

Systematic Literature Review

A Systematic Literature Review of Project-Based Learning on English Writing Skills

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Abstract: Project-based learning (PjBL) is a student-centred approach focusing on experiential learning. The approach has been widely used in the field of sciences and mathematics but not in social sciences, particularly in English writing skills. As PjBL gains popularity as one of the 21st century teaching and learning approaches, there is a need to identify the trends, key authors, significant countries, and findings related to PjBL in writing. This paper presents a systematic literature review (SLR) conducted on 17 articles from the year 2018 to 2023 from the Scopus database following the PRISMA guideline. The study focused on PjBL and English writing, employing a systematic literature review to analyse trends, countries, authors, and journals. The analysis reveals dynamic trends of PjBL in the writing field. While the publication output fluctuated over the years, Indonesia emerged as a major contributor, signifying a global interest. A diverse distribution of articles across journals and countries underscores the global impact of PjBL, with notable contributions from Malaysia, China, and Russia. This paper synthesises the key themes from the literature review, emphasising the improvement in writing skills through PjBL and its challenges. The findings underscore PjBL's potential in transforming English writing education, emphasising the importance of addressing challenges for effective integration. The study contributes to the literature through a systematic analysis, providing insights into the trends and recommendations in PjBL in English writing research. Further research should delve into refining PjBL methodologies to maximize its innovative potential in English writing instruction.

Keywords: Project-based learning; English writing; writing skills; ESL students; systematic literature review

Introduction

English writing skill is one of the most essential language skills that need to be mastered by the students to ensure a successful academic and professional life. The emphasis of English proficiency is significant, particularly in the realm of English writing skills, which is defined as a productive skill (Jabali, 2018; Toba et al., 2019). Writing is productive as it requires students to transform intangible products; ideas and opinions into a tangible product; writing. It enables students to communicate their thoughts, feelings, and knowledge effectively. In Malaysia, students are required to learn English writing skills at all levels of education. According to Al-Khazraji (2019), the ultimate goal of education is to improve students' writing skills.

Students are expected to develop their thoughts and ideas into a well-structured and organised paragraph with relevant supporting details and evidence. Developing a well-structured paragraph enables students to achieve the main goal of writing, which is to enhance and improve their writing skills (Ceylan, 2019). However, challenges occur as writing skill is one of the difficult tasks to master by the students (Abdul Rahman et al., 2020; Ghulamuddin et al., 2021; Sabarun, 2019; Toba et al., 2019; Quvanch & Kew, 2019).

Students perceived writing as difficult due the complexity of writing rules and the need to learn new skills, which has impacted their motivation, interest, writing comprehension and performance (Hassan et al., 2021). Bulqiyah et al. (2021) reported that students struggle both affectively and cognitively in writing skills. Affective problems in writing arise from teachers' and students' attitude in the learning process such as lack of motivation, anxiety, low self-confidence, insufficient feedback, and limited opportunities for practice (Abdul Rahman et al., 2020; Akhtar et al., 2019; Bulqiyah et al., 2021; Hassan et al., 2021; Ismayanti & Kholiq, 2020; Quvanch & Sina, 2019). Cognitive problems in writing include difficulties in language transfer, grammar and syntax errors, vocabulary, and comprehension (Abdul Rahman et al., 2020; Akhtar et al., 2019; Bulqiyah et al., 2021; Ghulamuddin et al., 2021; Huang et al., 2022; Sabarun, 2019; Toba et al., 2019). Moreover, Ceylan (2019) indicated that the inability of students to write a clear, coherent, unique, well-organised, and meaningful writing is the result of a lack of fundamental strategies in learning writing.

A common approach to learning writing skill is from a traditional classroom. In a traditional classroom environment, the teacher is the centre of the learning process, as it evolves around the teachers' presence and input (Mascolo, 2009). Applying a traditional learning approach such as rote learning, grammar-fixated writing, and surface-level feedback from the teachers has affected students' writing skill (Siddiqui, 2020). Hence, there is a need to shift from a teacher-centred approach to a student-centred approach when learning writing skill.

The emergence of Project-Based Learning (PjBL) offers a pedagogical alternative in response to the limitations of traditional learning approaches. PjBL is a student-centred approach rooted in John Dewey's idea of 'learning by doing' by engaging students in an experiential and meaningful learning (Deveci, 2018). Larmer et al. (2015) has outlined seven key principles of PjBL which include challenging problems or questions, sustained inquiry, authenticity, students' voice and choice, reflection, critique and revision, and public product. Applying PjBL as a learning approach enables students to make their own decisions regarding the creation of their products by asking questions, conducting investigations, and developing their own solutions (Chen & Yang, 2019). The objectives of PjBL for students is to allow them to demonstrate their mastery of various skills, while teachers are responsible in fostering a collaborative learning environment and providing support, guidance, and facilitation to the students (Krepop, 2020). Studies have shown that higher academic achievement and positive learning attitude have been positively linked to PjBL (Chen & Yang, 2019). Hence, the use of PjBL in a writing classroom provides necessary solutions to the challenges faced by the students in writing as PjBL enables students to engage in higher order thinking skills, critical thinking, deep learning and encourages them to be an independent learner.

PjBL has been widely used in the field of sciences and mathematics, but it is used less frequently in the social sciences (Chen & Yang, 2019). The lack of studies on PjBL in the field of social sciences poses challenges in identifying recent trends of PjBL in the writing classroom. According to a detailed systematic searching strategy conducted, there is a lack of published documents especially on bibliometric analysis on PjBL in writing on databases such as Scopus and ScienceDirect. The searching from the bibliometric studies conducted in Scopus resulted in PjBL research trends in Indonesia (Irmade et al., 2024); PjBL in engineering education (Reis et al., 2017; Zarate-Perez et al., 2022), and PjBL in vocational education (Ahmad et al., 2023). Meanwhile, the search in ScienceDirect did not yield any result for bibliometric analysis on PjBL. From the searching strategy conducted, it is evident that articles published in the bibliometric analysis are lacking and require serious attention from the researchers.

Therefore, the aim of this study is to provide a bibliometric analysis of PjBL in English writing. Its objective is to examine the recommendations and trends found in PjBL publications related to English writing using the bibliometric analysis method. Additionally, the paper aims to contribute to the literature of bibliometric analysis published in the established journals.

This study also includes a visualization of the current trend in PjBL in English writing. Data from the Scopus database is utilised to answer the following research questions:

- i. What is the distribution of PjBL in English writing publications in the years 2018–2023?
- ii. What are the most significant countries in the PjBL in the English writing research area?
- iii. What are the most relevant journals in PjBL in English writing research?

Methodology

The objective of bibliometric analysis is to comprehend the research patterns within a particular field of study by examining data from academic literature databases. This process facilitates researchers in discussing current trends, identifying knowledge gaps, and exploring future directions for the specified field of study (Donthu et al., 2021; Md Khudzari et al., 2018). The research process and procedure used in this study are based on the Preferred Reporting Items for Systematic reviews and Meta Analyses (PRISMA) guideline method. PRISMA is one of the publication standards that is widely used in the medical and health field. PRISMA has 27 items of checklist for a systematic literature review (Moher et al., 2009). Although this systematic review is conducted in the field of social science, PRISMA is still relevant as a reference and guidance because it helps to create a clear research question and enables a systematic searching. Moreover, PRISMA reduces multiple types of bias, and it helps the researcher to synthesize the literature effectively (Howard et al., 2019). Through thorough reporting using the PRISMA template, readers can assess the suitability of the methodologies and, as a result, the accuracy of the study's findings (Page et al., 2021). The utilization of the PRISMA guideline encompasses four stages: identification, screening, assessing eligibility, and ultimately determining the studies to be included in the review.

In this SLR, the selected topics were PjBL and English writing. The Scopus database served as the source for studies under review. Figure 1 depicts the SLR process, which adhered to the PRISMA guideline method for data selection. The initial phase of this step involved identifying records in the database using specific keywords. The search string formation in Scopus entailed utilising phrase searching, field code function, truncation, the Boolean operator (OR, AND), and wild cards. Table 1 displays the search string and keywords employed. A total of 825 documents were identified through this search process.

Table 1. The search string

Database	Keywords used
Scopus	TITLE-ABS-KEY (("project-based learning" OR "project based learning") AND ("english writing" OR "Writing skills"))

Following the initial search, a screening process was conducted, resulting in 202 remaining documents. This screening was automated using the 'limit to' function in the Scopus database. Selecting appropriate criteria is crucial to ensure the relevance of chosen articles for the study (Alsolami & Embi, 2018). Therefore, this screening process aids in reducing the number of related articles (Okoli, 2015). Table 2 outlines the selection criteria applied in this study.

Table 2. Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Literature type	Research articles and conference proceedings	Review articles, books, chapters in books or book series, reports, theses
Language	English	Non-English
Publication stage	Published	Not published
Timeline	2018 to 2023	<2018
Subject Area	Social sciences and art and humanities	Non social sciences and non-art and humanities

The process continued with eligibility screening, where articles' relevance to the study's requirements was assessed through an examination the title, abstract, findings, and discussions. A total of 176 articles were excluded as they did not meet the study's needs. These exclusions were primarily due excessive emphasis on other learning approaches such as problem-based approach, research-based approach, web-based approach, and not project-based learning. The excluded articles were also focused on other fields such as statistics, data science, and engineering. Some studies were excluded because they are feature articles. Ultimately, 17 articles were chosen for data extraction and analysis process. The details of these processes are visualised further in Figure 1.

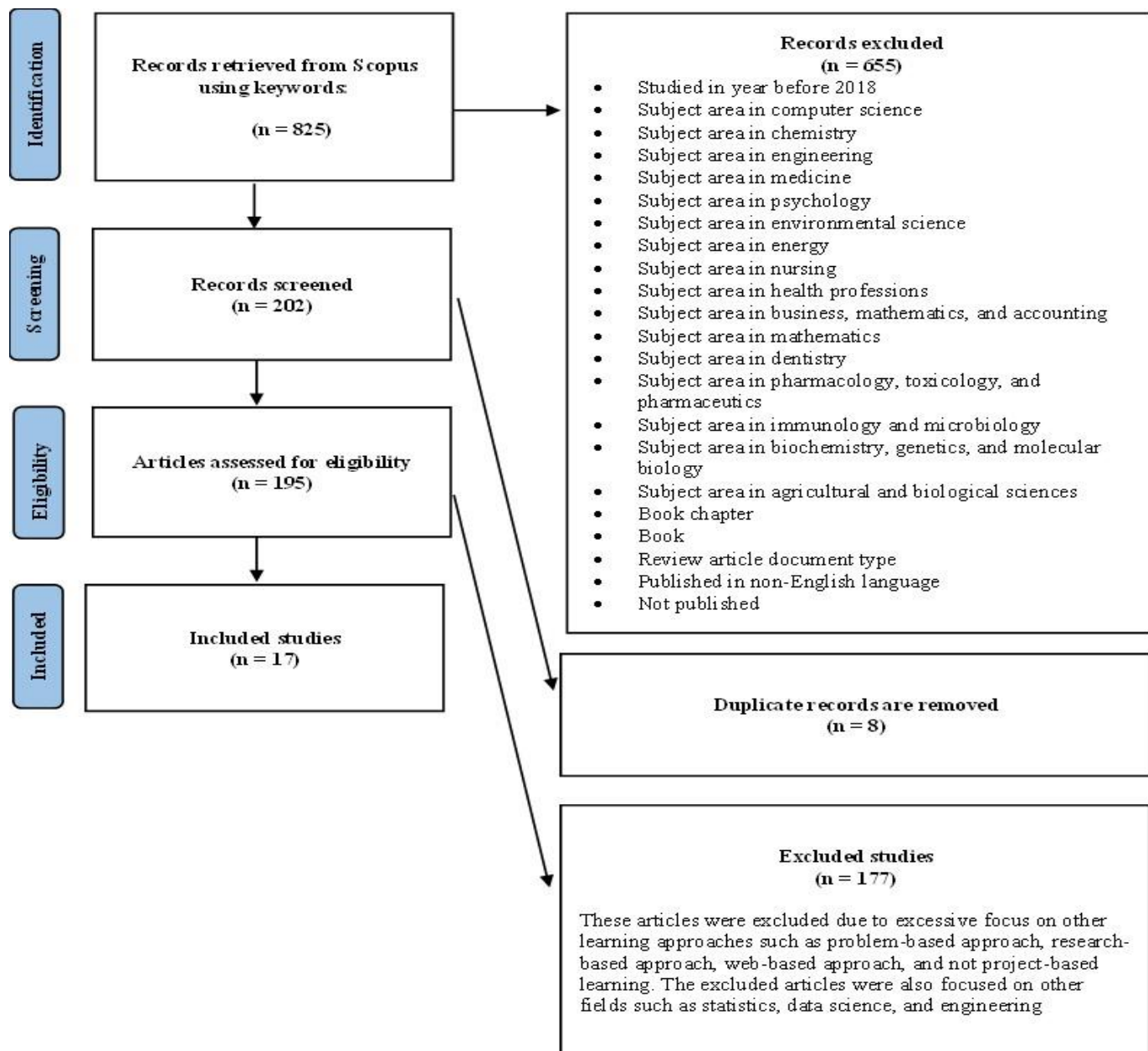


Figure 1. PRISMA flowchart
Source: adapted from Shaffril et al. (2019)

The Findings

This section provides a descriptive analysis of the 17 identified articles, including the data and their interpretation. The articles were extracted and analysed according to its distribution across years, countries, authors, and sources.

1. Characteristics of PjBL in Writing Output

This section delves into the characteristics of PjBL in English Writing research publication output.

Distribution and Growth Trend of Publication by Year

The analysis of PjBL in English writing research reveals an intriguing trend from 2018 to 2023. In 2018, there were 5 published articles on the subject, indicating a notable interest in the topic. However, there was a slight decrease in 2019 and 2020 with only 2 articles, suggesting a potential temporary decline in attention.

Subsequently, in 2021, the number of publications surged to 4, signifying a renewed and intensified interest in PjBL in English writing research. However, 2022 experienced another decline with only 1 article, possibly indicating a brief slowdown or shift in research emphasis. The trend rebounded in 2023 with 3 articles, showcasing a consistent but fluctuating trajectory over the years. This fluctuation in publication numbers suggests dynamic shifts in research interest and emphasizes the evolving nature of PjBL in the context of English writing research (Figure 2).

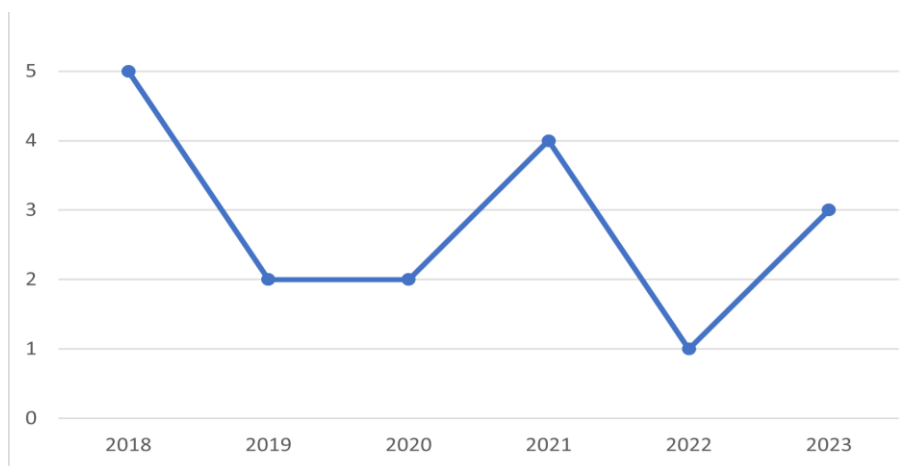


Figure 2. Distribution of publication by year

Distribution of Publication Output by Country

The bibliometric analysis of 17 articles on PjBL in English writing research reveals a diverse distribution across various countries (Figure 3). Notably, Indonesia emerges as a prominent contributor with 6 publications, reflecting a significant interest and engagement in PjBL within the country's academic community. Malaysia, China, and Russia each contribute 2 articles, highlighting a growing trend in these regions. Additionally, single contributions from South America, Egypt, Oman, Saudi Arabia, South Africa, and the United States collectively underscore the global nature of PjBL in English writing research, with varied participation from different corners of the world. This distribution suggests a growing interest and diverse engagement in the PjBL approach to enhance English writing skills on a global scale.

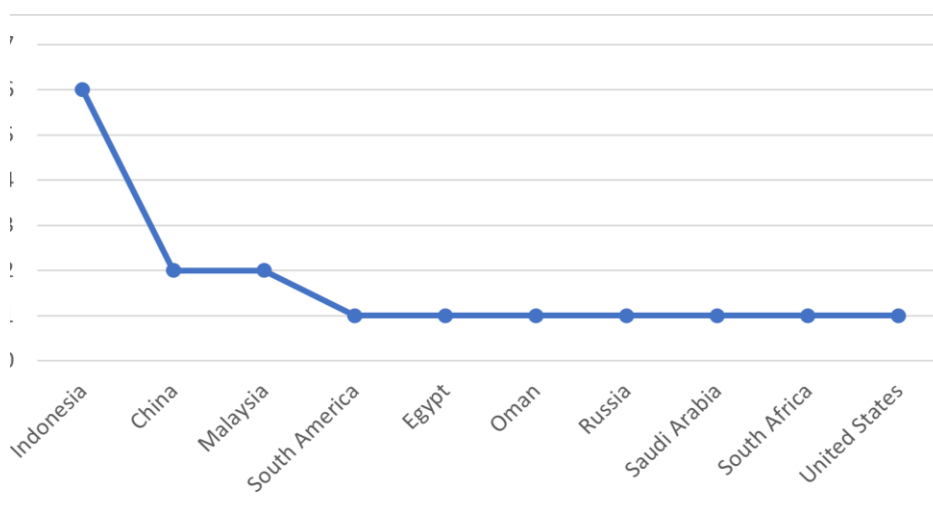


Figure 3. Distribution of publication output by country

Table 3 shows the relationship between the number of documents from each country and their publications. The analysis showed that six countries have published at least one document related to PjBL in

English writing in the Scopus database. Notably, the United States, despite having the fewest publications, exhibits a high citation rate, averaging 30.0 citations per documents. Conversely, Indonesia, with the highest number of publications, had an average number of 1.5 citations per document.

Table 3. Country and publications (by document)

Country	Document	Percentage (%)	Citation	Average citation per document
Indonesia	6	33.33	9	1.5
China	2	11.11	6	3.0
Malaysia	2	11.11	2	1.0
South America	1	5.55	5	5.0
Egypt	1	5.55	3	3.0
Oman	1	5.55	7	7.0
Russia	1	5.55	5	5.0
Saudi Arabia	1	5.55	12	12.0
South Africa	1	5.55	0	0
United States	1	5.55	30	30.0

Distribution of Publication Output by Journal

Table 4 shows the number of articles on PjBL in English writing that have been published in multiple journals in Scopus. There are 16 journals and one conference paper on PjBL in English writing in the Scopus database. The International Journal of Learning, Teaching and Educational Research has published the most articles on PjBL in English writing with a total of two articles, while other journals have published one article respectively. Articles published in the American Educational Research Journal are highly cited, with average citation of 30.0 per document, indicating the quality of the articles published.

Table 4. Journal and publications (by document)

Journal	Document	Citation	Average citations
American Educational Research Journal	1	30	30.0
Universal Journal of Educational Research	1	12	12.0
International Journal of Learning, Teaching and Educational Research	2	7	3.5
International Journal of Emerging Technologies in Learning	1	6	6.0
Journal of Physics: Conference Series	1	5	5.0
Integration of Education	1	5	5.0
Asian ESP Journal	1	4	4.0
English Scholarship Beyond Borders	1	3	3.0
European Journal of Educational Research	1	3	3.0
Turkish Online Journal of Educational Technology	1	3	3.0
Journal of Chemical Education	1	2	2.0
Review of International Geographical Education Online	1	0	0
Asian EFL Journal	1	0	0
International Journal of English Language and Literature Studies	1	0	0
Cogent Education	1	0	0
Journal of Language Teaching and Research	1	0	0

Discussion

This review presents findings related to the main themes of PjBL in English writing including the key benefits, challenges, and overarching themes that emerged from the review process. Table 5 illustrates the findings on PjBL in writing based on the specified themes.

Table 5. Findings on PjBL in writing

Authors/Themes	Improvement in writing skills	Benefits of PjBL	Challenges of PjBL
Duke N.K., Halvorsen A.-L., Strachan S.L., Kim J., Konstantopoulos S.	/	/	/
Deveci T.	/	/	/
Al-Busaidi S., Al-Seyabi F.	/	/	/
Lu Q.	/	/	/
Borisova E.N., Letkina N.V.	/	/	/
Ayu Sukerti G.N., Yuliantini N.	/	/	/
Nurhajati D.	/	/	/
Khalaf M.A., Alshammari A.	/	/	/
Kepe M.H., Weagle C.S.	/	/	/
Rojas M.A., Villafuerte J., Soto S.T.	/	/	/
Wan Yusof W.R., Kimi M., Wan Zullkiplee	/	/	/
W.S.H., Zailani M.A., Shahabudin M., Ismail A.A.-	/	/	/
H., Abd. Aziz Abdullah S.M., Ismail I.N.A., Raja	/	/	/
Gopal D.J.	/	/	/
Mantra I.B.N., Handayani N.D., Pramawati	/	/	/
A.A.I.Y., Widiastuti I.A.M.S.	/	/	/
Zhang D., Wang W.	/	/	/
Sudadi S., Ramli A., Nivin-Vargas L.R., Rahmadi	/	/	/
R., Kasuma J., Angulo-Cabanillas L.E.	/	/	/
Yunus M.M., Haleman K.N., Junaidi Y., Suliman A.	/	/	/
Nargis N., Armelia L.	/	/	/
Alwasilah S.S.	/	/	/

Improvement in Writing Skills

The review has come out with one big emerging theme of the improvement of PjBL in writing skill with sub themes related to skills in writing. Students are observed to have increased their creativity in writing (Deveci, 2023; Nurhajati, 2021; Yunus et al., 2018). This can be seen through their ability to create more creative ideas, which has improved their quality in writing. The implementation of PjBL in writing allows students to be creative and flexible in expressing their ideas, as they are not limited to idea restriction such as essay template. This is in line with Praba' et al. (2018) who noted that students' ability to generate ideas has resulted in an increased number of sentences counts in their essay. Moreover, the basic principle of PjBL where students need to work collaboratively may contribute to this improvement. Yunus et al. (2020) stated that students' creativity in writing skills has improved after working collaboratively through PjBL activities.

Vocabulary and grammar is the essential part in writing. Sukerti and Yuliantini (2018) observed that students' comprehension of the concept of grammar has improved, and their overall language competency has increased. This improvement was attributed to the iterative process of revision, feedback from peers and instructors, and self-reflection, aligning with the PjBL principle of critique, reflection, and revision (Larmer et al., 2015). Empirical evidence from various researchers supported the claim of enhanced language skills and vocabulary development in students engaged in PjBL (Alwasilah, 2019; Borisova and Letkina, 2019; Deveci, 2018; Kepe and Weagle, 2020; Mantra et al., 2019; Rojas et al., 2018; Yunus et al., 2018; Zhang and Wang, 2018).

In terms of organizational aspects of writing, Sukerti and Yuliantini (2018) revealed that students are able to enhance their abilities in composing essay outlines, drafts, and overall essays when engaging in PjBL. Nurhajati (2018) further underscored that PjBL helps students to produce coherent sentences by looking at students' ability in creating simple and meaningful sentences. Moreover, Kepe and Weagle (2020) and Rojas et al. (2020) also emphasized that PjBL is able to enhance students' fluency and coherence in writing. Moreover, students engaged in PjBL reported a meaningful learning process as they get to experience a real-world engagement and application (Alwasilah, 2019; Borisova & Letkina, 2019; Mantra et al., 2019; Rojas et al., 2018; Zhang & Wang, 2018). The integration of PjBL in the writing classroom facilitated the application

of language skills in authentic, real-life contexts, enhancing the practicality and relevance of the learning experience (Alwasilah, 2019).

Benefits of PjBL

The integration of PjBL in the context of writing not only facilitates students' fluency in writing, but enhances other skills, especially soft skills. The stimulation of students' interest in real-world issues, coupled with problem-solving and deep thinking, contributed to the development of critical thinking and problem-solving skills (Khalili et al., 2017). Hence, PjBL has contributed to students' critical thinking and problem-solving skills, as noted by previous researchers (Al-Busaidi & Al-Seyabi, 2021; Borisova & Letkina, 2019; Mantra et al., 2019; Nargis & Amelia, 2018; Nurhajati, 2018; Sudadi et al., 2021; Yunus et al., 2020).

PjBL also provides an opportunity for students to improve their social skills as they actively work collaboratively. According to many researchers, PjBL has been proven to improve students' teamwork and collaboration skills as they work together (Alwasilah, 2019; Kepe & Weagle, 2020; Khalaf & Alshammari, 2021; Mantra et al., 2019; Nargis & Amelia, 2018; Rojas et al., 2018; Sudadi et al., 2018; Sukerti & Yuliantini, 2018; Wan Yusof et al., 2019; Yunus et al., 2020; Zhang & Wang, 2018). In writing, students learn to think critically to improve their essay, enabling them to express their ideas in an organized and concise manner. A collaborative environment created by PjBL allows students to give and receive feedback from their peers and teachers, which has significantly improved their communication skills (Chen, 2021; Deveci, 2018; Praba' et al., 2019).

Various researchers have also highlighted that PjBL enhances students' motivation, engagement, and positive attitudes towards learning (Al-Busaidi & Al-Seyabi, 2021; Khalaf & Alshammari, 2021; Sudadi et al., 2018; Sukerti & Yuliantini, 2018; Wan Yusof et al., 2019; Yunus et al., 2020). The positive outcomes have fostered a conducive learning environment for students to develop their skills in the classroom.

Challenges of PjBL

While PjBL demonstrates substantial benefits, effective implementation necessitates careful consideration. As posited by Tamimi & Salamin (2020), several factors underpin successful PjBL implementation. Time management issues were consistently identified by Deveci (2023). Students were reported to struggle with early submission of assignments, and difficulties in finding mutual time between group members to do discussions, affecting the outcomes of the project. Al-Busaidi and Al-Seyabi (2021) observed that the time management issue arises when students struggle to meet other simultaneous deadlines of other assignments. This is because PjBL revolves around projects, requiring students to allocate extra time for collaborative discussions and reaching mutual agreements. Other than that, Deveci (2023) also highlighted challenges related to interpersonal conflicts, language imposition, and difference in writing styles. These challenges indicate that there are potential barriers to effective collaboration in implementing PjBL.

Conclusion

In conclusion, this bibliometric analysis on 17 articles from Scopus database conducted in this study sheds light on the trends and dynamics of PjBL in English writing research from 2018 to 2023. The findings, encompassing distribution by year, country, and journal, offer valuable insights into the global landscape of PjBL in the context of writing. Indonesia emerges as a notable contributor, reflecting a significant interest in PjBL within its academic community, while diverse contributions from countries like Malaysia, China, and Russia emphasize the global nature of this pedagogical approach.

The literature review has identified key themes related to PjBL in writing, focusing on the improvements in writing skills, associated benefits, and the challenges encountered. The positive impact of PjBL on writing skills is evident, with a consistent emphasis on enhanced creativity, vocabulary, grammar, and organizational aspects of writing. The collaborative nature of PjBL not only fosters academic growth but also contributes to the development of critical thinking, problem-solving, and social skills.

However, effective implementation of PjBL is not without challenges. Time management issues, interpersonal conflicts, and differences in writing styles pose potential barriers to collaboration, necessitating

careful consideration and planning. These challenges underscore the importance of addressing practical aspects to ensure the seamless integration of PjBL into writing classrooms.

The comprehensive review provides a foundation for future research endeavours in the field of PjBL in writing. The dynamic trends observed in publication output indicate an evolving research landscape, prompting further exploration and refinement of PjBL methodologies. The identified gaps in current literature, especially in the social sciences, highlight the need for more extensive studies and collaborative efforts to deepen our understanding of PjBL's impact on English writing skills. In essence, this study contributes to the growing body of knowledge on PjBL in English writing, offering a nuanced understanding of its trends, benefits, and challenges. As educators navigate the complexities of teaching writing skills, the insights gleaned from this review and analysis can inform pedagogical practices, fostering a more effective and student-centred approach to English writing instruction.

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