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Article

Project-Based Approach and Language Learning Motivation in Higher Education: A Scoping Review

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Abstract

Project-based learning (PBL), as a dynamic form of experiential education, stands as a powerful and transformative approach within student-centered pedagogical evolution, while a systematic synthesis of what features of PBL help promote language learning motivation in higher education level over the last 10 years is lacking. Filtered from the ERIC, Scopus, SAGE Journals, Web of Science, and ProQuest databases, a scoping review of 20 studies from 2015 to 2024 was carried out. This scoping review analysed the main research context of PBL in language learning realm, identified the key features of PBL in promoting language learners' learning motivation, and analysed the challenges that students and teachers mainly confronted when conducting PBL in language class. The results show that the vast majority of studies about PBL focus on English learning and teaching; two key features are identified to promote students' learning motivation in language class; several challenges confronted by instructors and learners are specified. A dual method of utilizing key features and overcoming main challenges synthesized in this review, is a way forward in promoting and maintaining learners' learning motivation in language class of higher education with PBL.

Keywords

Project-Based Learning, Motivation; Language Learning, Higher Education.

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Introduction

In the last decades, attention of education methods has experienced a “paradigm shift” (Shin, 2018) from teacher-centred to student-centred learning. Scholars (Park & Hiver, 2017; Petersen & Nassaji, 2016) has advised that students should gain more knowledge through experimental learning than through passive classroom environment. Project-based learning (PBL), as a form of experiential learning, has become popular in foreign languages course learning. PBL is widely regarded as an innovative and impactful methodology to foster the seamless, simultaneous acquisition of language proficiency, subject-specific content, and critical thinking skills. PBL is an innovative and empirically proven instructional method built upon student-centred, authentic, interdisciplinary and long-term learning activities that enhance students’ interest and motivation (Kokotsaki, Menzies, & Wiggins, 2016).

In a student-centred learning method, learning motivation is very important. Dörnyei (1994) once argued that Motivation stands as an indispensable force, igniting students' perseverance and fueling their strides through the intricate journey of language mastery. According to Hannula (2006), theoretical foundation of motivation is a structure of needs and goals, the goal is to motivate the students’ actions to achieve. Scholars widely concur that hands-on language learning experiences exert a profound influence on fostering and sustaining learner motivation (Dörnyei, 1994; Dörnyei & Otto, 1998; Gardner, Lalonde, & Moorcroft, 1985; Guilloteaux & Dörnyei, 2008). The motivation to learn a language is a complex phenomenon that can be broken down into two categories: the learners’ attitude toward the target language community and their communication requirement. Gardner (1995) defined motivation for L2/FL as “the combination of effort and desire to achieve the goal of learning the language along with favourable attitudes toward that learning.” According to him, “the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity” is the definition of L2/FL learning motivation. The communicative value of this type of language will be emphasized by students and they will become motivated to acquire proficiency in it if they are required to use it in a variety of social situations or to pursue professional success. In a similar vein, students are more likely to want to interact with the language user if they view them favourably.

According to three constructivist principles, from which PBL derived, learning is contextually specific, students actively participate in the learning process, and social interactions and the sharing of information help them achieve their objectives (Park & Hiver, 2017). Within the PBL model, learners actively take charge in selecting their topics, reading materials, and the pathways they dive into for exploration. They determine the process and the artifact, set the learning goals, seek out both traditional and web-based resources, and decide on how the learning outcomes should be assessed. They must craft and present innovative yet practical solutions to these real-world challenges, fostering their creative thinking and sharpening their problem-solving prowess. In this way, the students become self-regulatory and autonomous, taking charge of and having control over their learning. The teacher, working as a facilitator, gets involved in the whole process to offer support and guidance when necessary. The evaluation of learning outcomes may be conducted by the teacher, individual students, or groups, and this process may be initiated by the teacher or determined autonomously by learners themselves. It may include reports, essays, or presentations indicative of the knowledge and skills that the students have acquired. In addition, the students may record the process and stages of their project work by writing diaries or maintaining e-portfolios (Kokotsaki et al., 2016; Park & Hiver, 2017; Petersen & Nassaji, 2016). Therefore, PBL is a dynamic, collaborative, inquiry-based teaching method where students integrate, apply, and construct knowledge through collective problem-solving, as they unite to craft innovative solutions to multifaceted, real-world challenges (Guo et al., 2020). As a result, PBL enhances students' engagement and enthusiasm in language learning, thereby fostering positive perceptions of this pedagogical approach. This transformative effect ultimately ignites their motivation to learn languages more dynamically and purposefully, which is also proved by scholars (Al-Bahadli, Al-Obaydi, & Pikhart, 2023; Amorati & Hajek, 2021; Azamatova et al., 2023; Muhammad, 2020; Rodríguez-Peñarroja, 2022; Shin, 2018; Tanaka, 2022; Wang, 2016) in their researches.

Scholars (Kokotsaki et al., 2016; Markula & Aksela, 2022; Simpson, 2011) concluded and analysed the difference of features/characteristics of PBL from that of other teaching approaches from different dimensions. Markula and Aksela (2022) reviewed previous researches (Krajcik et al., 1998; Krajcik & Shin, 2014; Marx et al., 1997) and concluded 6 main characteristics of PBL for studying into quality of the PBL units in practice, named: driving questions, learning goals, scientific practices, collaboration, using technological tools, and

creating an artefact. In his PhD thesis, Simpson (2011) cited and analysed the 11 features from the essence of authentic learning.

In this research, for further analysis, the researchers integrated the above-mentioned features/characteristics into 9 features totally as present in the following table (Table 1):

Table 1: Framework of Main Features of PBL.

Feature	Key words	(Markula & Aksela, 2022)	(Simpson, 2011)
Driving questions	Authentic, challenging, related to subject, open-ended, inquiry-based.	√	√
Learning goals	Process- or product-oriented.	√	√
Scientific practices	Self-plan, scientific method.	√	
Collaboration	Participation, collaboration, engagement, cooperation, communication.	√	√
Autonomy	Self-directed, autonomy, by themselves.		√
Scaffolding	Scaffold, build peer and lecture communication.		√
Using technological tools	Technological proficiency, digital tools, technology.	√	√
Creating an artefact	Product, present.	√	√
Integrated assessment	Assessment		√

This research investigates the application of PBL in promoting learners' language learning motivation for 3 reasons. First, the efficacy of incorporating PBL in promoting learning motivation is widely known for years, related research on promoting language learning motivation with PBL method is deficiency relatively. Second, although prior studies have demonstrated a positive link between PBL and language learning motivation (Al-Bahadli et al., 2023; Amorati & Hajek, 2021; Azamatova et al., 2023; Muhammad, 2020; Rodríguez-Peñarroja, 2022; Shin, 2018; Tanaka, 2022; Wang, 2016), the influence of key features of PBL may vary according to language learning contexts, especially in higher education. Third, it's necessary to systematically illustrate and analyse the challenges confronted by instructors and learners in the process of language learning using PBL.

This review research aims to examine how PBL was used in language learning and investigate the challenges teachers and students confronted in the language teaching/learning class with PBL. To do this, this research examines published literature, synthesizes findings, and summarizes and expounds around the following research questions:

1. In the realm of language teaching/learning, what contexts were studied by using PBL to promote students' motivation in higher education level?
2. What are the features of PBL that contribute to the promotion of language learners' motivation in higher education level?
3. What are the challenges confronted by teachers and learners when conducting PBL in language learning in higher education level?

Methods

Protocol

The aim of this research is to synthesize knowledge about using PBL in language learning to promote students' learning motivation and investigating challenges teachers and students confronted in language learning in higher education level. Unlike a systematic review, A scoping review serves as a methodological approach to chart the foundational concepts underpinning a research domain and synthesize the breadth of available evidence without regard for methodological rigor. Consequently, this article deliberately omits formal quality assessments of included studies (Peters et al., 2015). In a scoping review, it is important to include information about the protocol which should also be developed preferentially (Peters et al., 2015). The protocol and procedures of this scoping review was adopted from Preferred Reporting Items for Systematic Reviews and Meta-Analysis – PRISMA extension for Scoping Review (PRISMA-ScR) developed by Tricco et al. (2018).

Eligibility Criteria

To be included in this review, papers searched from 5 database (Education Resources Information Centre (ERIC), Sage Journals, Scopus, Web of Science, and Proquest) should be peer-reviewed articles if published between the period of 2015-2024, written in English, involving in measuring learning motivation and focus on specific dimension of treatment burden (i.e. project-based learning, PBL, PjBL), and developed in the conceptual framework (e.g. education, language teaching, linguistics, higher education). Quantitative, qualitative and mixed-method studies were included, for different aspects of measuring treatment burden were considered. Papers were excluded if they are grey articles, for example, reports, working papers, reviews, unpublished literatures, etc. Other treatments, like problem-based, task-based approaches, were not included. For the purpose of this research, papers focus on other contexts instead of language learning and higher education were also excluded. Details of inclusion and exclusion criteria are listed in the following table (Table 2):

Table 2: Inclusion/Exclusion Criteria.

Inclusion Criteria	Exclusion Criteria
1. written in English.	1. Review articles or conference report, like systematic review, narrative review, meta-analysis review, etc.
2. Focus on Project-based approach.	2. Conducted with other learning/teaching approach, for example, problem-based, task-based, etc.
3. Conducted in language learning context; including EL, L2 learning; or language reading, writing, listening, speaking, translating, etc.	3. Conducted in other classes other than language learning.
4. About effect on motivation of students during the intervention.	4. Not contain analysis of students' motivation during the intervention.
5. Conducted in higher education institution, including university, college or vocational college.	5. Conduct in primary or middle level education, e.g. primary/elementary school, middle school or high school.
6. Conducted in recent 10 years, i.e. from 2015 to 2024.	6. Research conducted before 2015.

Searching and Filtering

In this scoping review, peer-reviewed articles written in English and Chinese was searched and included. The publish period was limited between 2015-2024. An electronic search was conducted on the following journal database: Education Resources Information Center (ERIC), Sage Journals, Scopus, Web of Science, and Proquest. The following research query was created based on research aims and research questions:

("project-based" OR "PBL" OR "PjBL") AND ("English learning" OR "language learning" OR EFL OR L2) AND "motivation"

The search conducted on 18th April, 2024 with totally 1526 articles identified. Based on eligibility criteria, duplication and screen reviewing conducted focusing on title and abstract, 1481 articles were removed and 45 records were reported. After retrieval searching and content reading by researchers, 25 records were removed, and 20 studies were left and included in to investigate about how PBL was used in promoting language learning motivation in higher education level at last (Figure 1).

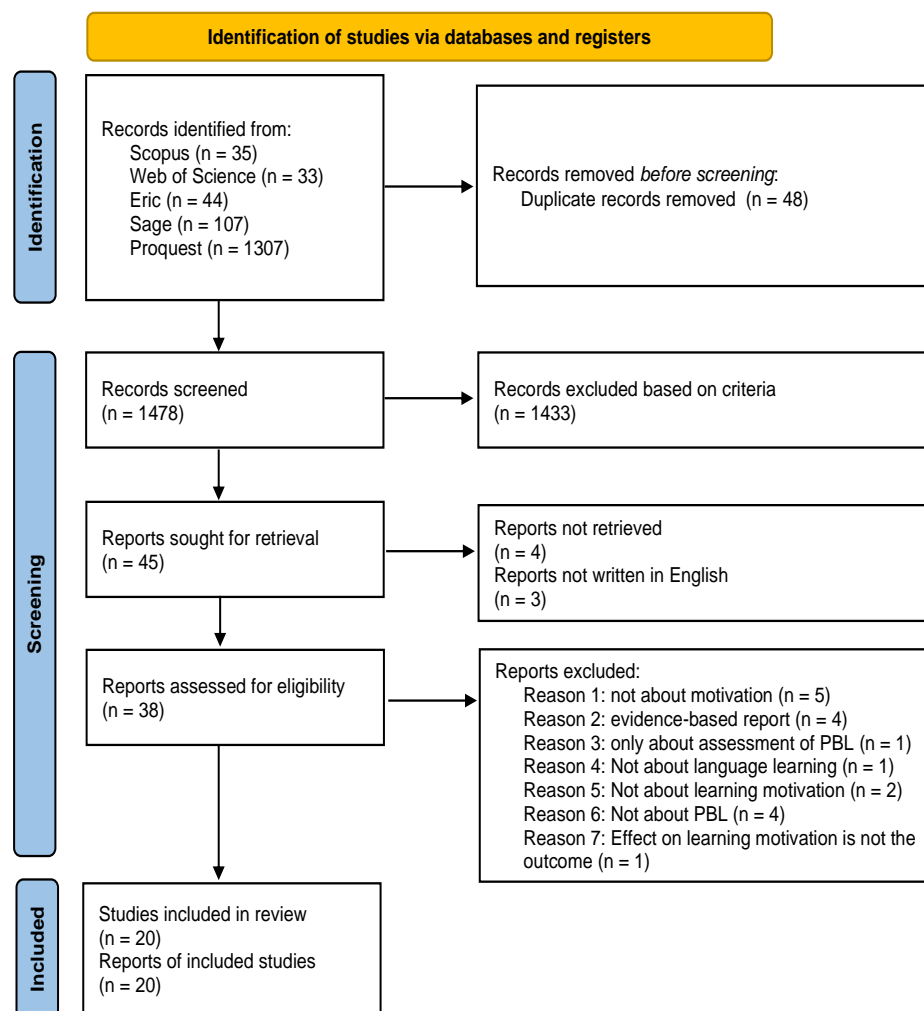


Figure 1: *Screening Procedure Flowchart.*

Results

A total of 20 articles were examined to investigate the context, feature effects and challenges confronted by students and teachers in conduction of language teaching using PBL to promote students' learning motivation. One table was used to illustrate the characteristics of sources, 4 figures were designed help to present synthesis of result schematically.

Characteristics of Sources of Evidence

In Table 3, main characteristics of the articles were listed. It includes the database where the article was found, location, research design, context of teaching, effective features of PBL, and challenges students and teachers confronted in the process. To distinguish between different learning environments, the context of teaching in this research as classified into the following categories: 1. English as Foreign Language - EFL, which contains General English course and medium and advanced level English course for English major undergraduates. 2. Foreign Language Learning – FLL, which contains course for learning of languages other than English. 3. English for Special Purpose – ESP, refers to the specialized teaching of English tailored for specific professional or academic contexts, such as business operations, scientific research, or global communication.

The components in Feature section were adopted from the framework integrated from Markula and Aksela (2022) and Simpson (2011), which has been analysed in the previous part. Due to the research aim and questions, the Challenge section comprised keywords from teachers' (Ts) perspective and students' (Ss) perspectives both.

Table 3: *Characteristics of Reported Articles.*

Author(year)	Database	Location	Context	Design	Features	Challenges
Al-Bahadli et al. (2023)	WOS	Iraq	EFL	mixed-method	collaboration; driving questions; use technological tools	learning process; assessments.
Aldobekhi and Abahussain (2024)	SCOPUS	Kingdom of Saudi Arabia.	EFL	mixed-method	collaboration; autonomy; driving questions	project conducting;
Amorati and Hajek (2021)	SCOPUS	Australia	FLL-advanced Italian	mixed-method	driving questions	project conducting; time management.
Asfihana et al. (2022)	WOS	Indonesia	ESP-English for Islamic Studies	Qualitative	driving questions; collaboration; use technological tools; scaffolding,	preparation; assessment.
Azamatova et al. (2023)	ERIC	Kazakhstan.	FLL-Russian course	quantitative	driving questions; use technological tools	well designed.
Deng (2018)	ERIC	mainland China.	ESP-Business English Translation course	mixed-method	driving questions. collaboration. driving goals.	assessment; well designed.
Deng (2020)	ERIC	mainland China	ESP-Business English Translation flipped classroom	quantitative	integrated assessment	well designed.
Grant (2017)	SCOPUS	Macau	ESP writing course	mixed-method	driving questions; autonomy; use technological tools; integrated assessment.	time management; language quality.
Hekmati (2022)	PROQUEST	Iran	EFL	qualitative	driving questions; autonomy; collaboration.	students' perception; language quality.
Hojeij et al. (2021)	PROQUEST	United Arab Emirates	ESP-literature for children course	qualitative	driving questions; collaboration; autonomy	time managements; class management. less experience.
Hong (2019)	SCOPUS	Taiwan	ESP-advanced culinary English course	qualitative	driving questions; autonomy; collaboration; learning goals; creating an artefact.	students' perception; improper assignment; time management.
Kato, Spring and Mori (2020)	WOS	US and Japan	EFL and FLL-Japanese course	mixed-method	driving questions; use technological tools	technology skills; preparation; well designed.

Muhammad (2020)	ERIC	Indonesia	ESP-English for Manajemen Dakwah(training course for priest or preacher of Islam)	quantitative	unknown	technology skills.
Nguyen (2021)	ERIC	Vietnam	ESP-intercultural Communication Competence course	mixed-method	driving questions; collaboration.	less experience; well designed; assessment.
Rodríguez-Peñarroja (2022)	ERIC	Spain	ESP-advertising related course	mixed-method	driving questions; collaboration.	time management; well designed.
Shin (2018)	ERIC	unknown	EFL	mixed-method	driving questions; collaboration.	unproper assignment.
Slabodar (2023)	ERIC	Israel	ESP-English for Purposes of International Communication (EPIC)	qualitative	autonomy; scaffolding; driving questions; creating an artefact.	preparation; time management; assessment; lecturers' perception. collaboration.
Tanaka (2022)	WOS	Japan	EFL	quantitative	autonomy, collaboration.	unknown
Van Loi and Hang (2021)	SCOPUS	Vietnam	ESP-Grammar, English for International Communication, and Basic Reading and Writing	mixed-method	autonomy; driving questions; collaboration.	groupwork; time management. technology skills; assessment.
Wang (2016)	PROQUEST	Taiwan	EFL	quantitative	driving questions; collaboration; integrated assessment. learning goals	unknown

Synthesis of Results

As for the location of selected 20 studies, the majority were from East Asia(n=8) with regions of China contains 5. Studies in the Middle East(n=5) followed as the second most. Other regions contain no more than 5 included: South Asia, Noth America, Europe and Australia. (Which represents in Figure 2)

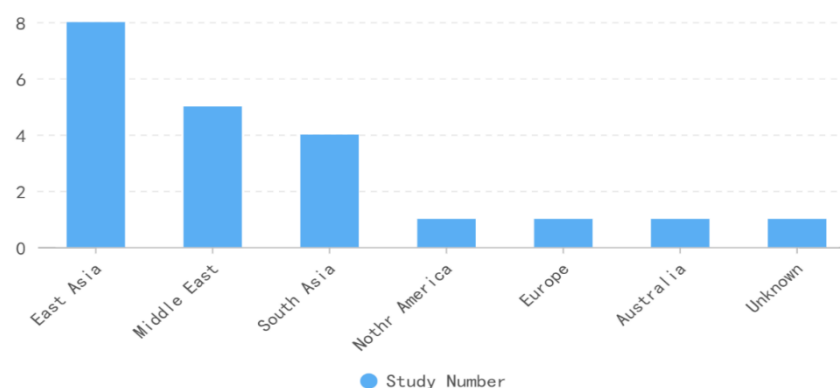


Figure 2: Location of Study.

The majority of studies were conducted from 2021-2024 (n=13) with 5 were conducted in 2023. (As represented in Figure 3)

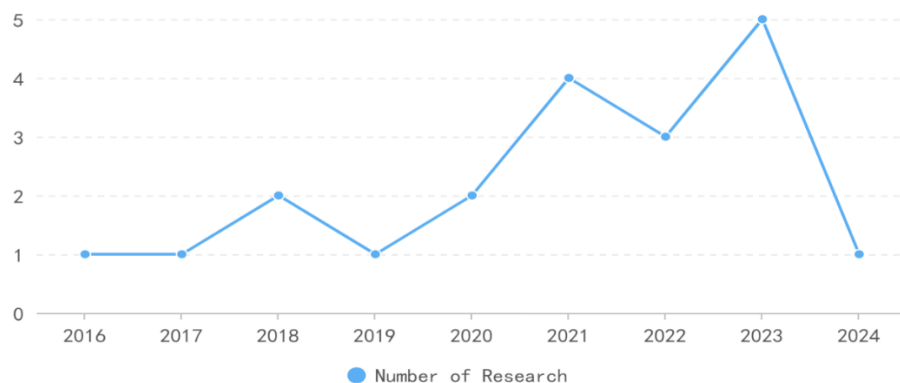


Figure 3: Year of Study.

The research context of vast majority of studies were about English learning and teaching (n= 17), among which were about English for special purpose - ESP (n= 11), followed by English as foreign language - EFL (n= 7). The rest three studies were conducted to investigate foreign language learning – FLL (n= 3). (Which is represented in Figure 4) For research design, 10 out of the total 20 articles were designed as mixed-method. The rest studies were designed quantitatively (n= 5) and qualitatively (n= 5) respectively.

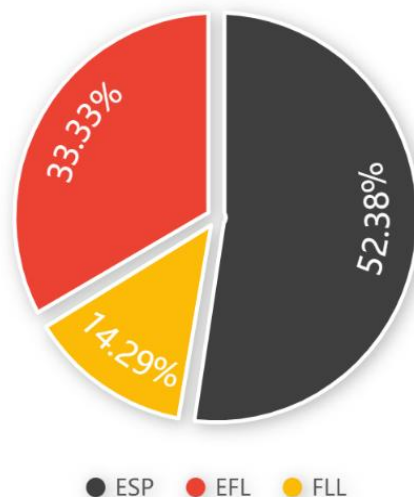


Figure 4: Research Context.

In the 20 articles, the authors illustrated features of PBL in language learning and teaching practice. Based on researches of Markula and Aksela (2022) and Simpson (2011), features of PBL were concluded as 9 section in this research, which included: 1. Driving questions; 2. Learning goals; 3. Scientific practices; 4. Collaboration; 5. Autonomy; 6. Scaffolding; 7. Using technological tools; 8. Creating an artefact; and 9. Integrated assessment. Among the 20 studies, (as represented in Figure 5) the vast majority (n= 17) mentioned the feature *Driving questions*. *Collaboration* is the second most mentioned (n= 13), followed by *Autonomy* as the third most (n= 8). What need to be pointed out is no study summarized the feature *Scientific practices*.

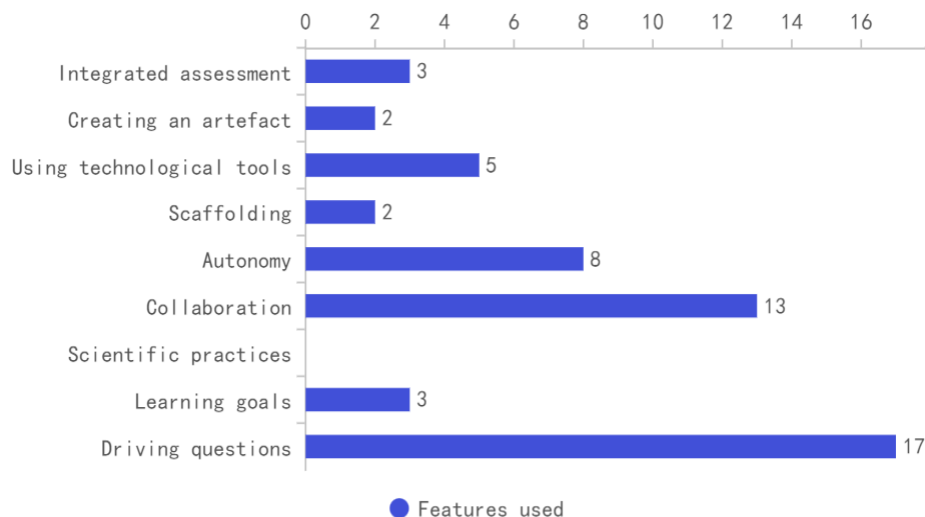


Figure 5: *Features Used for Promoting Learning Motivation.*

Among the total 20 articles, authors of 2 articles didn't mentioned challenges when conducting PBL in their research. For well analysing, key words about the challenges in rest articles were extracted and classified by researchers of this study. Total 8 sections were concluded with keywords in the reported articles: 1. Process complex; 2. Assessment is difficult; 3. Time management; 4. Class management (class size and group work); 5. Not easy to participate; 6. Difficult to realize creative of project; 7. Need to be well planned / designed; and 8. Students' & teachers' perception & language proficiency. Of the 8 sections, *need to be well planned / designed* was the most mentioned challenge ($n=10$). Besides, *time management* ($n=7$) and *assessment is difficult* ($n=6$) were also indicated frequently. Among the reported studies, the overwhelming majority ($n=16$) analysed teaching challenges from perspective of instructors, among which 9 studies also analysed learning challenges from learners' perspective simultaneously. In the following figure (Figure 6), keywords used for illustrating challenges in the studies are listed.



Figure 6: *Keywords Used About Challenges.*

Discussion

In this scoping review, we identified 20 studies on using PBL in language learning context with the result that students' learning motivation was promoted. Three research questions were raised to investigate the current research situation of PBL, and the correlation of features of PBL and language learning motivation. Based on these three research questions, discussion is combined with analysis and review of the 20 reported articles.

RQ 1. *In the realm of language teaching/learning, what contexts were studied by using PBL to promote undergraduate students' motivation?*

In the reported 20 articles, 17 were written to investigate English teaching and learning using PBL with the result of promoting students' learning motivation. Among the 17 reported researches, 11 were studying English for special purpose - ESP. In his research, Carver (1983) distinguished common/general English teaching with English for special/specific purpose, and concluded features of ESP as with authentic material, purpose-related oriented, and self-direction. Based on his study, Carver (1983) also classified ESP into three sections: 1. English within the confines of a restricted linguistic paradigm; 2. English for academic pursuits and professional mastery; and 3. English with specific topics. This research analysed the 17 reported articles, and found that they covered different purposes and topics. For example, Hong (2019) taught culinary English for sophomore food and beverage management and culinary arts major undergraduates; Muhammad (2020) tried to promote learning motivation of students in English programme of Manajemen Dakwah (a training course for priest or preacher of Islam). Two studies focus on academic research in English: Grant (2017) used PBL to teach English writing course in an Asian context, and Van Loi and Hang (2021) used PBL in English Proficiency courses including grammar, reading and writing. Topics of the reported ESP articles vary: Deng (2018, 2020) and Rodríguez-Peñarroja (2022) studied Business English teaching using PBL; Hojeij et al. (2021), Nguyen (2021), and Slabodar (2023) analysis effect of PBL on students' motivation from context of literature and intercultural communication.

Contrast with ESP, EFL mainly refers to common core English and general English (Carver, 1983) in this research. And the participants refer to non-English major undergraduates. It is worth mentioning that Hekmati (2022) emphasize the effect on participants' knowledge achievements of their major (medical); Tanaka (2022) took participants' gender as a variable to analyse effect of PBL in their research. Three articles were studying effect of PBL on non-English classes: Amorati and Hajek (2021) investigated the impact of a PBL learning module on students' motivation and creativity in Advanced Italian course; Azamatova et al. (2023) tried to investigate the impact of integrating digital tools and AI applications on academic performance, learning motivation, and student retention within Russian language courses; Kato et al. (2020) tried to conduct a long-distance programme using PBL to enhance participants' oral proficiencies in Japanese course of Japanese and U.S universities.

Besides, technology use became a new orientation in the research of PBL in language learning and teaching. Especially in recent 5 years, scholars (Al-Bahadli et al., 2023; Asfihana et al., 2022; Azamatova et al., 2023; Hojeij et al., 2021; Kato et al., 2020; Muhammad, 2020; Rodríguez-Peñarroja, 2022) combine their research with using technology skills in conducting PBL. For example, Asfihana et al. (2022) examined students' learning experiences of incorporating PBL into technology use; Hojeij et al. (2021) delved into faculty members' perspectives on the immersive, technology-rich PBL journey of crafting digital storybooks within a children's literature course; Muhammad (2020) and Wang (2016) used software and applications to help conduct PBL in English learning. Some scholars (Deng, 2020; Nguyen, 2021; Wang, 2016) studied new assessment ways to improve PBL method so as to promote learners' motivation. Deng (2020) evaluated the effectiveness of a novel process-oriented assessment model implemented within a flipped PBL translation classroom; Nguyen (2021) investigated students' reflections and teachers' beliefs regarding the implementation of the PBL assessment method in teaching the Intercultural Communication Competence course; Wang (2016) explored the use of PBL and an online peer assessment system in an application to hence students' English learning motivation.

Above all, the majority of research on using PBL to promote learning motivation in language learning/teaching realm is focusing on English learning and teaching; ESP is the main context and the research orientation, topics and purpose of the studies vary.

RQ2. *What are the features of PBL that contribute to the promotion of undergraduate students' motivation in language learning?*

In this research, the researchers found that vast majority (n= 17) of the reported studies summarized the *driving questions* as key feature of PBL to promote learning motivation. Based on researches of Markula and Aksela (2022) and Simpson (2011), key words summarized from the reported articles, including “authentic, challenging, related to subject, and open-ended”, can be concluded as the feature *driving questions*. Al-Bahadli et al. (2023) indicated that PBL “offer students opportunity to express creativity” and “solve real-world problems.” Asfihana et al. (2022) and Hojeij et al. (2021) believed PBL is “inquiry-based” and “triggers students to focus on the direction on process”. Among all, “authentic” was the most mentioned in the reported articles (Amorati & Hajek, 2021; Grant, 2017; Hekmati, 2022; Hojeij et al., 2021; Hong, 2019; Kato et al., 2020; Nguyen, 2021; Rodríguez-Peñarroja, 2022; Shin, 2018; Van Loi & Hang, 2021). In addition, *collaboration* was summarized as the second most feature (n= 13) in the reported articles. Key words like “participation, collaboration, engagement, cooperation, and communication” was classified to this feature (Al-Bahadli et al., 2023; Aldobekhi & Abahussain, 2024; Asfihana et al., 2022; Deng, 2018; Hekmati, 2022; Hojeij et al., 2021; Hong, 2019; Nguyen, 2021; Rodríguez-Peñarroja, 2022; Shin, 2018; Tanaka, 2022; Van Loi & Hang, 2021; Wang, 2016).

The key words “self-directed, autonomy, by themselves” were concluded as *Autonomy* which is the third most mentioned feature (n= 8) among the 20 studies. Then comes *using technological tools* (n= 5) with key words “technological proficiency, digital tools, and technology”. Other feature mentioned in no more than 5 contains integrated assessment (n= 3), learning goals (n= 3), scaffolding (n= 2), creating an artefact (n= 2), and scientific practices (n= 0).

In conclusion, *driving questions* and *collaboration* are the two key features that promote students' learning motivation when conducting PBL in language learning class. Besides, learners' *autonomy* and *technology use* during the project conducting also plays a role in affecting learning motivation in the language learning context. From the review result, learners' *scientific practice* doesn't influence their learning motivation in language learning class.

RQ3. *What are the challenges of PBL confronted by teachers and undergraduates in language learning context?*

Thomas (2000) concluded difficulties confronted by teachers and students when conducting PBL. They believed that the main challenges for students are two points: 1. The imperative to cultivate diverse support systems throughout their investigative journey; and 2. Sustaining motivation for inquiry. Meanwhile difficulties mainly are concentrated on teachers for three aspects: challenges, enactment, and change. Among them, challenge refers to higher demand of three points, which are *collaboration*, *technology use*, and *project-based science*. In short, teachers need to realize students collaborate to exchange ideas and negotiate meaning; technology must transcend its role as a mere instructional crutch and evolve into an empowering cognitive tool.; and students should be empowered to actively construct their own understanding through the pursuit of a driving question. *Enactment* contains time management, classroom management, control of the flow of information in class, support of student learning, technology use, and assessment. *Change* refers to teacher need to change or modify his/her teaching practices. Chen, Kolmos and Du (2021) extended challenges to three dimensions, which are individual level, institutional level, and cultural level. Individual challenges also include challenges for students and teachers, while challenges of institution are mainly about class and time management, teaching curriculum arrangement, and objective conditions. In Chen and his colleague's study, they analysed challenges from cultures, like nationality and culture sensitivity, ways of thinking, and language barriers for non-native students. In order to facilitate the analysis, the researchers combine the key words extracted from reported articles with terms in the upper researches, and concluded several challenges in the reported studies.

Among the 20 reported articles, the major challenge when conducting PBL in language learning, not only to teachers, but also to students, is *need to be well planned/designed* (n= 10). However, students and teachers confronted different tasks when preparing for PBL method. According to Aldobekhi and Abahussain (2024), students mainly were confused about project conducting, and Hojeij et al. (2021) also indicated that there were general stressors about the project due to the less experience of students in conducting PBL. While to teachers, improper teaching method and materials, and lack of appropriate PBL design and curriculum set obstacle when conducting teaching (Nguyen, 2021). Due to the key features summarized in upper content, technology use is becoming more and more important when teaching language with PBL method. In consequence, teachers and

students also need to overcome challenges of using technology when teaching/learning language with PBL. Azamatova et al. (2023) summarized that both teachers and students should be carefully planned when conducting PBL using digital tools and AI; Kato et al. (2020) and Muhammad (2020) indicated that participants' deficiency in technology skills hindered the process of teaching and learning.

7 studies indicated that conducting PBL in language learning consumed large amount of time. Grant (2017) even indicated that *time-management* is hard for teachers. Van Loi and Hang (2021) also believed that more time consumed lead to heavy workload to instructors. Furthermore, a few research (n= 6) stated briefly that traditional assessment is not suitable in PBL method. Due to the new teaching method, it's hard to *evaluate/assess* and observe in the project conduction (Deng, 2018).

In addition, some scholars (Amorati & Hajek, 2021; Grant, 2017; Hekmati, 2022; Hong, 2019; Slabodar, 2023) found that *students'/teachers' perception* and *language proficiency* also have effect on conducting PBL in a language class. For example, participants in Hekmati & Hekmati's and Hong's researches were non-English major students, as a result, they don't take the English course seriously. Slabodar (2023) concluded that lectures' perception of their roles in the project conducting affected learners' performance. Moreover, a proper learning environment is essential in PBL conducting. Grant (2017) indicated that students need enough language quality to form a perfect academic environment.

Class management is another challenge concluded in the reported articles. Rodríguez-Peñarroja (2022) and Hong (2019) focused on assignment in groupworks of project conducting and found that improper assignment in group work led to problems like free rider who is dependent on others' efforts, and then made students' motivation unchanged or even decrease. Hojeij and his colleagues (2021) found class size and course prerequisites could also be a challenge for teachers in implementing PBL method.

While not all articles concentrate on challenges instructors confronted, several articles shed light on difficulties learners met. Al-Bahadli et al. (2023) indicated that students thought *learning process* of PBL is complex; in Slabodar's research, students admitted it's difficult to *collaborate* among group members; Amorati and Hajek (2021) also stated that students feel hard to realize creative of project.

In conclusion, the studies that have been reviewed highlight the importance of preparation and well-design before conducting PBL in a language class. Along with well-prepared, managing the teaching and time well is also very important. What's more, a suitable assessment system with PBL is imperative and attracted more and more attention.

Limitations

In this research, 20 studies about using PBL in language learning context to promote learning motivation were identified. The main limitation of this scoping review was the inclusion of only published in English and Chinese languages and in peer-reviewed journals. Due to research time and participants number, peer-reviewed conferences report and grey articles were excluded, though some researchers always present their initial research result in conferences before journals. Another limitation is we only used 5 database: ERIC, SAGE, Web of Science, Scopus, and ProQuest Journal. This was undertaken to retrieve targeted academic articles and rigorously assess their alignment with the research parameters. To strengthen the scholarly foundation, supplementary articles from databases including Google Scholar and PubMed could be systematically evaluated in the future, ensuring robust methodological breadth and depth throughout the investigation. Third, the reviewed studies were limited in undergraduate level, which will exclude more studies in other language learning levels like primary, middle school or vocational level. Articles from other levels should be incorporated, as they may provide fresh insights into the analyzed data.

Conclusions

Overall, we examined 20 studies related to using PBL in language learning to promote undergraduate students' learning motivation over the past 10 years. In this scoping review, 17 out of 20 were written about using PBL in English learning and teaching. ESP is the main research context among all the reported articles. Research orientations vary with new trend like study technology use in PBL conducting. Research topics and purpose are diverse, like combining with business subject and literature.

In this review research, based on the key words we extracted from the reported articles, we found that the key features of PBL that influence learning motivation by using PBL in a language learning context are *driving questions* and *collaboration*. When students were doing authentic, challenging project and their inquiry were supported, their learning motivation would be promoted, cooperation and communication among group members were also imperative during project conducting. Students' autonomy and technology use play a role in affecting learning motivation in language learning context with PBL method. Students' scientific practice and scientific method in project conducting have no relationship with promoting learning motivation.

The biggest challenge in conducting PBL in language learning context to promote learning motivation is the need to well-prepare/design, and manage time. Meanwhile, the deficiency of proper assessment system for PBL is another increasingly prominent challenge.

This review provides insights that can help instructors, researchers to understand the role of different features of PBL in language learning context for promoting students' learning motivation. Several challenges were concluded and analysed, having awareness of these challenges is crucial for instructors and researchers as they can improve their teaching efficiently with PBL method in a language teaching context. Further studies can focus on certain aspects, such as how to use PBL with proper assessment system in language classroom. The project assignment must be meticulously crafted, rooted in learners' familiarity with subject matter, while strategically integrating technology to ignite their interest and motivation to learn. In this way, instructors and researchers can utilize key features of PBL and overcome challenges emerging during project conducting. Learners can immerse themselves in a captivating, highly efficient learning ecosystem.

The findings emphasized the role of driving questions and how the project should be designed in conducting PBL in language class to promote students' learning motivation. These pivotal findings offer a compelling blueprint for reimagining language curriculum design in future educational endeavors. This review further underscores and reaffirms the indispensable role of innovative technology and robust assessment frameworks in enhancing learning efficiency and facilitating seamless language acquisition for learners worldwide.

In pursuing further research, all proposed avenues should be holistically considered to artfully balance practical applicability with nuanced resource allocation, while thoughtfully bridging insights uncovered in this scoping review.

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References

- Al-Bahadli, K. H., Al-Obaydi, L. H., & Pikhart, M. (2023). The Impact of the Online Project-Based Learning on Students' Communication, Engagement, Motivation, and Academic Achievement. *Psycholinguistics*, 33(2), 217-237. <https://doi.org/10.31470/2309-1797-2023-33-2-217-237>
- Aldobekhi, S. A., & Abahussain, M. O. (2024). Enhancing English Language Students Productive Skills through Project-based Learning: A Mixed Method Research. *International Journal of Learning, Teaching and Educational Research*, 23(1), 231-257. <https://doi.org/10.26803/ijlter.23.1.12>
- Amorati, R., & Hajek, J. (2021). Fostering motivation and creativity through self-publishing as project-based learning in the Italian L2 classroom. *Foreign Language Annals*, 54(4), 1003-1026. <https://doi.org/10.1111/flan.12568>
- Asfihana, R., Salija, K., Iskandar, I., & Garim, I. (2022). Students' English learning experiences on virtual project-based learning instruction. *International Journal of Language Education*, 6(2), 196-209. <https://doi.org/10.26858/ijole.v6i2.20506>
- Azamatova, A., Bekeyeva, N., Zhaxylikova, K., Sarbassova, A., & Ilyassova, N. (2023). The Effect of Using Artificial Intelligence and Digital Learning Tools Based on Project-Based Learning Approach in Foreign Language Teaching on Students' Success and Motivation. *International Journal of Education in Mathematics, Science and Technology*, 11(6), 1458-1475. <https://doi.org/10.46328/ijemst.3712>

- Carver, D. (1983). Some propositions about ESP. *The ESP Journal*, 2(2), 131-137. [https://doi.org/10.1016/0272-2380\(93\)90003-P](https://doi.org/10.1016/0272-2380(93)90003-P)
- Chen, J., Kolmos, A., & Du, X. (2021). Forms of implementation and challenges of PBL in engineering education: a review of literature. *European Journal of Engineering Education*, 46(1), 90-115. <https://doi.org/10.1080/03043797.2020.1718615>
- Deng, L. (2018). The Project-Based Flipped Learning Model in Business English Translation Course: Learning, Teaching and Assessment. *English Language Teaching*, 11(9), 118-128. <https://doi.org/10.5539/elt.v11n9p118>
- Deng, L. (2020). The Process-oriented Assessment Model of Business English Translation Course in a Flipped Learning Context. *Higher Education Studies*, 10(4), 1-11. <https://doi.org/10.5539/hes.v10n4p1>
- Dörnyei, Z. (1994). Motivation and Motivating in the Foreign Language Classroom. *The Modern Language Journal*, 78(3), 273-284. <https://doi.org/10.1111/j.1540-4781.1994.tb02042.x>
- Dörnyei, Z., & Otto, I. (1998). Motivation in Action: A Process Model of L2 Motivation. *Working Papers in Applied Linguistics*, 4, 43-69. <https://nottingham-repository.worktribe.com/output/1024190>
- Gardner, H. (1995). Reflections on Multiple Intelligences: Myths and Messages. *Phi Delta Kappan*, 77(3), 200-208. <https://www.proquest.com/openview/4bbb940abb34c54f7705833b2c879283>
- Gardner, R. C., Lalonde, R. N., & Moorcroft, R. (1985). The Role of Attitudes and Motivation in Second Language Learning: Correlational and Experimental Considerations. *Language Learning*, 35(2), 207-227. <https://doi.org/10.1111/j.1467-1770.1985.tb01025.x>
- Grant, S. (2017). Implementing project-based language teaching in an Asian context: a university EAP writing course case study from Macau. *Asian-Pacific Journal of Second and Foreign Language Education*, 2(1), 4. <https://doi.org/10.1186/s40862-017-0027-x>
- Guilloteaux, M. J., & Dörnyei, Z. (2008). Motivating Language Learners: A Classroom-Oriented Investigation of the Effects of Motivational Strategies on Student Motivation. *TESOL Quarterly*, 42(1), 55-77. <https://doi.org/10.1002/j.1545-7249.2008.tb00207.x>
- Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research*, 102, 101586. <https://doi.org/10.1016/j.ijer.2020.101586>
- Hannula, M. S. (2006). Motivation in Mathematics: Goals Reflected in Emotions. *Educational Studies in Mathematics*, 63(2), 165-178. <https://doi.org/10.1007/s10649-005-9019-8>
- Hekmati, N. (2022). Project-Based Learning in Online Medical Classes: The Walkway to Learn the Medical English Language Efficiently. *Acta Medica Iranica*, 60(8), 521-525. <https://doi.org/10.18502/acta.v60i8.10838>
- Hojeij, Z., Tamim, R., Kaviani, A., & Papagianni, C. (2021). E-books and digital storytelling for Emirati school children: Project-based learning for pre-service teachers. *Issues in Educational Research*, 31(4), 1067-1087. <https://www.iier.org.au/iier31/hojeij3-abs.html>
- Hong, C. Y. (2019). Learning culinary English through food projects-What do students think. *The Asian ESP Journal*, 15(3), 99-124. <https://www.researchgate.net/publication/337973405>
- Kato, F., Spring, R., & Mori, C. (2020). Incorporating project-based language learning into distance learning: Creating a homepage during computer-mediated learning sessions. *Language Teaching Research*, 27(3), 621-641. <https://doi.org/10.1177/1362168820954454>
- Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools*, 19(3), 267-277. <https://doi.org/10.1177/1365480216659733>
- Krajcik, J. S., Blumenfeld, P. C., Marx, R. W., Bass, K. M., Fredricks, J., & Soloway, E. (1998). Inquiry in Project-Based Science Classrooms: Initial Attempts by Middle School Students. *Journal of the Learning Sciences*, 7(3-4), 313-350. <https://doi.org/10.1080/10508406.1998.9672057>
- Krajcik, J. S., & Shin, N. (2014). Project-Based Learning. In R. K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (pp. 275-297). Cambridge University Press. <https://doi.org/10.1017/CBO9781139519526.018>
- Markula, A., & Aksela, M. (2022). The key characteristics of project-based learning: how teachers implement projects in K-12 science education. *Disciplinary and Interdisciplinary Science Education Research*, 4(1), 2. <https://doi.org/10.1186/s43031-021-00042-x>

- Marx, R. W., Blumenfeld, P. C., Krajcik, J. S., & Soloway, E. (1997). Enacting Project-Based Science. *The Elementary School Journal*, 97(4), 341-358. <https://doi.org/10.1086/461870>
- Muhammad, M. (2020). Promoting students' learning motivation through project-based learning using Muvizu in 21st-century education. *Cypriot Journal of Educational Sciences*, 15(5), 899-908. <https://doi.org/10.18844/cjes.v15i5.5120>
- Nguyen, H.-T. T. (2021). Project-Based Assessment in Teaching Intercultural Communication Competence for Foreign Language Students in Higher Education: A Case Study. *European Journal of Educational Research*, 10(2), 933-944. <https://doi.org/10.12973/eu-jer.10.2.933>
- Park, H., & Hiver, P. (2017). Profiling and tracing motivational change in project-based L2 learning. *System*, 67, 50-64. <https://doi.org/10.1016/j.system.2017.04.013>
- Peters, M. D. J., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *JBIM Evidence Implementation*, 13(3), 141-146. <https://doi.org/10.1097/XEB.0000000000000050>
- Petersen, C., & Nassaji, H. (2016). Project-Based Learning through the Eyes of Teachers and Students in Adult ESL Classrooms. *The Canadian Modern Language Review*, 72(1), 13-39. <https://doi.org/10.3138/cmlr.2096>
- Rodríguez-Peñarroja, M. (2022). Integrating Project-Based Learning, Task-Based Language Teaching Approach and YouTube in the ESP Class: A Study on Students' Motivation. *Teaching English with Technology*, 22(1), 62-81. <https://hdl.handle.net/10234/197511>
- Shin, M.-H. (2018). Effects of Project-Based Learning on Students' Motivation and Self-Efficacy. *English Teaching*, 73(1), 95-114. <https://doi.org/10.15858/engtea.73.1.201803.95>
- Simpson, J. (2011). *Integrating project-based learning in an English language tourism classroom in a Thai university* [Doctoral dissertation, Australian Catholic University]. <https://doi.org/10.4226/66/5a961e4ec686b>
- Slabodar, I. (2023). What do the Lecturers Think? EPIC Lecturers' Perceptions of Implementing PBL to Teach the Speaking Skills. *TESL-EJ*, 27(2), 20. <https://doi.org/10.55593/ej.26106a4>
- Tanaka, M. (2022). Motivation, self-construal, and gender in project-based learning. *Innovation in Language Learning and Teaching*, 17(2), 306-320. <https://doi.org/10.1080/17501229.2022.2043870>
- Thomas, J. W. (2000). *A Review of Research on Project-Based Learning*. San Rafael, CA: The Autodesk Foundation. https://www.bie.org/research/study/review_of_project_based_learning_2000
- Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., et al. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine*, 169(7), 467-473. <https://doi.org/10.7326/M18-0850>
- Van Loi, N., & Hang, C. T. T. (2021). Integrating Project Work into English Proficiency Courses for Pre-Service Teachers' Training. *TESL-EJ*, 25(3), n3. <https://tesl-ej.org/pdf/ej99/a12.pdf>
- Wang, B.-T. (2016). Applying PBL and ZUVIO to enhance English learning motivation. *International Journal of Cyber Society and Education*, 9(1), 1-16. <https://doi.org/10.7903/ijcse.1433>