? (In different part of the song)
Singer	(1) Who sings the song? (e.g., female/male/group/duo/solo?) (2) Why does this composition of singer matter for the song?
Feelings	(1) How does the song feel to you? (2) How does the song feel to the listeners/publics? (See the YouTube online comments)
<b>Music in Actions (Environment)</b>	
Reception	How can the song be listened to? And which opportunities does the artist provide to encourage sustainable music reception?

