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Eco-Linguistics in Action: Themes and Trends in Environmental Projects

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Abstract

Environmental project-based language learning (EPBLL) is a promising approach for promoting language acquisition, environmental consciousness, and sustainable education among young learners. However, the present state of research on EPBLL in English language education for early learners needs to be better understood. This bibliometric study examines the state of EPBLL research over the past ten years. We conducted a bibliometric analysis of articles published between 2013 and 2023 that met our inclusion criteria using Scopus. Our analysis focused on publication trends, journal sources, citation counts, and identifying major research topics and themes in EPBLL research. Our study found a steady increase in EPBLL publications over the past ten years, with numerous journals contributing to this research field. We identified several important themes and areas of emphasis, such as the role of technology in EPBLL, the impact of EPBLL on language acquisition and environmental awareness, and the effectiveness of various pedagogical approaches to EPBLL. Our findings have significant implications for educators, researchers, and policymakers promoting sustainable education and language acquisition through project-based learning. This study provides insights into the state of EPBLL research in English language education for young learners and highlights essential research themes that can inform future studies in this area.

[Pembelajaran Bahasa Berbasis Proyek Lingkungan merupakan pendekatan yang menjanjikan dalam mendorong pemerolehan bahasa, kesadaran lingkungan, dan pendidikan berkelanjutan pada pembelajar usia dini. Namun, kondisi terkini penelitian tentang EPBLL dalam pendidikan bahasa Inggris bagi anak-anak masih belum sepenuhnya dipahami. Kajian bibliometrik ini bertujuan untuk menelaah perkembangan penelitian EPBLL selama sepuluh tahun terakhir. Peneliti melakukan analisis bibliometrik terhadap artikel-artikel yang dipublikasikan antara tahun 2013 hingga 2023 yang memenuhi kriteria inklusi, dengan menggunakan basis data Scopus. Analisis tersebut difokuskan pada tren publikasi, sumber jurnal, jumlah sitasi, serta identifikasi topik dan tema utama dalam penelitian EPBLL. Hasil studi menunjukkan peningkatan yang stabil dalam jumlah publikasi EPBLL selama satu dekade terakhir, dengan kontribusi dari berbagai jurnal dalam bidang ini. Beberapa tema penting berhasil diidentifikasi, seperti peran teknologi dalam EPBLL, dampak EPBLL terhadap pemerolehan bahasa dan kesadaran lingkungan, serta efektivitas berbagai pendekatan pedagogis dalam pelaksanaan EPBLL. Temuan ini memiliki implikasi signifikan bagi pendidik, peneliti, dan pengambil kebijakan dalam mendorong pendidikan berkelanjutan dan pemerolehan bahasa melalui pendekatan pembelajaran berbasis proyek. Studi ini memberikan wawasan terhadap penelitian EPBLL terkini dalam pendidikan bahasa

Inggris untuk pembelajar usia dini serta menyoroti tema-tema penting yang dapat menjadi pijakan bagi penelitian selanjutnya di bidang ini.]

Keywords: bibliometric analysis; environmental education; project-based language learning; young learners

Introduction

Educators and academics have acknowledged the need to integrate environmental consciousness and sustainable education into language acquisition.[1] Environmental education has gained increasing recognition in language instruction, particularly for young learners. Environmental Project-Based Language Learning (EPBLL) is an emerging approach that integrates language instruction with environmental content to foster language development, critical thinking skills, and environmental responsibility.[2]

EPBLL allows young learners to actively investigate real-world environmental problems, collaborate with peers, conduct research, and develop hands-on solutions.[3] EPBLL provides young learners a

[1] Sibo Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field," *Ampersand* 3 (2016): 108–16, https://doi.org/10.1016/j.amper.2016.06.002; Rani Muthukrishnan, "Using Picture Books to Enhance Ecoliteracy of First-Grade Students," *The International Journal of Early Childhood Environmental Education* 6, no. 2 (2019): 19–4, https://files.eric.ed.gov/fulltext/EJ1225653.pdf; Wenjuan Zhou, "Ecolinguistics: A Half-Century Overview," *Journal of World Languages* 7, no. 3 (February 26, 2022): 461–86, https://doi.org/10.1515/jwl-2021-0022.

[2] Nadiroh Nadiroh, Uswatun Hasanah, and Vania Zulfa, "Behavioral Geography: An Ecoliteracy Perspective and Critical Thinking Skills in Men and Women," *Indonesian Journal of Geography* 51, no. 2 (August 30, 2019): 114–22, https://doi.org/10.22146/ijg.36784.

[3] Nor Lela Ahmad, "Conceptualizing Green Education Awareness in Primary School to Promote Sustainability," *Nóesis Revista de Ciencias Sociales* 4, no. 17 (2019): 22–30, https://www.researchgate.net/publication/337337599; Staci Hauschild, Elena Poltavtchenko, and Fredricka L. Stoller, "Going Green: Merging Environmental Education and Language Instruction.," *English Teaching Forum* 50, no. 2 (2012): 2–13, https://eric.ed.gov/?id=EJ982843; Heather D. Wallace, "Transdisciplinary Learning in a Kitchen Garden: Connecting to Nature and Constructing a Path to Ecoliteracy?," *International Research in Geographical and Environmental Education* 28, no. 4 (October 2, 2019): 309–23, https://doi.org/10.1080/10382046.2019.1646013.

meaningful and pertinent learning experience by integrating language learning with environmental content.[4]

Despite the growing interest in EPBLL, a comprehensive analysis of current research in English language education for young learners is needed to fill the existing knowledge gap.[5] Previous research has investigated particular aspects of EPBLL, including its impact on language acquisition, the function of technology, and pedagogical approaches.[6] However, no comprehensive literature review systematically comprehends research trends, themes, and knowledge gaps in EPBLL.

To remedy this research deficiency, a comprehensive bibliometric analysis of EPBLL research published between 2013 and 2023 is required. This analysis will focus on publication trends, authorship patterns, journal sources, citation counts, and EPBLL's most important research topics. By employing a bibliometric methodology, this study seeks to provide an objective, data-driven examination of the research landscape[7] offering a comprehensive overview of the existing

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[4] Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field."

[5] Esim Gürsoy, "Implementing Environmental Education to Foreign Language Teaching to Young Learners," *Educational Research* 1, no. 8 (2010): 232–38, https://www.interesjournals.org/articles/implementing-environmental-education-to-foreignlanguage-teaching-to-young-learners.pdf; Fatma Kimsesiz, "The Effect of Project Based Learning in Teaching EFL Vocabulary to Young Learners of English: The Case of Pre-School Children," *International Journal of Languages' Education* 1, no. 4 (January 1, 2017): 426–39, https://doi.org/10.18298/ijlet.2168.

[6] Danielle A. Guzman-Orth, Alexis A. Lopez, and Florencia Tolentino, "Exploring the Use of a Dual Language Assessment Task to Assess Young English Learners," *Language Assessment Quarterly* 16, no. 4–5 (October 20, 2019): 447–63, https://doi.org/10.1080/15434303.2019.1674314; Mikyung Kim Wolf and Yuko Goto Butler, *English Language Proficiency Assessments for Young Learners* (New York, NY: Routledge, 2017), https://doi.org/10.4324/9781315674391.

[7] Yang Gong, Boning Lyu, and Xuesong Gao, "Research on Teaching Chinese as a Second or Foreign Language in and Outside Mainland China: A Bibliometric Analysis," *The Asia-Pacific Education Researcher* 27, no. 4 (August 23, 2018): 277–89, https://doi.org/10.1007/s40299-018-0385-2; Maharani Ayu Nurdiana Putri et al., "Project-Based Learning (PjBL)-STEM: Bibliometric Analysis and Research Trends (2016-2020)," *Berkala Ilmiah Pendidikan Fisika* 9, no. 3 (November 10, 2021): 368–80, https://doi.org/10.20527/bipf.v9i3.11184; Xian Zhang, "A Bibliometric Analysis of Second Language Acquisition Between 1997 and 2018," *Studies in Second*

literature and allowing for the identification of patterns, themes, and the current condition of EPBLL research.

The findings of this study will provide valuable insights for educators, researchers, and policymakers. In the context of EPBLL, they will inform instructional practices, curriculum design, and policy decisions regarding language acquisition and sustainable education.[8] Moreover, by identifying research trends, themes, and knowledge gaps, the study will guide future research endeavours, facilitate collaborations, and contribute to developing effective and sustainable EPBLL programs.[9]

This study seeks to close the existing research gap by conducting an exhaustive bibliometric analysis of EPBLL research for young English language learners. By examining publication trends, authorship patterns, significant research themes, and the role of technology and pedagogical approaches, this research will provide valuable insights into the current state of the field, inform instructional practices,[10] and develop evidence-based and sustainable language learning programs for young learners that promote environmental consciousness.

The main objectives of this study include the following research questions: first, to find out what documents, authors, institutions, and regions are the most influential in "Environmental Project-Based Language Learning for Young Learners," as measured by the number of citations. Secondly, to find out what main themes and topics are widely explored in the context of "Environmental Project-Based Language Learning for Young Learners;" and third, to find out the latest

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Language Acquisition 42, no. 1 (March 25, 2020): 199–222, https://doi.org/10.1017/S0272263119000573.

[8] Kadir Karakaya and Aras Bozkurt, "Mobile-Assisted Language Learning (MALL) Research Trends and Patterns through Bibliometric Analysis: Empowering Language Learners through Ubiquitous Educational Technologies," *System* 110 (November 2022): 102925, https://doi.org/10.1016/j.system.2022.102925.

[9] Ken Hyland and Feng (Kevin) Jiang, "A Bibliometric Study of EAP Research: Who Is Doing What, Where and When?," *Journal of English for Academic Purposes* 49 (January 2021): 100929, https://doi.org/10.1016/j.jeap.2020.100929.

[10] Farouq Aji Subroto, Yazid Basthomi, and Utari Praba Astuti, "Teachers Talking in Very Young Learners Immersion Class: How They Did It," *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan* 5, no. 12 (December 29, 2020): 1694, https://doi.org/10.17977/jptpp.v5i12.14210.

and most significant trends in "Environmental Project-Based Language Learning for Young Learners."

Integrating environmental education into language learning has gained increasing recognition for its potential to foster environmental responsibility, sustainability, and interconnectedness among young learners.[11] By incorporating environmental content and activities into language learning, learners experience meaningful contexts that enhance language proficiency, critical thinking skills, and environmental consciousness.[12] For instance, imagine a language learning classroom where young learners are studying a unit on environmental issues. Instead of solely focusing on language structures and vocabulary related to the environment in abstract ways, the teacher can incorporate real-world environmental topics, such as climate change, renewable energy, or wildlife conservation, into the language lessons.

In this scenario, young learners might read articles or watch videos about environmental challenges, engage in discussions about the impact of human activities on the planet, and work on projects that propose solutions to environmental problems. By immersing themselves in meaningful environmental contexts, young learners enhance their language proficiency by practising reading, writing, speaking, and listening skills and developing critical thinking abilities as they analyze complex environmental issues and propose informed solutions.[13]

Through this integrated approach, young learners become more proficient language learners and develop a greater awareness of the environment. Young learners become aware of their role in contributing to sustainable practices as they engage with real-world environmental issues and investigate the global implications of environmental problems. It enhances comprehension, instils a sense of responsibility, and enables them to take significant action, such as implementing eco-friendly habits or advocating for environmental protection. By

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[11] Hauschild, Poltavtchenko, and Stoller, "Going Green: Merging Environmental Education and Language Instruction."; Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field."

[12] Nadiroh, Hasanah, and Zulfa, "Behavioral Geography: An Ecoliteracy Perspective and Critical Thinking Skills in Men and Women."

[13] Muthukrishnan, "Using Picture Books to Enhance Ecoliteracy of First-Grade Students"; Zhou, "Ecolinguistics: A Half-Century Overview."

integrating language learning and environmental education, young learners are endowed with both language skills and environmental consciousness, resulting in an all-encompassing approach to education. This preparation enables young learners to become knowledgeable, responsible, and environmentally conscious global citizens capable of making positive contributions.

Project-Based Learning in Language Education

Project-based learning (PBL) has been found to enhance language acquisition by providing meaningful contexts for language use and application. Kimsesiz and Abu Bakar et al. demonstrate that by engaging in project-based activities, learners have opportunities to practice and apply language skills authentically and purposefully.[14] It improves language fluency, vocabulary acquisition, and communication skills.[15] By using the language in real-world scenarios, learners develop a deeper understanding of language structures and functions, enabling them to communicate effectively.

In project-based language learning (PBLL), young learners actively participate in meaningful projects that require them to employ their language skills in authentic contexts.[16] For instance, young learners could construct awareness campaigns about local environmental challenges in an environmental issues-focused language class. They must research local environmental issues, acquire pertinent data, and analyze data to develop persuasive messages.[17] In this process, they would be encouraged to evaluate the evidence they gather to

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[14] Kimsesiz, "The Effect of Project Based Learning in Teaching EFL Vocabulary to Young Learners of English: The Case of Pre-School Children"; Noor Idayu Abu Bakar, Nooreen Noordin, and Abu Bakar Razali, "Improving Oral Communicative Competence in English Using Project-Based Learning Activities," *English Language Teaching* 12, no. 4 (March 14, 2019): 73–84, https://doi.org/10.5539/elt.v12n4p73.

[15] Dareen Assaf, "Motivating Language Learners during Times of Crisis through Project-Based Learning: Filming Activities at the Arab International University (AIU)," *Theory and Practice in Language Studies* 8, no. 12 (December 1, 2018): 1649, https://doi.org/10.17507/tpls.0812.10.

[16] Abu Bakar, Noordin, and Razali, "Improving Oral Communicative Competence in English Using Project-Based Learning Activities."

[17] Ashadi L. Diab et al., "Accommodation of Local Wisdom in Conflict Resolution of Indonesia's Urban Society," *Cogent Social Sciences* 8, no. 1 (2022), https://doi.org/10.1080/23311886.2022.2153413.

support their arguments and to think critically about the most effective methods to communicate their ideas.

Young learners acquire language skills, critical thinking, and problem-solving abilities through PBL.[18] For example, they must employ inventive problem-solving strategies if they encounter obstacles in their research or communication barriers. They may need to consider alternative approaches, collaborate with peers to generate ideas, and adapt their strategy to surmount the obstacles.

In addition, PBL encourages young learners to apply their language skills to authentic tasks, simulating situations they may encounter outside the classroom.[19] This strategy encourages the growth of the higher-order thinking abilities necessary for success in various contexts. As part of their environmental awareness campaigns, for instance, young learners may be required to use persuasive language to persuade their audience, demonstrate their understanding of the issues through well-reasoned arguments, and adapt their communication style to various target audiences.

Project-based learning in language education fosters critical thinking and problem-solving skills by requiring young learners to apply their language skills to authentic tasks and engaging them in inquiry-based activities.[20] By participating in meaningful projects, young learners develop the ability to think critically, analyze information, and make informed decisions, preparing them for success in contexts beyond the classroom.

Environmental Project-Based Language Learning (EPBLL)

EPBLL, a pedagogical approach combining language learning with environmental education, has received increasing attention

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[18] Nualpen Puangpunsi, "Learners' Perception towards Project-Based Learning in Encouraging English Skills Performance and 21 St Century Skills," *THAITESOL JOURNAL* 34, no. 1 (2021), http://files.eric.ed.gov/fulltext/EJ1304647.pdf.

[19] Tri Pratiwi et al., "Directed – Project Based Learning (DPjBL) as a Language Learning Model to Improve Students' English Achievement," in *Proceedings of the International Conferences on Educational, Social Sciences and Technology - ICESST 2018* (Padang: Fakultas Ilmu Pendidikan, 2018), 18–23, https://doi.org/10.29210/201813.

[20] Dua' Ghosheh Wahbeh et al., "The Role of Project-Based Language Learning in Developing Students' Life Skills," *Sustainability* 13, no. 12 (June 8, 2021): 6518, https://doi.org/10.3390/su13126518.

recently.[21] Several studies have focused on EPBLL, exploring its principles, practices, and outcomes in language learning and environmental education.[22]

EPBLL emphasizes integrating environmental content and activities into language learning, providing learners with meaningful contexts to apply their language skills. Chang et al. highlight the principles of EPBLL, which include engaging young learners in project-based activities related to environmental topics, promoting collaboration and critical thinking, and fostering a sense of environmental responsibility.[23] EPBLL encourages learners to explore real-world environmental issues, actively use the language to address them, and reflect on the' social and ecological implications of their actions.

Research on Environmental Project-Based Language Learning (EPBLL) has demonstrated its positive impact on language learning and environmental education. A meta-analysis by Hauschild et al. revealed significant improvements in learners' environmental knowledge, attitudes, and behaviours from participating in EPBLL activities.[24] This integrated approach enhances language proficiency and nurtures a sense of environmental consciousness and responsibility.[25] Through engaging in environmental projects, learners gain firsthand experience and knowledge about environmental issues, leading to a deeper understanding of sustainability and motivating them to take proactive action.[26] For instance, students involved in a project focused on waste

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[21] Ghosheh Wahbeh et al.

[22] S Ramadhan, E Sukma, and V Indriyani, "Environmental Education and Disaster Mitigation through Language Learning," *IOP Conference Series: Earth and Environmental Science* 314, no. 1 (August 1, 2019): 012054, https://doi.org/10.1088/1755-1315/314/1/012054.

[23] Shu-Hsuan Chang et al., "Applying Online Peer Assessment With Total Quality Management to Elevate Project-Based Learning Performance," *Journal of Baltic Science Education* 14, no. 3 (June 30, 2015): 379–90, https://doi.org/10.33225/jbse/15.14.379.

[24] Hauschild, Poltavtchenko, and Stoller, "Going Green: Merging Environmental Education and Language Instruction."

[25] Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field."

[26] Ahmad, "Conceptualizing Green Education Awareness in Primary School to Promote Sustainability."

reduction may become more aware of the environmental impact of excessive waste production and actively engage in recycling initiatives within their communities.

EPBLL represents a valuable and unique approach that seamlessly combines language learning with environmental education. Studies conducted by Wallace in 2019, Fadjarajani & As'ari in 2021, Kahn in 2010, and Johns & Pontes in 2019 provide valuable insights into the principles, practices, and outcomes of EPBLL.[27] By implementing EPBLL, educators can create rich and purposeful language learning experiences that enhance language acquisition and critical thinking skills and foster a deep sense of environmental consciousness and responsibility among learners. Moreover, incorporating technology in EPBLL can enhance the learning experience by providing interactive and engaging opportunities, such as using online resources to research environmental topics or creating multimedia presentations[28] to raise awareness about specific environmental issues and address global challenges.[29]

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[27] Wallace, "Transdisciplinary Learning in a Kitchen Garden: Connecting to Nature and Constructing a Path to Ecoliteracy?"; S Fadjarajani and R As'ari, "Ecopedagogy Based Learning as an Effort to Increase Student Ecoliteration and the Development of Environmental Care Characters," *IOP Conference Series: Earth and Environmental Science* 683, no. 1 (March 1, 2021): 012046, https://doi.org/10.1088/1755-1315/683/1/012046; Richard Kahn, *Critical Pedagogy, Ecoliteracy, & Planetary Crisis: The Ecopedagogy Movement* (Lausanne: Peter Lang Pub Inc, 2010); Rebecca A. Johns and Rachelle Pontes, "Parks, Rhetoric and Environmental Education: Challenges and Opportunities for Enhancing Ecoliteracy," *Journal of Outdoor and Environmental Education* 22, no. 1 (March 15, 2019): 1–19, https://doi.org/10.1007/s42322-019-0029-x.

[28] Imelda Imelda, Bambang Yudi Cahyono, and Utari Praba Astuti, "Effect of Process Writing Approach Combined with Video-Based Mobile Learning on Indonesian EFL Learners' Writing Skill across Creativity Levels," *International Journal of Instruction* 12, no. 3 (July 3, 2019): 325–40, https://doi.org/10.29333/iji.2019.12320a.

[29] Sri Rachmajanti, Mirjam Anugerahwati, and Frida Unsiah, "A Profile of Primary School Students' Literacy Through EMI in CLIL Contexts," *JEES (Journal of English Educators Society)* 8, no. 2 (November 11, 2023): 221–26, https://doi.org/10.21070/jees.v8i2.1802; Arik Susanti et al., "Online Project-Based Learning and Critical Thinking Skills: A Case Study in Tertiary Education," in *Proceedings of the International Joint Conference on Arts and Humanities 2022 (IJCAH 2022)*, 2023, 992–1002, https://doi.org/10.2991/978-2-38476-008-4_105.

Methods

The publication procedure for this study on Environmental Project-Based Language Learning (EPBLL) for young learners in English language education complied with established guidelines for systematic reviews. The literature search and review process adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, ensuring transparency, reproducibility, and rigour.[30] The Venn diagram illustrated in Figure 1 is the intersection of "Environmental Education," "Project-based language learning," and "Teaching English for Young Learners," forming "Environmental Project-Based Language Learning for Young Learners," showing the relationships of this review for the more in-depth research context. A replicable search strategy was developed using keywords from previous environmental project-based language learning review studies. The search key terms included terms associated with "Environmental Education," or "Sustainable Education," or "Green Education," or "eco-pedagogy," "nature education," or "nature-based learning," or "eco-literacy."[31] The keywords for project-based learning are "project-based learning" or "Project-Based language learning."[32] The critical terms for

[30] David Moher et al., "Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement," *PLoS Medicine* 6, no. 7 (July 21, 2009): e1000097, https://doi.org/10.1371/journal.pmed.1000097.

[31] Ahmad, "Conceptualizing Green Education Awareness in Primary School to Promote Sustainability"; Fadjarajani and As'ari, "Ecopedagogy Based Learning as an Effort to Increase Student Ecoliteration and the Development of Environmental Care Characters"; Hauschild, Poltavtchenko, and Stoller, "Going Green: Merging Environmental Education and Language Instruction."; Muthukrishnan, "Using Picture Books to Enhance Ecoliteracy of First-Grade Students"; Kylie Rymanowicz, Chelsea Hetherington, and Brooke Larm, "Planting the Seeds for Nature-Based Learning: Impacts of a Farm- and Nature-Based Early Childhood Education Program.," *International Journal of Early Childhood Environmental Education* 8, no. 1 (2020): 44–63.

[32] Ghosheh Wahbeh et al., "The Role of Project-Based Language Learning in Developing Students' Life Skills"; Kimsesiz, "The Effect of Project Based Learning in Teaching EFL Vocabulary to Young Learners of English: The Case of Pre-School Children"; Putri et al., "Project-Based Learning (PjBL)-STEM: Bibliometric Analysis and Research Trends (2016-2020)."

Young Learners are "young learners," "Primary School," "Elementary School," or "early years."[33]

Based on Meline in 2006 guidelines on how to do a reliable systematic review, the search was restricted to 10 years, from 2013 to 2023, to capture current trends.[34] Articles were specified as the document type because they contain extensive research and analysis. Publications were chosen from the SCOPUS database, which is renowned for its exhaustive coverage of scholarly literature and is regarded as trustworthy and of high calibre. Although some studies claim that the citation-based criteria of Web of Science perform significantly better than those of Scopus in terms of the accuracy of their journal classification systems,[35] SCOPUS remains a titan of bibliographic information today,[36] and it is the largest multidisciplinary database of peer-reviewed literature in the social sciences.

The scope of the research was narrowed to educational research in the field of education based on stringent criteria comparable to those of pertinent reviews in the same area. The publication year, authors' identities, affiliations, journal sources, and citation counts of the selected SCOPUS articles were extracted for further analysis.

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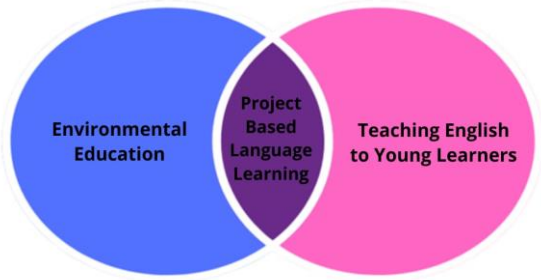
[33] Alexia Barrable, "Refocusing Environmental Education in the Early Years: A Brief Introduction to a Pedagogy for Connection," *Education Sciences* 9, no. 1 (March 19, 2019): 61, https://doi.org/10.3390/educsci9010061; John Buchanan, Kimberley Pressick-Kilborn, and Damian Maher, "Promoting Environmental Education for Primary School-Aged Students Using Digital Technologies," *EURASIA Journal of Mathematics, Science and Technology Education* 15, no. 2 (December 10, 2018), https://doi.org/10.29333/ejmste/100639; Dwi Utari and Achmad Ruslan Afendi, "Implementation of Pancasila Student Profile in Elementary School Education with Project-Based Learning Approach," *EduLine: Journal of Education and Learning Innovation* 2, no. 4 (November 1, 2022): 456–64, https://doi.org/10.35877/454RI.eduline1280; Wolf and Butler, *English Language Proficiency Assessments for Young Learners*.

[34] Timothy Meline, "Selecting Studies for Systemic Review: Inclusion and Exclusion Criteria," *Contemporary Issues in Communication Science and Disorders* 33, no. Spring (March 2006): 21–27, https://doi.org/10.1044/cicsd_33_S_21.

[35] Qi Wang and Ludo Waltman, "Large-Scale Analysis of the Accuracy of the Journal Classification Systems of Web of Science and Scopus," *Journal of Informetrics* 10, no. 2 (May 2016): 347–64, https://doi.org/10.1016/j.joi.2016.02.003.

[36] Raminta Pranckutė, "Web of Science (WoS) and Scopus: The Titans of Bibliographic Information in Today's Academic World," *Publications* 9, no. 1 (March 12, 2021): 12, https://doi.org/10.3390/publications9010012.

Figure 1. The relations between project-based language learning and environmental education and teaching English to young learners.



The data distribution indicates that initially, 107 publications met the criteria. However, general perception studies, position papers, and studies unrelated to environmental project-based language learning for young learners were excluded. Three seasoned linguists carefully examined all the articles and abstracts to ensure accuracy. Thus, 17 publications were chosen to be included in this analysis.

Figure 2 depicts the distribution of publications on environmental project-based language learning for young learners from 2013 to 2023. Research EPBLL for young learners has been conducted consistently throughout the period, with notable peaks in 2022 (N = 5) and 2023 (N = 5). Between 2019 and 2021 and between 2022 and 2023, there was a notable increase in publications. This observation suggests that environmental project-based language learning for young learners has gained widespread adoption in EFL education, most likely due to the increasing popularity of environmental awareness and sustainable lifestyle, as previously noted by researchers.[37]

This bibliometric study sheds light on the trends and themes in Environmental Project-Based Language Learning (EPBLL) for young learners by analyzing the distribution of publications and identifying increases in research output during particular years.

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[37] Silvia Collado, Claudio D. Rosa, and José A. Corraliza, "The Effect of a Nature-Based Environmental Education Program on Children's Environmental Attitudes and Behaviors: A Randomized Experiment with Primary Schools," *Sustainability* 12, no. 17 (August 22, 2020): 6817, https://doi.org/10.3390/su12176817; Kahn, *Critical Pedagogy, Ecoliteracy, & Planetary Crisis: The Ecopedagogy Movement*.

Figure 2. Searching procedure based on PRISMA

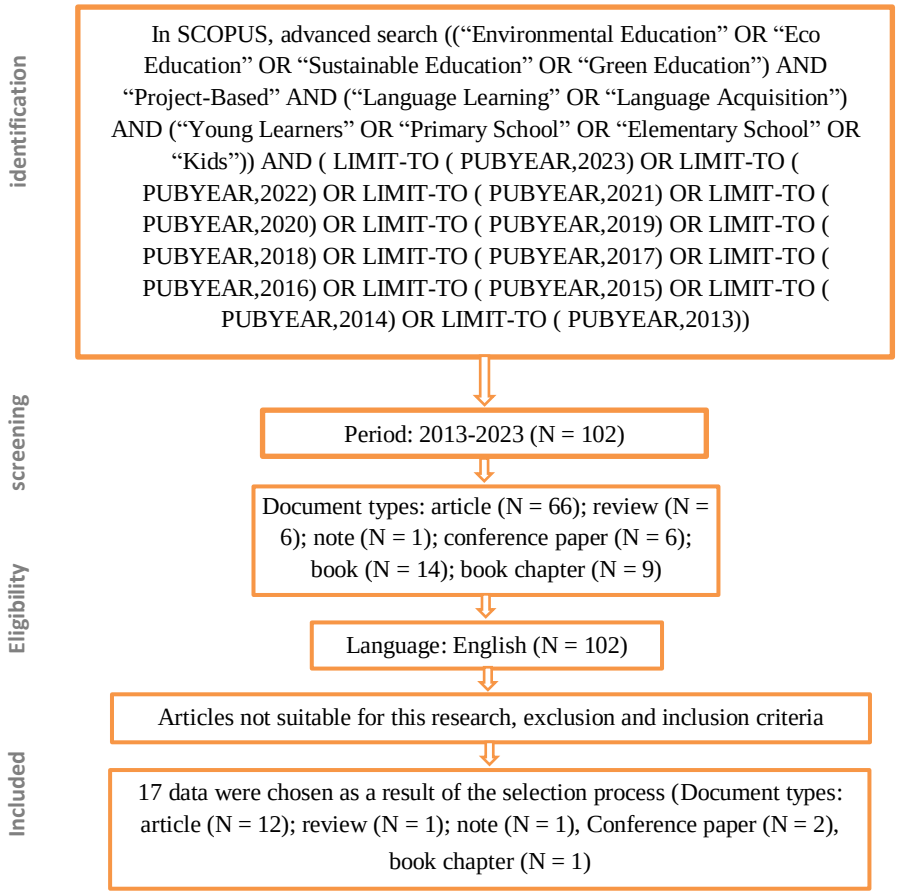
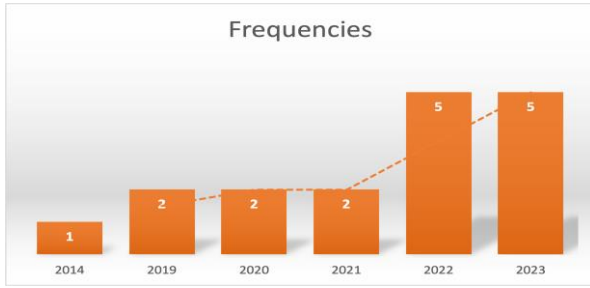


Figure 3. The distribution of publications on environmental project-based language learning for young learners



Results

Major Countries Publishing Research

This bibliometric analysis revealed the top countries contributing to EPBLL research. Among the countries at the forefront of EPBLL research, the United States emerged as a leading contributor, with five research publications and 40 citations. Switzerland also demonstrated active engagement in EPBLL research, with three research papers and 28 citations. Suggests that studies published by Swiss publishers are making significant contributions to understanding how project-based language learning can promote environmental awareness and sustainability among young learners. The United Kingdom was another noteworthy participant in EPBLL research, with two research papers and three citations. Although the number of publications was relatively lower, it still underscores the country's commitment to studying the integration of environmental education and language learning, emphasizing the importance of holistic learning experiences for young learners.

Additionally, Indonesia and Germany were identified as countries with an emerging interest in EPBLL research. Some Indonesian and German publishers contributed two research papers, indicating their growing involvement in exploring the potential benefits of environmental project-based language learning for young learners. Australia, India, and Poland also contributed noteworthy research papers, each with one research paper. While the output of publications and citations was comparatively lower, their engagement in the field suggests a global interest in incorporating environmental education into language learning for young learners.

The data on countries conducting research on EPBLL for young learners provides valuable insights into the international interest and commitment to fostering environmental consciousness among the youth through language learning. By understanding the research landscape of these countries, researchers and educators in the EPBLL field can leverage existing knowledge and collaborations to advance environmental project-based language learning initiatives worldwide.

Table 1. Countries Ranked by Number of Publications

Country	Publication	Total no. of Citation
United States	5	40
Switzerland	3	28
United Kingdom	2	3
Indonesia	2	0
Germany	2	0
Australia	1	1
India	1	0
Poland	1	1

Most Cited Journals

Table 2 provides valuable insights into the most cited journals in the Environmental Project-Based Language Learning (EPBLL) for young learners. The data highlights the significance of specific journals that have contributed significantly to understanding and developing the EPBLL field, which integrates environmental education with language learning for young learners.

One of the prominent journals in EPBLL research is "Sustainability," which has published two influential papers and accumulated 28 citations. The study published in "Sustainability" likely explores how project-based learning can be utilized as a platform to foster environmental awareness, promote sustainability, and empower young learners to become environmentally responsible citizens.

Another significant journal in the field is the "British Journal of Education Technology," with one publication and 33 citations. This journal's impact aligns with research conducted by Beckett & Slater in 2018, who focused on integrating technology in the PBLL field.[38] The "British Journal of Education Technology" likely hosts research investigating how innovative technology tools and digital resources can enhance language learning experiences while immersing young learners in environmental projects.

[38] Gulbahar H. Beckett and Tammy Slater, "Technology-Integrated Project-Based Language Learning," in *The Encyclopedia of Applied Linguistics* (Wiley, 2018), 1–8, https://doi.org/10.1002/9781405198431.wbeal1487.

The "Annual Symposium on Computer-Human Interaction" is essential, with one publication and five citations. The papers published in this journal might explore the role of interactive technologies and user interfaces in facilitating language learning experiences that revolve around environmental projects. Lastly, "International Research in Geographical and Environmental Education" and several other journals with one publication each may not have as high citation counts. However, they still contribute valuable perspectives to the EPBLL field. The research published in these journals likely explores the connections between language learning, environmental understanding, and geographical concepts.[39]

In conclusion, the data from Table 2 indicate that specific journals are crucial in disseminating research on EPBLL for young learners. These journals have contributed to the growing knowledge that intertwines environmental education with language learning experiences. Studies published in these journals empower educators to adopt innovative approaches that foster environmental consciousness, promote sustainability, and nurture the language development of young learners through project-based learning activities.

Table 2. The top four cited journals ranked by the number of publications and the number of Citation

Source	**Publication**	**Total no. of citations**
Sustainability	2	28
British Journal of Education Technology	1	33
Annual Symposium on Computer-Human Interaction	1	5
International Research in Geographical and Environmental Education	1	2

[39] Henna Anunti et al., "Digital Story Mapping with Geomedia in Sustainability Education," *International Research in Geographical and Environmental Education* 32, no. 3 (July 3, 2023): 197–216, https://doi.org/10.1080/10382046.2023.2183549; Mona Lissa Chiriac and Corneliu Iațu, "What Do Secondary School Students in North-East Romania Know and Think about Sustainable Development?," *International Research in Geographical and Environmental Education* 32, no. 4 (October 2, 2023): 305–22, https://doi.org/10.1080/10382046.2023.2183548.

Most Frequently Used Keywords

Figure 4 and Table 3 display all the keywords in the Environmental Project-Based Language Learning for young learners. Figure 5 displays the most used keywords in the realm of EPBLL for young learners. Among the keywords listed, "student" holds the highest occurrence, appearing five times in the research papers. It indicates a predominant focus on young learners and their involvement in project-based language learning activities with environmental themes. The term "learning" follows closely with three appearances, emphasizing the core aspect of EPBLL—language acquisition and skill development in the context of engaging young learners in environmental projects.

Environmental education and sustainability emerged four times, signifying their pivotal role in EPBLL research. Scholars are exploring integrating environmental education principles and sustainable practices into language learning experiences for young learners. The phrase "sustainable development" is mentioned twice, suggesting a keen interest in examining the long-term impact of EPBLL on young learners' understanding of sustainable development concepts. However, it is important to note that no specific keywords related to "project-based learning" exist in the data.

The non-existent "project-based learning" keywords may be caused by reading the articles' metadata that only identifies the articles' titles, keywords, and abstracts. The term "project-based learning" may not be mentioned in the metadata, but in the article's body. Alternatively, "Project-based learning" has not become an area of research for many researchers in environmental education for young learners.[40] It could indicate a potential gap in the existing research, suggesting that further investigation is needed on the explicit integration and impact of project-based learning within the context of EPBLL for young learners. Some studies might also use project-based learning method, but they don't clearly call it "project-based learning" in their titles, abstracts, or keywords. As a result, these studies may not appear in searches that rely only on that information.

[40] Tülin Güler Yıldız et al., "Education for Sustainability in Early Childhood Education: A Systematic Review," *Environmental Education Research* 27, no. 6 (June 3, 2021): 796–820, https://doi.org/10.1080/13504622.2021.1896680.

Table 3. Top keywords of environmental project-based language learning for young learners' publications

2013-2023	
Keywords	**Frequency**
student	5
environmental education	4
learning	3
sustainability	2
teaching	2
e-learning	2
children	2
knowledge	2
learning system	2
environmental awareness	2
learning performance	2
learning model	2

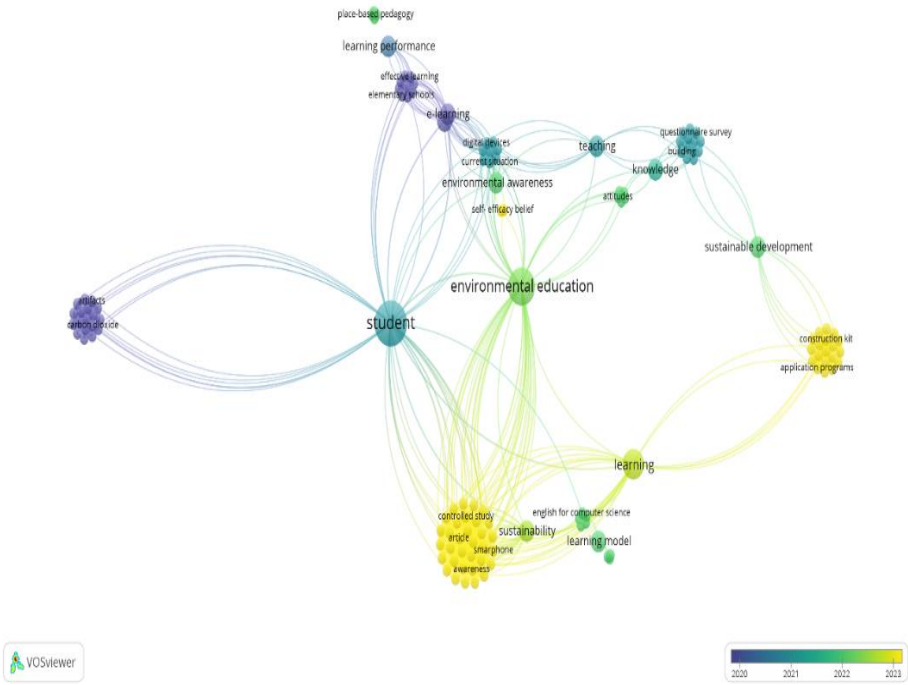
Additionally, "teaching" and "e-learning" each appear twice, highlighting the roles of educators and technology in facilitating EPBLL experiences. The keyword "children" is also used twice, emphasizing the focus on young learners and their unique needs within the context of EPBLL.

Furthermore, "knowledge" appears twice, implying that researchers are likely investigating the acquisition and application of knowledge within EPBLL settings. Keywords such as "learning system," "environmental awareness," "learning performance," and "learning model" each appear twice as well, showcasing the attention given to the design, assessment, and effectiveness of EPBLL systems in promoting environmental awareness and improving learning outcomes.

The keyword analysis provides valuable insights into the central themes and concepts explored in EPBLL research. It serves as a guide for future investigations and informs educational practices aimed at fostering environmental consciousness and language development among young learners. These findings underscore the significance of integrating environmental themes into language learning experiences, demonstrating the potential of EPBLL as a powerful pedagogical

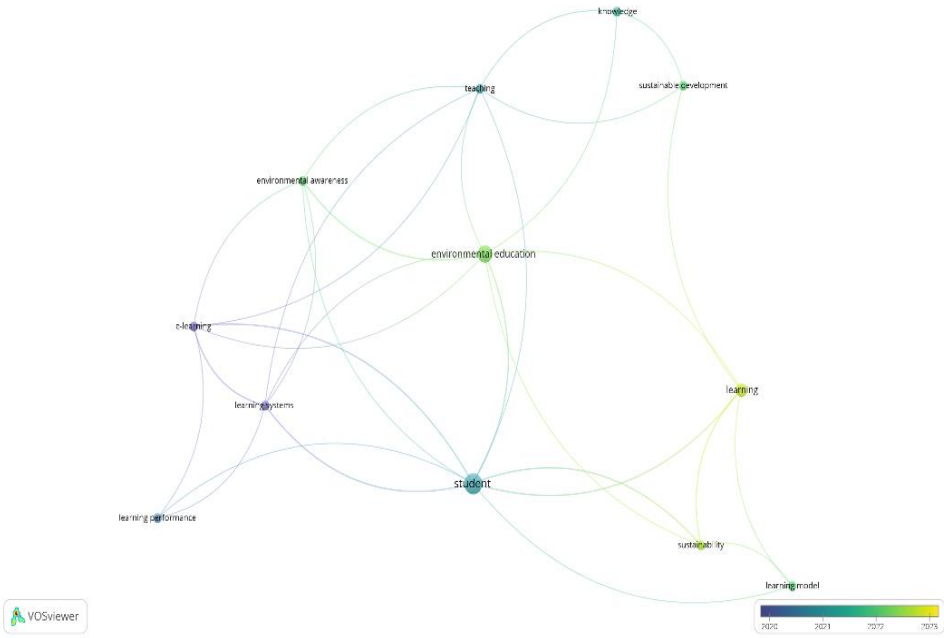
approach for enhancing both environmental awareness and language proficiency in young learners. However, the absence of specific keywords related to "project-based learning" suggests a potential area for further research to explore the explicit connections and effects of project-based learning within the context of EPBLL for young learners. As identified by research on effective climate change education strategies, it proposes to use active and engaging teaching methods.[41]

Figure 4. All keywords in the data set related to environmental project-based language learning for young learners' publications.



[41] Martha C. Monroe et al., "Identifying Effective Climate Change Education Strategies: A Systematic Review of the Research," *Environmental Education Research* 25, no. 6 (June 3, 2019): 791–812, https://doi.org/10.1080/13504622.2017.1360842.

Figure 5. The most used keywords in the set of data related to environmental project-based language learning for young learners' publications



Discussion

Major Influential Entities and Regions Based on Citation Counts

The data presented in Table 1 offers valuable insights into the major countries contributing to research on "Environmental Project-Based Language Learning (EPBLL) for Young Learners." Among these leading contributors, the United States emerges with five research publications and 40 citations, showcasing a significant interest in fostering environmental consciousness through language learning activities.[42] Switzerland demonstrates active engagement in EPBLL research with three research papers and 28 citations, highlighting its

[42] Barrable, "Refocusing Environmental Education in the Early Years: A Brief Introduction to a Pedagogy for Connection"; Muthukrishnan, "Using Picture Books to Enhance Ecoliteracy of First-Grade Students."

contributions to promoting environmental awareness and sustainability among young learners.

The United Kingdom's commitment to studying the integration of environmental education and language learning is underscored by its two research papers and three citations, emphasizing the importance of holistic learning experiences for young learners. Additionally, the increasing engagement of Indonesia and Germany in Environmental Project-Based Language Learning (EPBLL) research signifies a significant trend in fostering environmental consciousness among young learners. With both countries contributing two research papers, there is a clear recognition of the potential benefits of integrating environmental education with language learning experiences. This trend reflects a global shift towards addressing environmental challenges at an early age. It highlights a growing commitment to exploring the effectiveness of project-based language learning approaches in diverse contexts. By exposing young learners to environmental awareness through EPBLL, they are better prepared to tackle environmental issues and become actively environmentally conscious citizens.

Notably, Indonesia's participation in EPBLL research is particularly relevant, considering its reputation as one of the world's most significant contributors to ocean pollution. As a country facing significant environmental challenges, incorporating environmental themes into language learning can be transformative, inspiring the young generation to protect and preserve the environment proactively.[43] The emerging interest in EPBLL in Indonesia and Germany presents a collaborative opportunity for these nations to address environmental issues through innovative education. Policymakers, educators, and stakeholders must collaborate to develop impactful initiatives that instil environmental consciousness in young learners, fostering environmentally responsible citizens determined to create a sustainable future. Australia, India, and Poland contribute noteworthy research to EPBLL, with one research paper indicating a global interest in

[43] Hauschild, Poltavtchenko, and Stoller, "Going Green: Merging Environmental Education and Language Instruction."

incorporating environmental education into language learning for young learners.[44]

Furthermore, Table 2 highlights the most cited journals in EPBLL for young learners, providing additional insights into the research field. "Sustainability" emerges as one of the prominent journals, with two influential papers and 28 citations, demonstrating its relevance and impact on the discourse of environmental education integrated with language learning.[45] The "British Journal of Education Technology" also holds significance with one publication and 33 citations, emphasizing technology integration in EPBLL approaches.[46] Similarly, the "Annual Symposium on Computer-Human Interaction" plays a significant role, with one publication and five citations, exploring interactive technologies in language learning experiences involving environmental projects.[47] Moreover, "International Research in Geographical and Environmental Education" and other journals with one publication each contribute valuable perspectives to the EPBLL field, exploring the connections between language learning, environmental understanding, and geographical concepts.[48]

The keyword analysis in Figures 4 and 5 and Table 3 further enriches our understanding of the central themes and concepts explored in EPBLL research. The most frequently used keywords, such as "student," "learning," "environmental education," and "sustainability,"

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[44] Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field"; Colleen MacDonell, *Project-Based Inquiry Units for Young Children: First Steps to Research for Grades Pre-K-2* (Washington: Linworth, 2006).

[45] Wolf and Butler, *English Language Proficiency Assessments for Young Learners*.

[46] Tamara Savelyeva and Jae Park, "Blockchain Technology for Sustainable Education," *British Journal of Educational Technology* 53, no. 6 (November 15, 2022): 1591–1604, https://doi.org/10.1111/bjet.13273.

[47] Johns and Pontes, "Parks, Rhetoric and Environmental Education: Challenges and Opportunities for Enhancing Ecoliteracy"; Manfred Man-fat Wu, "Second Language Teaching for Global Citizenship," *Globalization, Societies and Education* 18, no. 3 (May 26, 2020): 330–42, https://doi.org/10.1080/14767724.2019.1693349.

[48] Chen, "Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field"; Lyn Parker, "Environmentalism and Education for Sustainability in Indonesia," *Indonesia and the Malay World* 46, no. 136 (September 2, 2018): 235–40, https://doi.org/10.1080/13639811.2018.1519994.

highlight a predominant focus on young learners' involvement in project-based language learning with environmental themes.[49]

However, the absence of specific keywords related to "project-based learning" suggests a potential research gap in exploring the explicit connections and effects of project-based learning within EPBLL for young learners. Nevertheless, keywords such as "teaching," "e-learning," "children," "knowledge," "learning system," "environmental awareness," "learning performance," and "learning model" offer valuable insights into the design, assessment, and effectiveness of EPBLL systems in promoting environmental awareness and improving learning outcomes.

The data analysis underscores the significance of EPBLL for young learners, emphasizing the potential benefits of integrating environmental education with language learning. The influential documents, authors, institutions, and regions highlighted in the dataset indicate a global interest in advancing environmentally conscious and language-rich learning experiences. By building upon existing knowledge and addressing research gaps, the EPBLL community can contribute to a more sustainable and enriching educational environment for young learners worldwide. The presented data provide a foundation for future investigations and collaborative efforts in EPBLL, promoting innovative approaches that foster environmental consciousness, encourage sustainability, and nurture the language development of young learners through project-based learning activities.

Predominant Themes and Extensively Explored Topics

The recent keyword analysis in Figure 4, Figure 5, and Table 3 further enriches our understanding of the current trends in EPBLL research, particularly near the year 2023. The most frequently used keywords in this recent year include "learning" (3 occurrences), "sustainability" (2 occurrences), "e-learning" (2 occurrences),

[49] Abu Bakar, Noordin, and Razali, "Improving Oral Communicative Competence in English Using Project-Based Learning Activities"; Ahmad, "Conceptualizing Green Education Awareness in Primary School to Promote Sustainability"; Collado, Rosa, and Corraliza, "The Effect of a Nature-Based Environmental Education Program on Children's Environmental Attitudes and Behaviors: A Randomized Experiment with Primary Schools"; Ghosheh Wahbeh et al., "The Role of Project-Based Language Learning in Developing Students' Life Skills."

"learning performance" (2 occurrences), and "learning system" (2 occurrences), indicating the continued focus on young learners' involvement in project-based language learning with environmental themes. The growing emphasis on environmental education and sustainability reflects the global urgency to address environmental issues and cultivate environmentally responsible individuals who can contribute to environmental preservation.[50] Additionally, the frequent appearance of keywords related to technology, such as "e-learning," "learning system," and "children," highlights the increasing integration of digital tools and interactive learning platforms to enhance EPBLL experiences and engage young learners in environmental projects.[51]

The analysis of previous studies and the recent keyword analysis has highlighted some critical research gaps. One significant gap is the absence of specific keywords related to "project-based learning" in the dataset. It suggests a need for more focused research on explicitly examining the integration and impact of project-based learning within the context of EPBLL. Addressing this research gap can lead to a better understanding of how project-based learning methodologies enhance young learners' environmental awareness and language skills, optimizing the potential of EPBLL in fostering environmental consciousness.

Moreover, the keyword analysis has highlighted specific emerging keywords like "e-learning," "learning performance," and "learning system," which were prominently studied in 2020. It indicates a recent shift in research focus toward understanding the role of technology in EPBLL experiences and the evaluation of learning outcomes. Exploring the potential of e-learning platforms and sophisticated learning systems in EPBLL can lead to more immersive and interactive learning environments, fostering engagement and motivation among young learners.[52]

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[50] Rymanowicz, Hetherington, and Larm, "Planting the Seeds for Nature-Based Learning: Impacts of a Farm- and Nature-Based Early Childhood Education Program."

[51] Beckett and Slater, "Technology-Integrated Project-Based Language Learning."

[52] Fadjarajani and As'ari, "Ecopedagogy Based Learning as an Effort to Increase Student Ecoliteration and the Development of Environmental Care Characters"; Neni Maulidah et al., "Creative Play and Learning in Natural Environment to Develop Creative-Ecoliteracy in Elementary School Students," *Journal of Physics: Conference*

The frequent appearance of "knowledge," "environmental awareness," "learning model," and "children" as keywords suggests a growing interest in exploring the cognitive and affective aspects of EPBLL.[53] Future research in these areas can contribute to developing effective educational interventions that enhance language learning and deepen young learners' understanding of environmental concepts and attitudes toward environmental issues.

The possible future implications of the research findings are promising. By capitalizing on the identified trends and addressing the research gaps, educators and policymakers can develop innovative approaches that empower young learners to take active roles in preserving the environment and creating a sustainable future. Integrating project-based learning more explicitly within EPBLL can enhance young learners' problem-solving skills and critical thinking abilities, enabling them to become effective agents of positive environmental change.[54]

Furthermore, leveraging technology and e-learning tools can create dynamic and interactive learning environments, fostering greater engagement and enthusiasm for language learning with an environmental focus.[55] Integrating environmental education principles into language learning experiences can cultivate environmentally conscious citizens equipped to address global environmental challenges.

The analysis of previous studies and the recent keyword analysis has provided valuable insights into the predominant themes and

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Series 1764, no. 1 (February 1, 2021): 012112, https://doi.org/10.1088/1742-6596/1764/1/012112.

[53] Christine Andrews Paulsen et al., "Engaging Children and Families in Active, Environmental Science Learning through Digital Media.," *International Journal of Early Childhood Environmental Education* 8, no. 2 (2021): 43–58; Carlie D. Trott, "Children's Constructive Climate Change Engagement: Empowering Awareness, Agency, and Action," *Environmental Education Research* 26, no. 4 (April 2, 2020): 532–54, https://doi.org/10.1080/13504622.2019.1675594.

[54] Nadiroh, Hasanah, and Zulfa, "Behavioral Geography: An Ecoliteracy Perspective and Critical Thinking Skills in Men and Women."

[55] Laura B. Cole and Elke Altenburger, "Framing the Teaching Green Building: Environmental Education through Multiple Channels in the School Environment," *Environmental Education Research* 25, no. 11 (November 2, 2019): 1654–73, https://doi.org/10.1080/13504622.2017.1398817.

extensively explored topics in Environmental Project-Based Language Learning for Young Learners. They have also revealed research gaps related to project-based learning integration and highlighted emerging technology and learning outcomes evaluation trends. Addressing these gaps and leveraging the identified trends can lead to more effective EPBLL programs that promote environmental consciousness and language development, empowering young learners to play an active role in environmental preservation and contributing to a more sustainable and environmentally aware future.

The Latest and Most Significant Trends

Analyzing major countries contributing to EPBLL research (Table 2) reveals the latest and most significant trends in environmental project-based language learning (epbll) for young learners. This data demonstrates a widespread international commitment to exploring the potential benefits of integrating environmental themes into language learning experiences for young learners.[56] The United States and Switzerland are among the leading contributors to EPBLL research, with numerous research publications and citations showcasing their dedication to advancing this field.[57]

While several countries actively engage in EPBLL research, it is crucial to recognize the research gap for Indonesian scholars in this domain. Specifically, Indonesian researchers have only produced two publications and received no citations in Scopus-indexed journals, indicating a limited presence in the current body of literature.

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[56] Kathleen Aikens, Marcia McKenzie, and Philip Vaughter, "Environmental and Sustainability Education Policy Research: A Systematic Review of Methodological and Thematic Trends," *Environmental Education Research* 22, no. 3 (April 2, 2016): 333–59, https://doi.org/10.1080/13504622.2015.1135418; Mohammed Abdullatif Almulla, "The Effectiveness of the Project-Based Learning (PBL) Approach as a Way to Engage Students in Learning," *Sage Open* 10, no. 3 (July 5, 2020): 2158244020938702, https://doi.org/10.1177/2158244020938702; Roman Hoffmann and Raya Muttarak, "Greening through Schooling: Understanding the Link between Education and pro-Environmental Behavior in the Philippines," *Environmental Research Letters* 15, no. 1 (January 1, 2020): 014009, https://doi.org/10.1088/1748-9326/ab5ea0.

[57] Hauschild, Poltavtchenko, and Stoller, "Going Green: Merging Environmental Education and Language Instruction."; Paulsen et al., "Engaging Children and Families in Active, Environmental Science Learning through Digital Media."

Nevertheless, this also signifies an emerging interest from Indonesian researchers in exploring the potential benefits of environmental project-based language learning for young learners, showcasing a growing commitment to fostering environmental consciousness and sustainability among Indonesian young learners.[58]

The trends observed in the analysis underscore the international recognition of EPBLL's significance in nurturing environmentally responsible and knowledgeable young learners. As the field evolves, researchers from different countries, including Indonesia, must actively contribute to the discourse, enriching our understanding of how environmental education and language learning can synergize to empower young learners in addressing environmental challenges.

Additionally, analyzing keywords in EPBLL research further enriches our understanding of extensively explored themes and concepts. In the year 2023, the most frequently used keywords include "learning" (3 occurrences), "sustainability" (2 occurrences), "e-learning" (2 occurrences), "learning performance" (2 occurrences), and "learning system" (2 occurrences). It highlights the continued focus on young learners' involvement in project-based language learning with environmental themes, aligning with the growing global concern for addressing environmental challenges and nurturing environmentally conscious citizens.[59]

However, the absence of specific keywords related to "project-based learning" suggests a potential research gap in exploring the explicit connections and effects of project-based learning within EPBLL for young learners. Addressing this gap can lead to innovative approaches that leverage project-based learning to deepen young learners' understanding of environmental concepts and engage them in

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[58] Henita Rahmayanti et al., "Difmol: Indonesian Students' Hots and Environmental Education Model During COVID-19," *Journal of Sustainability Science and Management* 15, no. 7 (October 1, 2020): 10–19, https://doi.org/10.46754/JSSM.2020.10.002.

[59] Abu Bakar, Noordin, and Razali, "Improving Oral Communicative Competence in English Using Project-Based Learning Activities"; Ahmad, "Conceptualizing Green Education Awareness in Primary School to Promote Sustainability"; Collado, Rosa, and Corraliza, "The Effect of a Nature-Based Environmental Education Program on Children's Environmental Attitudes and Behaviors: A RandRandomizederiment with Primary Schools"; Ghosheh Wahbeh et al., "The Role of Project-Based Language Learning in Developing Students' Life Skills. "

sustainability efforts.[60] Furthermore, the frequent appearance of "knowledge," "environmental awareness," "learning model," and "children" as keywords suggests a growing interest in exploring the cognitive and affective aspects of EPBLL.[61] Researchers are delving into the acquisition and application of knowledge within the context of environmental themes while examining the impact of EPBLL on young learners' environmental awareness and attitudes. Understanding the underlying learning models and strategies employed in EPBLL can contribute to designing effective educational interventions that maximize the benefits of language learning with an environmental focus.[62]

Another significant trend in EPBLL research is the prominence of specific journals in disseminating research findings that intertwine environmental education with language learning. For instance, the journal "Sustainability" has published influential papers with a substantial citation count, signifying its pivotal role in promoting environmental education practices and sustainable development in language learning.[63] The "British Journal of Education Technology" also stands out with impactful publications, reflecting the growing attention to technology integration in EPBLL.[64] The studies further emphemphasized significance of reputable journals in disseminating research on integrating technology with EPBLL approaches.

Considering these trends, educators and policymakers can develop innovative approaches that empower young learners to

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[60] Lauren E. Mullenbach, Rob G. Andrejewski, and Andrew J. Mowen, "Connecting Children to Nature through Residential Outdoor Environmental Education," *Environmental Education Research* 25, no. 3 (March 4, 2019): 365–74, https://doi.org/10.1080/13504622.2018.1458215.

[61] I Juhriati, I Rachman, and K Yayoi, "The Best Practice of Ecoliteracy Based on Social Culture," *IOP Conference Series: Earth and Environmental Science* 802, no. 1 (June 1, 2021): 012012, https://doi.org/10.1088/1755-1315/802/1/012012.

[62] Johns and Pontes, "Parks, Rhetoric and Environmental Education: Challenges and Opportunities for Enhancing Ecoliteracy."

[63] Collado, Rosa, and Corraliza, "The Effect of a Nature-Based Environmental Education Program on Children's Environmental Attitudes and Behaviors: A RandRandomizederiment with Primary Schools"; GoWoon Kim et al., "Enhancing Ecoliteracy through Traditional Ecological Knowledge in Proverbs," *Sustainability* 9, no. 7 (July 6, 2017): 1182, https://doi.org/10.3390/su9071182.

[64] Savelyeva and Park, "Blockchain Technology for Sustainable Education."

safeguard the environment and create a sustainable future. Integrating project-based learning more explicitly within EPBLL can enhance young learners' problem-solving skills and critical thinking abilities, enabling them to become effective agents of positive environmental change. Moreover, leveraging technology and e-learning tools can create dynamic and interactive learning environments, fostering greater engagement and enthusiasm for language learning with an environmental focus. Integrating environmental education principles into language learning experiences can cultivate environmentally conscious citizens equipped to address global environmental challenges.

Conclusion

The trend identified in the *Trends and Themes in Environmental Project-Based Language Learning for Young Learners* research is the global interest in integrating environmental themes into language learning experiences. Educators and researchers worldwide recognize the potential benefits of Environmental Project-Based Language Learning (EPBLL) in fostering environmental consciousness among young learners. This trend involves incorporating environmental education principles, sustainable development concepts, and real-life environmental projects into language learning curricula. The aim is to empower young learners to become environmentally responsible and active citizens who can address global ecological challenges early on.

In this study, the researchers found 17 datasets with a small amount of data for two reasons. First, the researchers utilized three connected keywords that make the findings very limited and specific. Second, the trends of the EPBLL for young learners in Scopus-indexed journals have yet to be extensively researched. The trend includes exploring the use of technology and project-based learning approaches to enhance the effectiveness of EPBLL programs and engage young learners in meaningful and impactful language learning experiences related to environmental themes. Overall, EPBLL's trend of promoting environmental awareness and sustainability through language education for young learners is still needed and has potential as a research area for the next five years. Nowadays, young learners are digital citizens living in hazardous environments where becoming environmentally aware is necessary.

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