

EMPOWERING YOUNG LEARNERS: INTEGRATING CLIMATE CHANGE EDUCATION WITH BILINGUAL PICTURE BOOKS IN ELT

Cantika Putri

Program Magister Pendidikan Bahasa, Universitas Sriwijaya, Palembang, Indonesia
Email: cantikapj@gmail.com

Sary Silvhiany*

Program Magister Pendidikan Bahasa, Universitas Sriwijaya, Palembang, Indonesia
Email: ssilvhiany@unsri.ac.id

Rita Inderawati

Program Magister Pendidikan Bahasa, Universitas Sriwijaya, Palembang, Indonesia
Email: rita_inderawati@fkip.unsri.ac.id

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Abstract: Climate change is a global issue that impacts many people around the world. In recent years, several areas in South Sumatra have experienced the uneven impacts of climate change, especially forest fires and drought. Reflecting on the environmental problems that occur, this is closely related to the behavior of the community. Therefore, climate change education must be provided from the beginning, especially to young learners. This research, conducted at SD IT Harapan Mulia Palembang, aims to explore the potential of bilingual picture books in fostering a sense of responsibility and concern for the environment among young learners. By introducing climate change concepts in an accessible and relevant way, this study seeks to empower children to become advocates for environmental sustainability in their communities. Additionally, it aims to improve language skills and reading interest among young learners. This research involved 24 young sixth grade elementary school students, a stakeholder, and two English teachers through a mixed methods approach, questionnaires and semi-structured interviews. The findings of this research reveal the enthusiasm of young learners in using bilingual picture books about climate change in the classroom. Young learners have their own characteristics of books to use, some of which are based on themes and illustrations, story content, use of two languages, number of pages, and interactive elements such as crossword puzzles or short exercises that can hone their language skills. Therefore, researchers suggest that bilingual picture books can be developed and applied as effective and attractive learning media for young learners in English Language Teaching class.

Keywords: *climate change education; English for Young Learners; bilingual picturebooks; English language teaching.*

INTRODUCTION

Climate change is a global issue that is intensively emerging and being studied in various state policies. This is because climate change is considered a major threat to ecosystems, biodiversity and health (Calvin et al., 2023). Framework Convention on Climate Change (UNFCCC) climate change came to the conclusion that climate change is primarily cause by human activities that change the composition of the global atmosphere (Bevacqua et al., 2020; Hsu et al., 2017; Skougaard Kaspersen et al., 2017).

Considering the magnitude and wider impacts of climate change, multidisciplinary approach to

climate change mitigation is necessary. United Nations, through its agencies, has prioritized programs addressing the climate change. One of the United States' Sustainable Development Goals (SDGs) emphasizes the needs for students to acquire essential knowledge to advance sustainable development to protect our planet (Lough, 2023).

UNESCO's education for sustainable development goals advocate for strengthening the capacities of the nation to provide climate change education in all level of education through integrated components of pedagogy, learning contents, learning outcome, and societal transformation (UNESCO, 2021; UNESCO

Office Bangkok and Regional Bureau for Education in Asia and the Pacific, 2024; United Nations Educational Scientific and Cultural Organization, 2020). The program outcomes focus on good quality of education and empowerment of young generations to be aware of and take actions on climate change (Chaleta et al., 2021; Kopnina, 2020).

At the practical level, (Monroe et al., 2019) highlighted the need to identify climate change education strategies to effectively equip individuals with the knowledge and skills needed to meet this challenge. Quantitative studies on knowledge, belief, and attitude of preservice teachers and secondary teachers have shown the lack of integration of climate change education in ELT (Fathinah & Silvhiany, 2024; Rahmadhani & Silvhiany, 2024; Silvhiany, Rahmadhani, et al., 2023).

Young learners especially need education to understand the causes, impacts, and solutions of climate change. Without adequate training, they may not understand the severity of the problem or the need to mitigate the impact. Climate change education for young learners can actually be integrated into literacy learning (Putri & Silvhiany, 2022) through the use of children's literature. Research has shown the impact of reading children's literature in raising awareness of multiple issues, such as diversity (Durriyah et al., 2023) and the connection between reading and writing (Savira & Silvhiany, 2022).

(Cutter-Mackenzie & Rousell, 2019; Rousell & Cutter-Mackenzie-Knowles, 2020) emphasize the importance of giving children and young people a "voice" and "hand" in tackling climate change. By providing education appropriate to their age and level of understanding, people can help them make a positive impact on climate mitigation and change efforts. For students, learning about climate change can engage them and allow them to develop a sense of agency and responsibility for the environment and future generations.

Education plays an important role in building the resilience and preparedness of young students, equipping them with the knowledge and skills to face the challenges posed by a changing climate. By integrating climate change education into school curricula and activities, people can empower children to be responsible advocates and environmental stewards. Additionally, climate change education for young students is important in supporting the culture of sustainability (Duggan et al., 2021).

In short, the need to provide climate change education integrated into the school subjects. By equipping children with the knowledge, skills, and values they need to tackle this global challenge, we empower them to become agents of change in building the future. Through effective educational strategies that emphasize engagement, empowerment, and participation, we can inspire future generations to take significant steps to reduce climate change and protect the world for future generations. Climate change education is crucial for all types of education, including English Language Teaching (ELT) classrooms (Pratiwi & Silvhiany, 2023; Silvhiany et al., 2024). By integrating climate change education into various forms of education, we can effectively raise awareness and empower children to take action towards addressing this pressing global issue. Research by (Bahtić & Višnjić Jevtić, 2020) emphasizes the importance of involving children and young people as co-researchers in shaping the field of climate change education, highlighting the need for inclusive and participatory approaches. The socialization of climate change education from the early level is crucial and supported by the Ministry of Education, Culture, Research, and Technology through the provision of material on climate change and its impacts on the Pancasila Student Profile in the Independent Curriculum. To achieve this goal to be achieved immediately, it is necessary to have teaching media that suit the needs and characteristics of students. One way to incorporate climate change education into ELT classrooms for young learners is through the use of dual language picture books. (Daly et al., 2023) discuss the role of dual language picture books as resources for multilingualism, where children can inquire about language and content while engaging with climate-related themes. These picture books provide a platform for language learning and environmental awareness, allowing young learners to explore concepts related to climate change in a language they are comfortable with.

Moreover, the quality of children's bilingual picture books plays a significant role in promoting climate change education in ELT classrooms. (Prancisca & Chappell, 2022) emphasizes the importance of rethinking the quality of bilingual picture books to ensure they effectively convey messages about environmental conservation and sustainability. By selecting high-quality bilingual picture books with engaging illustrations and age-appropriate content, educators can create

immersive learning experiences that foster children's understanding of climate change and its implications. In addition to bilingual picture books, climate fiction can also be a valuable resource for integrating climate change education into ELT classrooms for young learners. (Lindgren Leavenworth & Manni, 2021) discuss the potential of climate fiction to stimulate young learners' thoughts and engage them in critical discussions about environmental issues. By incorporating climate fiction into language learning activities, educators can encourage children to explore diverse perspectives on climate change and develop empathy towards the environment.

Picture Book creators can serve as translanguaging writing mentors, contributing to the development of materials that promote climate change education in ELT classrooms. (Machado & Flores, 2021) highlight the role of picture book creators in fostering translanguaging writing practices, where multiple languages are used to convey complex ideas and emotions. By collaborating with picture book creators from diverse linguistic and cultural backgrounds, educators can access a wide range of resources to support climate change education in ELT classrooms. Picture book is a type of book that contains fiction or non-fiction stories presented in narrative form. Picture books can contain short stories, novels, autobiographies, biographies, children's stories, and so on. Picture books are usually written in prose using creative language to make stories more interesting and easy to understand. Picture books can be used as a source of entertainment, self-development, or learning, depending on the type of story presented and the purpose of the reader reading the book. In this study, picture books will be packaged in two languages, which is English and Indonesian. This is applied to make it easier for children to understand the contents of the story, increase understanding of grammar, and expand vocabulary. Picture books make it easier for students to imagine and feel almost the same situations as stories. Picture books are not only in the form of text, but are also accompanied by related pictures. In other words, children can see situations visually and develop their imagination. In line with this, story books are a type of book that combines the use of text and images to present aesthetic value.

In ELT classrooms for young learners, it is essential to adopt a holistic approach to climate change education that integrates language learning with environmental awareness and

action. Through interactive activities such as storytelling, role-playing, and project-based learning, educators can create dynamic learning environments where children can explore climate-related topics in meaningful ways. By incorporating climate change education into various forms of education, including ELT classrooms, the researcher can equip young learners with the knowledge, skills, and values needed to become active participants in addressing climate change and building a sustainable future for all (Maskana et al., 2024; Salma & Silvhiyani, 2024).

In understanding research, the researcher finds gaps—places where there is not enough information or study. From the work of (Mochizuki & Bryan, 2015) and (Li et al., 2021), the researchers see a need for more research on climate change education, especially for young learners. While some studies explore strategies for teaching about climate change in higher education (Silvhiyani et al., 2024; Silvhiyani, Kurniawan, et al., 2023), there is still much to learn about how to effectively educate children and young people on this important topic. Additionally, although research on bilingual picture books exists (Sun et al., 2022; Wiraatmaja et al., 2021; Wissman, 2020), there is a gap in understanding how these books can be used to integrate climate change education into English Language Teaching (ELT) for young learners. The research niche lies in the intersection of climate change education, bilingual picture books, and ELT for young learners. While climate change education is vital for preparing future generations to address environmental challenges, there is limited research on how to incorporate this topic into language learning contexts, especially for young learners who are still developing their language skills. By designing bilingual picture books that address climate change themes, educators can provide young learners with engaging resources that support both language acquisition and environmental literacy. This approach fills a gap in current research by offering innovative strategies for integrating climate change education into ELT curricula.

The novelty of this research lies in its focus on designing bilingual picture books specifically to support the integration of climate change education in ELT for young learners. While existing studies have explored the use of picture books in language learning contexts, few have examined their potential to convey complex environmental concepts such as climate change

(Muthukrishnan, 2019; op de Beeck, 2018). By creating bilingual picture books that feature climate change themes, educators can provide young learners with accessible resources that enhance their language skills while also fostering environmental awareness and understanding (Schneider-Mayerson et al., 2020; Swain, 2020). This innovative approach not only addresses a gap in current research but also offers a practical solution for educators seeking to incorporate climate change education into ELT for young learners. In summary, the research gap identified in previous studies highlights the need for more research on integrating climate change education into ELT for young learners.

Education for young learners in South Sumatra reflects unique dynamics involving various key factors such as quality of education, accessibility, cultural diversity, innovation in learning, and the role of parents and society. There are still issues with significant efforts to improve educational standards, especially in relation to children who live in rural and isolated areas which having access to an education. While regional and national governments are working to raise educational quality through initiatives like the "Smart Indonesia Program" and "Dana BOS", challenges like restricted access in facilities and infrastructure is still need to be solved.

Cultural diversity is also an important factor, as South Sumatra has a variety of ethnic and linguistic communities, which demands an inclusive approach to education. Innovations in learning, such as the use of technology and project-based approaches, have been adopted by some schools to increase learners' engagement. The role of parents and the community is also crucial, by involving them in school activities and making them aware of the importance of education. One of them is using bilingual picture book media, through this media all children can get equal information especially about climate change. It is not only focused on children who live in cities, but also in rural areas.

According to preliminary results from informal interviews with English teachers at SD IT Harapan Mulia Palembang, the use of bilingual picture books that address the climate change topic in the English learning process is extremely uncommon in classrooms. Regarding the increasing effects of climate change on daily life, it is critical to provide young learners, particularly in schools, with a fundamental understanding of climate change from an early age. Young learners can better absorb information when it is provided

interestingly, such as designing bilingual picture books. By those books that address climate change themes, educators can fill this gap and provide innovative resources that support both language learning and environmental literacy. This research niche offers a novel approach to addressing the urgent need for climate change education among young learners, paving the way for more effective and engaging instructional practices in the field of ELT by using bilingual picture books. As a result of their current awareness, individuals may foster environmentally conscious behavior and encourage good change in society as a whole.

The pre-production process involves an in-depth needs analysis, which includes Target Situation Analysis, Deficiency Analysis, Present Situation Analysis, and Strategy Analysis. The researcher aims to develop strategies for integrating bilingual picture book media on climate change into the English learning process in the classroom by conducting an in-depth investigation of young learners' and teacher perspectives. The study question is: How can the use and criteria for bilingual picture book media adapted to the particular needs of 6th-grade children at SD IT Harapan Mulia, allowing them to quickly process information about climate change?

METHOD

This research focuses on designing bilingual picture books to facilitate the integration of climate change awareness in the English language teaching class. This research uses a mixed methods strategy that combines quantitative and qualitative approaches. A quantitative approach obtained through questionnaires was used for data analysis. Then the information obtained from the interviews was analyzed using a qualitative approach. By using these two approaches, researcher can measure learners and teacher perceptions through questionnaires while gaining in-depth insights through semi-structured interviews.

The research was conducted at SD IT Harapan Mulia Palembang, involving a population of 130 students from five 6th grade classes, a stakeholder, and two English teachers. Sampling used purposive, which limited the research sample to one class consisting of 24 students, one stakeholder, and two English teachers. Data collection involved the use of questionnaires and semi-structured interviews. The inclusion of the participants was based on the considerations of

relevance and necessity. Bilingual books were designed to accommodate the needs to provide English learning media which integrates climate change education in the sixth grade as the transition to learning English at the upper level of middle school. Teachers and stakeholders were chosen to provide insights about curriculum integration.

The questionnaire used in this research follows the importance of needs analysis in designing learning materials (Spatioti et al., 2022). By using quantitative methods through questionnaires, researchers can identify the needs and aspirations of young learners regarding bilingual picture books about climate change. This helps ensure that the materials developed meet student needs. Questionnaire items are divided into three categories: Target Situation Analysis (TSA), Deficiency Analysis, and Present Situation Analysis (PSA). TSA focuses on the learner's needs to achieve certain learning goals, Deficiency Analysis evaluates the gap between the current situation and the target, while PSA evaluates current conditions and abilities. Approximately 40 varied items in the questionnaire were administered to grade 6 learners and teachers. In the process of collecting questionnaire data, researchers needed quite a long time due to the large number of questions. Besides that, there was some unfamiliar vocabularies in the questionnaire, it made the researcher have to explained. This approach allowed researchers to understand the learning context and explore areas where bilingual picture book materials can provide added value.

Apart from the questionnaire, the researcher also conducted semi-structured interviews with stakeholders and two English teachers. The researcher provided 10 questions which discussed about the context of English language teaching in elementary schools, variations in English literacy media, and the potential of bilingual picture books on the theme of climate change. In this process, researcher also needed several days to get complete information, because they have to adjust to the free hours of stakeholders and English teachers. By using this qualitative method, research obtains a broader and deeper perspective on how learning material can be applied effectively.

With this combination of quantitative and qualitative methods, research is able to explore various important aspects related to the integration of bilingual picture books in the learning process. This method provides a strong

foundation for developing materials that suit the needs and interests of young learners, as well as providing useful insights for educators and stakeholders regarding the application of bilingual picture books in broader educational contexts.

RESULTS AND DISCUSSION

This research examines the needs of students and the responses of English teachers also a stakeholder regarding the use of bilingual picture books about climate. The investigation was divided into two parts: survey and interview.

The students' needs viewed by the students

The data was obtained by considering students' viewpoints on their needs in target situation analysis (TSA), deficiencies analysis, and present situation analysis (PSA). The tables and figures in the article illustrate the predominant percentage of students' answers to each query in the questionnaire.

Target Situation Analysis (TSA)

This part focused on the students' needs, general intentions, and expectations in learning English. Table 1 displays the data collected.

Table 1. *The students' view on TSA*

No.	Question/Statement	Students' View	Percentage
1.	The importance of learning English	To help students to communicate with other people	66.7%
2.	The students' expectation toward learning English	To interact orally using English fluently in future careers	79.2%
3.	English language learning is directed to learning with more specific topics	Agree	58.3%
4.	Education about climate change should be included in the primary school curriculum	Agree	50%
5.	Using climate change as a theme for English teaching can make learning more interesting and appropriate for students	Agree	54.2%

According to Table 1, students perceive the significance of learning English, with 66.7% expressing that they believe English is crucial for effective communication. Additionally, 79.2% of students believe that English facilitates interaction. The survey indicates that specific English learning topics can be tailored to students' needs (58.3% agree), with 50% agreeing that climate change is a suitable inclusion in the primary school curriculum. Moreover, 54.2% agree that the topic of climate change can enhance the overall appeal of the learning process.

Deficiency analysis

In this section, it examined the current preferences and needs of the students, as well as the deficiencies or inadequacies in their target situations. Table 2 presents the data about students' current preferences and needs related to topics or input for learning bilingual picture books.

Table 2. *The students' view on current needs*

No	Questions/Statement	Students' View	Percent age
1.	Teachers play an important role in shaping my character so that I care about the impacts of climate change.	Agree	54.2 %
2.	Teachers play an important role in disseminating knowledge of climate change.	Strongly Agree	58.3 %
3.	Teachers play important role in implementing climate change prevention efforts in everyday life.	Agree	62.5 %
4.	Using bilingual picture books as teaching material about climate change	is needed	50 %
5.	I may have misconceptions about climate change that need to be addressed through education.	Agree	54.2 %

Table 2 emphasized the significant role of teachers in molding students' character to raise awareness about the impacts of climate change, with 54.2% agreeing. Furthermore, 58.3% of students strongly agreed that teachers also play a crucial role in disseminating knowledge about

climate change. This understanding of climate change can be utilized as a preventive measure against its effects, as supported by 62.5% of students. Consequently, there is a demand for learning materials on climate change, with 50% of students expressing a need for bilingual picture books. However, there might be a misconception among students (54.2%) regarding climate change, emphasizing the importance of addressing this in an educational setting.

6. Climate change education can help me to develop language skills, such as reading, writing, speaking, and listening.
24 jawaban

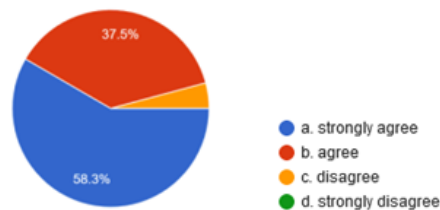


Figure 1. *Climate change education impacts language skills development*

According to Figure 1, a majority of students (58.3%) strongly agree, and 37.5% agree that climate change education can assist in enhancing language skills, including reading, writing, speaking, and listening.

11. Using bilingual picture books can support learning and engage in climate change education.
24 jawaban

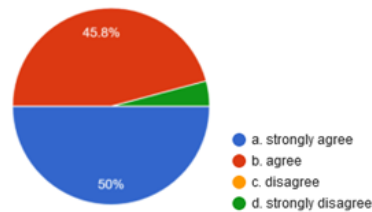


Figure 2. *Climate change bilingual picture book involvement in education*

The information represented in Figure 2 indicates that employing bilingual picture books receives strong support from students for enhancing their learning and engagement in climate change education, with 50% strongly agreeing and 45.8% in agreement.

Present Situation Analysis (PSA)

This section focused on the materials already studied and supplied, assessing students' current proficiency in English, and their knowledge of climate change. The analysis of the present situation (PSA) serves as a pivotal element in

designing bilingual picture books about climate change.

Table 3. *The existing materials learned and students' proficiency level*

No	Questions/Statement	Students' View	Percentage
1.	Students' current proficiency level of English	Intermediate	50 %
2.	Students' current literacy (reading, writing, listening, and speaking) skills in English	Good	54.2 %
3.	In the teaching and learning process, my English teacher frequently provides bilingual picture books along with questions about climate change	Never	70.8 %
4.	I need more education about the causes and impacts of climate change, such as rising sea levels, extreme weather events, and their impact on biodiversity.	Strongly Agree	54.2 %
5.	I need to learn about appropriate actions as an individual and as a community to reduce the impacts of climate change.	Strongly Agree	52.2 %
6.	I need an education that suits my needs and interest in learning about climate change.	Strongly Agree	62.5 %
7.	I need to learn about the economic, social, and political factors related to climate change.	Strongly Agree	62.5 %
8.	I need an education that uses a variety of media and materials to learn about climate change.	Strongly Agree	66.7 %

According to Table 3, 50% of students have an intermediate level of proficiency in English. Additionally, a majority of students (54.2%) perceive their current literacy skills as good. However, 70.8% of students agree that their English teachers have not provided learning materials in the form of climate change bilingual picture books. Consequently, a significant portion of students (54.2%) strongly agree that they require materials on climate change for their

English learning. Furthermore, there is a strong consensus among students that they need to learn appropriate actions to mitigate the impact of climate change (54.2%).

In addition to catering to developmental and linguistic needs, the educational material should align with the curriculum objectives, ensuring a seamless integration into the elementary school curriculum. Collaborative efforts involving educators, curriculum developers, and environmental experts can contribute to the creation of effective and impactful materials. A well-designed Climate Change Education Program for elementary school should prioritize materials that are developmentally appropriate, linguistically accessible, culturally inclusive, and aligned with curriculum goals, fostering a meaningful and impactful learning experience (Axelrod et al., 2020).

Moreover, students express a desire for education tailored to their needs and interests in learning about climate change (62.5%), suggesting a focus on more topics related to climate change (62.5%), and a need for a variety of methods and materials in learning about climate change (66.7%).

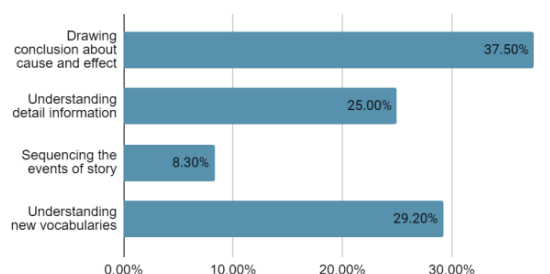


Figure 3. *Students' difficulties in reading*

According to the information presented in Figure 3, students encountered challenges in reading, with 37.5% agreeing that they faced difficulties in concluding cause and effect from reading texts. Additionally, 25% of students experienced challenges in understanding detailed information during reading. Some students encountered difficulties in sequencing the events of a story (8.3%), while others faced challenges in understanding new vocabulary (29.2%).

Table 4. *The students' view on current wants*

No	Questions/Statement	Students' View	Percentage
1.	Topic desired by students in reading bilingual picture books	Daily Life	54.2 %
2.	When reading text		95.8 %

	bilingual picture books, the form that suits me is...	accompanied by images inside two languages (English & Indonesia)	%
3.	A convenient way to read a bilingual picture book about climate change is ...	Directly (printed book)	79.2 %
4.	Bilingual picture books can be an effective medium for learning about climate change.	Agree	54.2 %
5.	Elementary schools should use bilingual picture books to teach about climate change	Often	58.3 %
6.	Number of pages of the most effective bilingual picture books on climate change	15-20 pages	54.2 %
7.	Translation of sentences in bilingual picture books	Very important	82.6 %

In Table 4, the preferred topic for learning through bilingual picture books, as indicated by 54.2% of students, is daily life. Notably, a significant majority of students (95.8%) expressed the need for bilingual picture books with text accompanied by images in both English and Indonesian languages. The preferred format for these books is printed (79.2%). Students believe that bilingual picture books can serve as an effective medium for learning about climate change, with 54.2% agreeing. Specifically, students recommend the use of bilingual picture books in elementary schools to teach climate change material (58.3%). Preferences regarding the length of these books revolve around 15-20 pages (54.2%). Furthermore, 82.6% of students consider translation to be very important.

Incorporating a diverse range of multimedia elements, including vibrant illustrations, interactive activities, and straightforward language, can significantly boost elementary students' comprehension of climate change concepts. Colorful visuals capture their attention and make complex ideas more accessible, creating an engaging and visually stimulating learning environment (Sun et al., 2022).

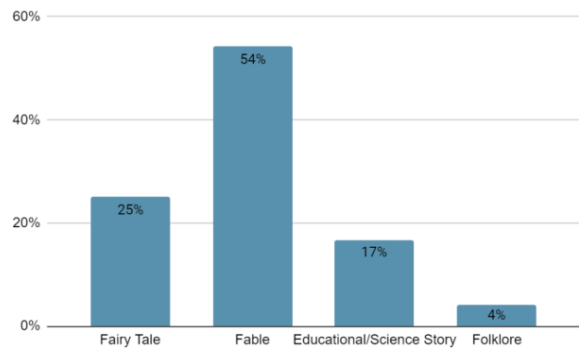


Figure 4. The most effective type of bilingual picture book for learning about climate change

Meanwhile, students also have preferences for the type of bilingual picture book for learning about climate change. The most favored type was fable (54%), followed by fairy tale (25%), education/science story (17%), and lastly, folklore (4%).

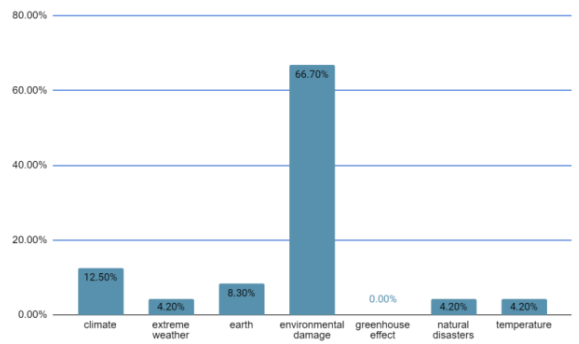


Figure 5. Aspects of climate change that need to be included in bilingual picture books

In designing a bilingual picture book centered around climate change, students identified certain crucial aspects that should be included. The highest importance was placed on environmental damage (66.7%), followed by climate (12.5%) and Earth (8.3%). Extreme weather, natural disasters, and temperature aspects were considered equally at 4.2%. Notably, none of the students considered the greenhouse effect to be a necessary inclusion in a climate change-based bilingual picture book.

Table 5. The students' knowledge about climate change and picture book

No.	Questions/Statement	Students' View	Percent age
1.	Students' knowledge about climate change	Good	37.5 %
2.	Students' knowledge about picture books	Good	47.8 %
3.	The aspects of Climate		37.5 %

climate change that students know				
4.	The way students know about climate change	external reading sources school		33.3 %
5.	The way students know about bilingual picture books	external reading sources school		37.5 %
6.	The scope of climate change and a bilingual picture book that the students know	In students' place only		37.5 %
7.	The students' knowledge level of climate change	Only as general information		37.5 %
8.	The students' knowledge level of bilingual picture book	Only as general information		50 %
9.	Thing students can do to prevent climate change	Saves usage energy at home		45.8 %

According to Table 5, students perceive their knowledge of climate change (37.5%) and bilingual picture books (47.85%) to be good. Their understanding of climate aspects comes from external sources, with 37.5% gaining knowledge from reading bilingual picture books outside of school. However, the students' awareness of climate change and bilingual picture books is limited to information from their immediate surroundings (37.5%). Consequently, their knowledge about climate change (37.5%) and bilingual picture books (50%) remains at a general level. In terms of practical measures, 45.8% of students actively engage in preventing climate change by conserving energy in their households.

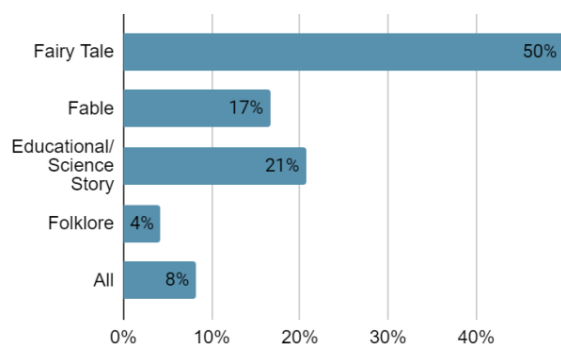


Figure 6. *The various types of bilingual picture books students know*

Lastly, Figure 6 presents data on the types of bilingual picture books that students are already familiar with. The most recognized type is fairy tale (50%), followed by educational/science story (21%), fable (17%), all types (8%), and lastly, folklore (17%). This information sheds light on the preferences and exposure of students to various genres of bilingual picture books, providing valuable insights for educators and curriculum planners aiming to enhance language acquisition and cultural awareness through diverse literary materials.

The students' needs viewed by the English teachers from the perspectives of the stakeholder
Based on the interview conducted with English teachers and the vice principal of academic affairs at SD IT Harapan Mulia Palembang, the teachers and stakeholder emphasized the significance of climate change and its importance in the educational context.

“Climate change is the alteration of the conditions in a specific region due to the influence of the weather and the atmosphere of that area. Young learners need to learn about climate change.”

“Climate change is the alteration of the Earth's atmospheric physical conditions, including temperature and distribution of rainfall, which has widespread impacts across various sectors of human life. Lessons on climate change are crucial for students to comprehend the climate in a particular region and anticipate the impacts arising due to such climate change.”

“Climate change is a condition where there is a difference in conditions compared to previous conditions in terms of Earth's temperature, weather, rainfall, and other factors related to climatology”

The interview emphasized that incorporating climate change into the curriculum, specifically through bilingual picture books, can serve as a powerful means to raise awareness and educate students. The teacher emphasized the potential of bilingual picture books to not only enhance language skills but also to instill essential environmental knowledge and values.

“It is already in the curriculum. The topic is about seasons and weather, with skills in listening, speaking, reading, and writing.”

“The discussion on climate change in grade 6 is under theme 6, sub-theme 3, covering topics such as global warming, characteristics of climate change, and ways to care for the Earth.”

“As far as I know, yes, there have been discussions about climate change in the curriculum, especially in the independent curriculum. The topic can be found in discussions about seasons and weather in phase C in elementary grade 5 or 6.”

To facilitate effective learning, incorporating bilingual elements into the picture book becomes crucial. The content of the educational materials should be tailored to spark curiosity and foster a sense of environmental responsibility. Moreover, considering the diverse linguistic backgrounds of elementary students, incorporating bilingual elements in the educational materials can further enhance comprehension and inclusivity. This approach not only supports students with varying language proficiencies but also encourages a broader appreciation for perspectives related to climate change. Research by (Swain, 2020) indicates that integrating language learning with climate change topics enhances comprehension and fosters a sense of familiarity, inspiring students to articulate their perspectives on climate change in both languages. This aligns with the program’s objective of preparing students to communicate about environmental topics in different languages.

However, there are limitations in terms of materials and media used to educate students about climate change at SD IT Harapan Mulia Palembang. Frequently, teachers resort to employing descriptive reading texts to enhance reading comprehension.

“We often use descriptive text reading comprehension materials.”

“The teacher’s guidebook and several other supporting books.”

“Since I am an English teacher, I mostly use descriptive and narrative text types.”

As per the information provided by the English teacher, no bilingual picture books have been utilized thus far for teaching about climate change.

“I have not used bilingual picture books to introduce climate change to young learners.”

“Not yet”

“Never”

Utilizing bilingual picture books for teaching about climate change issues is deemed important, as it can also enhance students' productive skills. The visual and linguistic elements of bilingual picture books offer a unique and engaging way to present complex topics like climate change.

“In my opinion, the role of bilingual picture books is extremely important in the learning process because they greatly assist young learners in understanding the text easily, especially for those with various English language skills levels.”

“Bilingual picture books are important in supporting the learning process. With the presence of bilingual books accompanied by pictures, young learners will find it easier to imagine the conditions or events of climate change compared to books filled only with text. As a result, young learners will understand the material more quickly and also acquire new vocabulary.”

“It's important, although I haven't implemented it yet because it helps students to understand the material in the book more easily.”

Based on the interview, the teacher mentioned that the suitable type of bilingual picture book for young learners can be fairy or fable stories that relate to the topic of climate change. The teacher's insights emphasize the importance of selecting engaging and relatable content that captures the interest of young students. By incorporating elements of fantasy and storytelling, such as fairy tales or fables, educators can make the learning experience more enjoyable and accessible for elementary school students.

“The suitable type of bilingual picture books for young learners is fiction stories, like fairy tales or fables. An appropriate climate change topic is the variations in weather and seasons in our country (Indonesia).”

“Young learners are usually more interested in books that are imaginative, such as stories about humans and animals. The topics used can be natural disasters or environmental damage in their living environment, such as floods caused by the habit of littering.”

“Bilingual fiction books about natural disasters and environmental damage are important because they are closely related to children’s daily surroundings.”

The importance of creating an engaging and visually appealing bilingual picture book was emphasized in the interview. The teacher highlighted that the overall quality, including the cover design, color scheme, and interesting illustrations, plays a crucial role in capturing the attention of young learners.

“Suitable criteria for bilingual picture books for young learners according to cover include an appealing and full-color, the use of age-appropriate basic vocabulary in the content, and for book anatomy has legible font size for easy reading and understanding.”

“The criteria for suitable books for students are colorful covers with attractive pictures to engage students in studying the book, content that aligns with the learning material and contains colorful images relevant to the learning material, and clear font usage to ensure students do not have difficulty understanding the book’s content.”

“In terms of the cover, it should be attractive to engage young learners to interact with the book. In terms of content, it should be easily understandable by young learners, and in terms of anatomy, it should use appealing fonts and appropriate font sizes and spacing.”

Based on this interview, it uncovers a compelling need to design bilingual picture books addressing the topic of climate change for elementary school students. The recognition of students’ familiarity and interest in genres like fairy tales and educational/science stories signifies the promising potential of bilingual picture books as effective educational tools. By designing materials in a bilingual format, we can not only enrich language skills but also instill crucial knowledge and values about environmental issues right from the early stages of education. By incorporating climate change content into bilingual picture books, we pave the way for a multifaceted learning experience, contributing not only to language proficiency but also to a deeper understanding of critical global issues. This educational approach not only addresses language acquisition but also nurtures a sense of environmental responsibility, equipping

students with the awareness and knowledge needed to become informed global citizens.

In the learning process, young learners need to understand the various types of weather, the different seasons in their country, and the weather changes that occur during each season. This foundational knowledge not only contributes to their understanding of the natural world but also helps them develop a sense of environmental awareness from an early age.

“Young learners should understand the various types of weather, different seasons in their country, and the weather changes that occur during each season.”

“Understanding the causes and effects of climate change enables students to comprehend and be vigilant about potential climate change occurrences. Moreover, they may take further action to preserve their surrounding environment.”

“Understanding the factors and impacts of climate change so that students have a greater awareness of climate change.”

In the learning process, young learners are expected to develop several key abilities when exploring the topic of climate change. The interconnected abilities empower young learners to actively engage with their surroundings, promoting a holistic and informed perspective on the complexities of climate change.

“The expected abilities when young learners learn about climate change are the ability to identify types of weather and seasons, the ability to analyze different weather patterns and seasons, and the ability to find information about various types of weather and seasons in climate change.”

“Reading skill with accurate pronunciation and also writing skill with proper English language structure.”

“By using bilingual picture books, it helps to increase reading comprehension skills for young learners.”

Bilingual picture books about climate change have a profoundly positive impact on young learners. inspire curiosity, nurture language skills, and instill a foundational understanding of environmental stewardship, preparing the next generation to become informed and environmentally conscious global citizens.

“The influence of bilingual picture books used in climate change education has a significant positive impact. By using bilingual picture books, young learners can easily understand what climate change is, as well as the types of weather and seasons in countries around the world.”

“Yes, of course, it can certainly have a positive impact on students to be more caring about their surroundings.”

“Yes, of course, because there is basic knowledge, and the teacher can explain more.”

Hence, based on the teacher’s explanation, there is a clear necessity to design bilingual picture books about the topic of climate change for elementary school students. The identified familiarity and interest of students in certain genres, such as fairy tales and educational/science stories, underscore the potential effectiveness of using bilingual picture books as educational tools. Creating materials that address climate change in a bilingual format can serve not only to enhance language skills but also to instill important knowledge and values related to environmental issues from an early age. (Niland, 2023) states picture books offer settings that help in the language and literacy development of young readers. Not only do they often include both spoken and visual texts, but they also include children in the process of creating meaning by encouraging discussion and creative thinking. This aligns with the intention to provide engaging and informative resources that contribute to students' holistic development and understanding of critical global issues.

CONCLUSION

The findings of this study emphasize a strong need for bilingual picture books addressing climate change in elementary school education. Specifically, there is a clear demand for such materials within the curriculum designed for young learners. The needs analysis revealed learners expressed a strong desire for reading materials that cover topics related to climate change. This sentiment is supported by insights from both elementary school teachers and a stakeholder, who agree that integrating climate change issues into educational materials aligns well with the current curriculum objectives for young learners. These findings provide valuable insights into the specific needs, preferences, and desires regarding bilingual learning materials,

particularly within the context of climate change education. They form a strong foundation for creating bilingual picture books tailored to meet these unique requirements. This research makes a significant contribution in understanding the important criteria for bilingual picture books about climate change in basic education, especially for teachers, policymakers and researchers.

Teachers can enhance young learners' comprehension and add excitement to their lessons by utilizing bilingual picture books interactively in conjunction with group discussions, practical exercises, and group projects that address climate change. Additionally, they are encouraged to collaborate with parents in family activities that carry over what they learn in school to the home. Teachers must obtain specialized training on the use of bilingual picture books, as well as bilingual teaching strategies and approaches for assessing learners' understanding, in order to increase their efficacy.

Policymakers are advised to include bilingual picture books on climate change in national curricula to ensure this important topic is taught in primary education. Additionally, they must provide sufficient resources and funding for the production and publication of bilingual picture books, encouraging publishers and writers to produce educational resources that are appropriate for young readers. Furthermore, in order to guarantee that the materials produced stay up-to-date in regard to the most recent developments in environmental education, governments should support additional research on bilingual picture books and climate change education.

In order to gain a deeper understanding of the influence of bilingual picture books on learning and climate change awareness, researchers are also recommended to use a variety of study methodologies, including as surveys, interviews, and case studies. For the generality of the findings and to extend the study's scope, cross-cultural research is also required. Research that crosses cultural boundaries offers a more thorough understanding of the requirements of learners in various environments. As a way for research to be realistically applied and to promote good education policies, researchers must work together with teachers and policy makers to facilitate the application of study findings in primary school education.

This research highlight the importance of bilingual picture books about climate change in

primary school education, but it has several limitations. The relatively small sample size and limited locations may reduce the possibility of generalizing the results to the entire population of elementary school learners. Additionally, a short research period may not be sufficient to evaluate the long-term impact of using bilingual picture books in climate change learning. The research methods used are also less diverse, so further research is needed with a more comprehensive approach, including various qualitative and quantitative methods. To overcome these limitations, future research needs to expand coverage to different regions and cultures, and involve more participants and stakeholders.

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Cantika Putri, Sary Silvhiany, & Rita Inderawati

Empowering young learners: Integrating climate change education with bilingual picture books in ELT