

# Engaging Chinese EFL Students' Reading Through PBL in a Blended Learning Environment

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**Abstract**—Project-based learning has drawn the attention of language educators in recent years. With technology increasingly becoming an integral part of language education, how technology-enhanced PBL facilitates students' reading in the Chinese EFL context still needs further exploration. Through a year-long reading project, this study explored the affordances that PBL could provide for Chinese EFL students in their reading engagement. Data include a survey, interviews, and documents, such as videotaped presentations. The problems and challenges in this project's implementation are also discussed.

**Index Terms**—PBL, Chinese, EFL students, reading, blended learning environment

## I. INTRODUCTION

### A. Project-Based Learning

As an experiential learning method, project-based learning (PBL) was introduced into the field of education by Kilpatrick (1918) more than 100 years ago. This approach may facilitate learning by creating a student-centered environment with greater engagement and motivation as noted by studies conducted in a variety of settings with different populations. Subsequently, PBL was adopted by educators in the language field to engage students in more active learning of both the language and content and skills within more authentic contexts (Beckett & Slater, 2020).

Researchers began exploring project-based language learning in the 1970s (Eslava & Lawson, 1979) and continued throughout the 1980s and 1990s from practice to theoretical research, such as Beckett (1999), Eyring (1989), and Stoller (1997). The influence of PBL on the theory and practice of second language and foreign language teaching also gradually increased. In the 21st century, PBL research in language education has been furthered by several important studies (Fried-Booth, 2002; Beckett & Miller, 2006; Beckett & Slater, 2005, 2020). These studies greatly promoted project-based learning and teaching. Application of PBL in the foreign language field in China began later (Wang, 2020; Yang & Diao, 2024) with Gu and Zhu (2002) being the first PBL research published in China. Since then, PBL research has been developing, including investigations of the impact of PBL on language learning (Deng & Wang, 2009; Wang, 2010, 2013); the role of technology in PBL (Gu, 2007; Zhu & Zhang, 2011), and the use of PBL in language skill development, such as writing (Yang & Han, 2012). Zhang (2015) provided a localized PBL foreign language teaching model, based on long-term PBL practice in his studies. Wang and Wang (2022) explored the possibility of PBL virtual teaching and research centers for foreign language education. These studies confirm the positive role of PBL in foreign language education. Still, more studies are needed to explore further PBL use in more specific areas, such as reading, which is an important part of language education.

### B. The Blended Learning Environment

Today, with technological advancement, students can conduct a large part of their reading beyond traditional classroom instruction. Researchers also explored the effectiveness of blended learning in high school (English, 2018) or college English contexts (Qin et al., 2020). When students engage outside the classroom, they have access to online resources, such as e-books, articles, and other online materials, which could provide flexibility and efficiency for students, who can read at their own pace without worrying about pressure from teachers or peers. These might enhance students' learning experiences by offering a more engaging, immersive experience, which should be encouraged in the digital age. This blended learning environment could dominate future teaching, even with the exit of the COVID-19 epidemic, which greatly promoted online learning. Thus, it is significant to examine the learning that occurred in a blended learning environment. Therefore, this study intends to explore the role of PBL in improving students' reading and other important skills to explore a new effective teaching model for foreign language teaching in a blended learning environment.

## II. THEORETICAL FRAMEWORK

The theory of affordances, as a concept in ecological psychology, was developed by the American psychologist, James Jerome Gibson. Central to Gibson's view of the world is the idea of affordance, or the opportunities for action

provided by the real world. According to Gibson, “the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. [An affordance] refers to both the environment and the animal [and] implies the complementarity of the animal and the environment” (Gibson, 1979, p. 127). This theory describes the relationships between individuals and environments. Individual behaviors cannot be studied in isolation from their environment. Our perception of an object or environment is influenced by the potential actions or uses it affords. In other words, affordances are the possibilities or opportunities for action that an object or environment provides. The theory of affordances has been applied in a variety of fields, including cognitive psychology, human-computer interaction, design, and language education.

For the application of affordances theory in language education, van Lier (2004) made significant contributions, particularly in the field of second language acquisition. Van Lier’s understanding of affordances expands on the ecological psychology perspective, focusing on how learners perceive and interact with the language environment to facilitate language learning. From van Lier’s point of view, language learning should be approached from a dynamic perspective since both the learners themselves and their environment are under constant change. Another point from van Lier is not only the physical environment should be taken into consideration, but also the social and cultural environments are of vital importance as well. With this, he argued language learning would need to take into consideration the individual learners, the classroom environment, and the broader social and cultural milieu. Van Lier (2004) believed for learning to happen, learners should develop their awareness of the existence of language, then integrate external linguistic materials with the acquired knowledge or schema and build connections. From an ecological perspective, when learners are aware of the language materials, these materials could provide affordances to provide opportunities for the next round of learning. During this process, if the environment could provide more affordances then, it will enable learners to develop a better sense of autonomy and, therefore, improve his or her language learning process.

Many studies with affordances theories provided important insights about learning, in general. Some studies focused on the physical environment (Li & Wu, 2016, 2017). Jiang (2017) discussed how digital multimodal composing afforded EFL students’ learning. He divided the affordances into three types: technological affordances, educational affordances, and social affordances, which produced multiple impacts on EFL students’ learning. Qin, He, and Ouyang (2020) investigated the ecological affordance actualization through a large-scale survey combined with interviews. Cai (2023) studied how low-proficiency students were affected by environmental affordance through structural modeling in online learning contexts. These studies showed affordances theory could provide a vigorous framework and, therefore, is chosen as the theoretical framework of this study. This study intends to explore how PBL can afford Chinese EFL students’ reading in the blended learning environment. More specifically, this study addresses the following two questions:

1. What affordances does PBL provide for the reading engagement of Chinese EFL students in a blended learning environment?
2. What are the problems and challenges in reading engagement through PBL implementation?

### III. RESEARCH DESIGN

#### A. *Research Context and Participants*

Under the broader context of enhancing international communication and the promotion of Chinese culture in the international community, it is becoming necessary for Chinese students to know more about China so they can better represent China and introduce China to other countries in the future. *Understanding Contemporary China* is a textbook about contemporary China, including topics in politics, environment, economy, and culture, to enable students to better understand China’s contemporary development. Written in English, this book provides language majors with a valuable resource about China. Therefore, as part of the curriculum, it is integrated into the regular reading course through a PBL project in the university where this study was conducted.

From September 2022 to June 2023, this project was conducted within two classes. A total of 47 students took part in the project. Participants were given instructions about the reading materials as part of their project learning. They were required to read the designated units mainly after class and present what they had learned about the book at the end of the semester. The students conducted their presentations individually during the first semester and in groups during the second semester. For the first semester, each student selected one unit from the three units recommended by the instructors. They read the materials after class and then presented what they had learned from the related units. The instructors offered directions and text analysis materials on the online course folders, which all students had access to at the beginning of the semester. Thus, students would have sufficient time to prepare their presentations—to demonstrate their understanding of the reading materials. Instructors also connected some units with the reading course when relevant. After the students prepared their presentations, they uploaded their products to the online platform of the related reading course.

For this study, data, such as surveys, interviews, and documents, mainly come from one of the classes with 28 students. These students are in the second year of their college study in a city in Northern China. Among these students, seven are males and twenty-one are females. The author is the instructor of this class. Students were informed that data

would be collected for language teaching and research purposes. The instructor also obtained permission for the interviewees and their usage in this study.

### B. Data Collection and Analysis

The data for this study include a survey, interviews, and documents, such as videotaped presentations, PowerPoint slides, and students' reflections. The survey inquired about the students' attitudes toward the reading materials and the PBL approach used in their reading and course engagement. Twenty-four of 28 students submitted the survey which has 19 items and one open question. The 19 items of the survey included several components: text understanding (3 items); language skills, including reading and oral expressions (3 items); technical skills (2 items); students' collaborations (2 items); students' emotions, such as students' satisfaction (4 items); and other skills, such as thinking skills, learning initiatives (4 items). The final item asked whether students prefer individual presentations or group presentations. The open question asked about some difficulties or challenges they have with the project. Besides this survey, five students were selected randomly to discuss the affordances and problems in the PBL process. Each interview lasted between 20-40 minutes, depending on different participants. All research was conducted in the students' native language—Chinese. Student documents: videos, PPTs, and reflections were also collected.

The interviews were transcribed using automatic transcribing software, *Xunfei Tingjian*, translated into English, and then analyzed through a qualitative inductive process (Miles & Huberman, 1994). First, the data were read many times by the author for keywords/phrases related to the affordances of PBL to code into categories. Then, the smaller categories were incorporated into more general categories. Finally, the survey data, reflections, as well as students' documents, such as PowerPoints or videos, were also used to triangulate the data.

## IV. FINDINGS

According to the theory of affordances, the interactions between individuals and their environment are of vital importance. Here the environment not only refers to the physical environment but also the social and cultural environments, too. In this environmental framework, many factors could come into play to provide affordances for the students.

### A. Resources Affordances Through PBL

#### (a). The Required Reading Texts

In the survey, students were asked to share their experiences about using the PBL approach in their reading on a scale of 1-100. In terms of text understanding, students indicated the PBL approach enhanced their understanding of contemporary China by understanding and discussing topics related to contemporary China (see Figure 1).

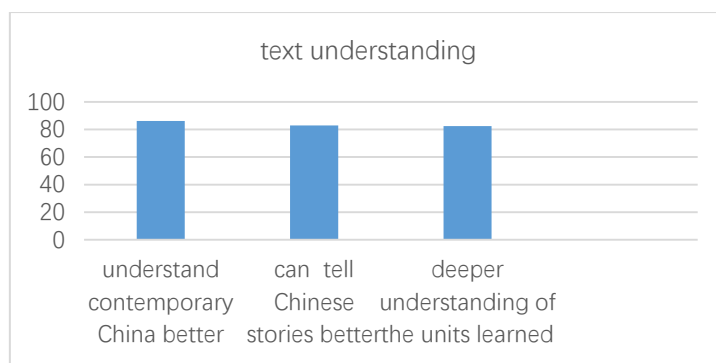


Figure 1. Text Understanding

Besides the generally positive perceptions through the survey, the participants also reported by reading the materials, they learned new terms or had a better understanding of some concepts they had learned:

In my reading, I sometimes encounter some new terms, including “fang guan fu,” the “judicial accountability system,” and... I will look them up specifically to find out the meaning of these terms. So, I think it began with the material in the textbook and then became a trigger for me to know more about this knowledge. It is also helpful to know some knowledge that I do not have much contact with or learn in daily life.

It really helps a lot in understanding contemporary China. I think on the one hand I can learn some words, such as the English expressions of some political concepts that we've learned from political science textbooks in the past. And, on the other hand, these concepts can indeed enable us to pay attention to some new political developments of our country, and then cultivate our political literacy. (Interviewee 1)

This interviewee thought the topics discussed in the text provided her with a chance to know more about some of the terms or concepts that she may have not noticed in her daily life. She not only read from the text, but it also became the starting point for her to explore further. In the videotaped presentations of Interviewee 1, she discussed the “fang guan fu” (streamline administration and delegate power, improve regulation, and upgrade services) and judicial

accountability system, among others when discussing the law-based governance in China. This showed she did learn these terms and was able to present and share them with her audience.

(b). *Resources Beyond Texts*

Participants utilized the available resources and integrated them into their presentations. In their PowerPoints, the participants demonstrated their understanding of the reading materials. Besides summarizing the main idea of the reading materials or quoting the reading materials as relevant to their presentations, they chose one of the themes to explore further. The students thought the PBL approach provided them with the freedom of autonomous learning along with their reading. Additionally, they were given the chance to explore more specific topics, while working under the same theme. For instance, during the first semester, 11 students chose to discuss the topic of “beautiful China,” which advocates the protection of the environment. While the theme was the same, students selected different focuses and discussed their ideas about environmental protection (see Table 1).

TABLE 1  
DIVERSE TOPICS RELATED TO CHINA’S ENVIRONMENTAL PROTECTION

Ecological protection in the Yangtze River basin, China	The change of Kuboqi Desert in northern China
Eco-environmental progress in the loess plateau region of China	Urbanization and environment
Wetlands (mangroves) management in China	Protecting the eco-environment, China in action
Environment Protection Beijing vs New Delhi	Carbon neutrality

As young people, the participants showed their attention to what happened outside the required reading materials. Most of the students connected relevant information to their reading. For instance, in their presentations, they discussed China’s One Belt and One Road Initiative and connected ancient China’s history with recent developments. When talking about the topic of anti-corruption, they also used pictures of recent popular movies with similar topics. Students also quoted the 20th Congress of CPC and the latest international conferences on environmental protection. Also, they used multiple media in their presentations, rather than the traditional reading report by integrating pictures, videos, charts, diagrams, etc. to make their presentations more appealing to the listeners. All participants used pictures and over half used statistics and numbers to support their viewpoints in their PowerPoint slides. Some used short video clips to present the different economic developments in the past and present.

Besides the required texts, the participants also borrowed from other courses and transferred this information into their presentations or learned from this course was carried to other courses.

When we discuss telling China’s story through the reading of the textbook (*Understanding Contemporary China*), it naturally reminds me of the group practice in our Marxism philosophy course. In that course, we had some group work activities where we presented what we learned through situational dramas and other types of videos. Therefore, to demonstrate creativity and better spread Chinese stories to the world, we decided to present them through videos. (Interviewee 5)

We have one theme in each class in our oral interpretation course. Some of the themes in this textbook overlap with those in our interpretation class. We could learn some expressions from this course and apply them to our interpretation course, and vice versa. When we have oral interpretation practice, we might find our vocabulary insufficient, and we could find corresponding expressions in this book. This encourages us to apply what we learned here in the oral interpretation course. (Interviewee 4)

B. *Technological Affordances Through PBL*

(a). *Information Search Through the Internet*

This study found that technological affordances have become an integral part of the PBL process. Web search was heavily used to collect relevant information to supplement their presentations on related topics. When asked about the source of the supplementary materials, all interviewees mentioned that after they decided on the topic of their presentation, they would start to search for relevant information online besides reading the assigned text. Information search now becomes handy because of the accessibility of the internet, not only on computers but also on mobile devices, particularly with the variety of apps available.

(b). *Technological Tools Use in the Presentations*

The participants are considered good users of a variety of technology tools. Their use of technical tools ranged from presentation preparation to presentation delivery. When preparing their presentations, besides face-to-face meetings, the participants frequently used the Tencent Meeting Software app to organize meetings. Besides, WeChat online discussion groups were also regular communication tools. These free apps provided great conveniences and students were quick to learn to use them. Students also freely used translation software in their presentation preparation. However, they were aware of possible problems with it and would take measures to improve or revise what they produced through machine translation.

Q: If you want to include Chinese materials in your PPT, do you use machine translation or do you translate it yourself?

A: Some materials may have a particularly long section, for example. To save time, I may use machine translation first, then read the version by referring to the original to see if there are any problems, and then revise and improve it. After this, it would be used as part of the presentation materials. Some other parts, such as my own feelings or perceptions, or my own opinions, I think I'll write myself. ...We are also doing this in some other translation courses...It is also a way to improve our translation skills and language skills..." (Interviewee 3)

In delivering their presentations, the participants are proficient in using screen-recording software to record their presentations. Some mentioned they would write scripts for their presentations and choose one they considered more successful from several recordings. When asked about the use of scripts, as Interviewee 3 mentioned, they would rely on the script, but they would also speak as spontaneously as necessary, based on the materials they are discussing. These preparations would provide materials for their language learning. Some also edited their presentations by using more complex editing software to connect the different parts of their presentations.

### C. *Interaction Affordances With Peers and Instructors Through PBL*

The PBL approach created a possibility for the participants to collaborate in finishing the presentation tasks. This is particularly the case with the group presentations. As shared by the interviewees.

We would have a group discussion before each of our presentations. Usually, we would first read the text together to get the main idea of the text. Also, we would read the lead-in section of that unit and then read the questions at the end of the reading as well as the supplementary materials of the unit. We would then try to get some points we felt were interesting or some points that would inspire us. After this, we would usually do brainstorming. Next, we would decide on the themes to present and a rough framework. Finally, we would search for more information and relevant materials online. (Interviewee 1)

For the group presentations, the interviewees mentioned they would read the materials and discuss what to present. When asked about how they prepared for their reading project, this interviewee mentioned many elements. For instance, group discussions were gathered by the students themselves. The instructor mainly worked as a facilitator and consultant. It was interesting the student also paid attention to the affordances of the design of the texts, such as the lead-in section and the questions at the end of the reading as well as supplementary materials. They would search for these available resources to help them better understand their reading materials and then they would search for points they would like to further pursue.

Besides the close collaboration in their preparation for their presentations, the participants were also given the chance to watch other students' presentations shared online to learn from each other. The online teaching platform provided a space for these students' products to be preserved and shared by others. The availability of resources makes it possible to become new affordances that technology could provide to the students, who benefit by accessing these without the limit of the classroom border. Interviewee 5 mentioned she would watch other students' presentations and learn how they illustrated their points, which she considered quite inspiring. For this part, the interviewees provided varying opinions. Interviewee 2 mentioned that some videos with similar topics might have some overlap and, therefore, believed not very interesting (this is particularly the case when students conducted individual presentations since there were three themes. This means there may be seven or eight videos on the same theme (although different specific topics).

Compared with the frequent interactions between the students, the interactions between the instructor and students varied. The instructor provided guidance and worked as a counselor in the implementation of the project. WeChat groups were formed and students would share their rough ideas first and the instructor would provide feedback. Then, the students would prepare their presentations, usually with PowerPoint slides. The instructor would offer feedback to the drafts and then the students would revise accordingly. Sometimes, these exchanges lasted several rounds. There were differences between different groups. Some groups spent more time interacting with the instructor in terms of presentation structure or details about their presentations; some did not interact much with the instructor.

### D. *Language and Other Affordances Through PBL*

As to language-related skills, students reported how they perceived the PBL approach to help them improve their language skills, more specifically vocabulary, reading comprehension, and oral English delivery of their reading (see Figure 2).

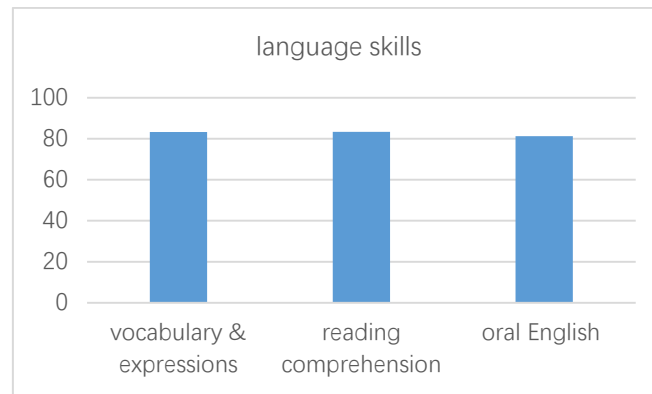


Figure 2. Language Skills Afforded by PBL

In their interviews, participants also mentioned in their reading process, they also learned the English expressions of some new terms or some terms they might have learned in Chinese.

Recently, I read Unit 9, which introduced the topic of the human community of shared future. In fact, before reading, we already learned similar topics in the politics course in high school. But at this time, we just had a rough idea about what it was. Now, when reading Unit 9, I learned not only the meaning of this concept, but also what actions we should take to build it from many components.

Another is there are a lot of terms, I need to learn. I'm not very familiar with English expressions of some terms, for instance, multilateralism... (Interviewee 2)

Through reading the text, he found himself with a better understanding of the concepts and gained further knowledge related to the term. He presented his understanding of the term, multilateralism, as part of his presentation.

Besides this, the participants also reported that affordances provided them with chances to hone their other skills, such as analyzing from different perspectives, taking initiative in their learning, integrating language learning with language use, as well as information searching skills. In this process, some interesting contradictions are also found. That is, the participants mentioned one of the difficulties they had was finding the proper supplementary materials they would like to use. Additionally, they reported they benefited greatly through PBL and the information search. It seems the challenging tasks here did not restrain the students, but provided a chance for them to better improve their searching abilities, an important skill in the information age. Other skills students reported include analyzing things from different perspectives, a skill which could also prove beneficial in their future lives and careers (see Figure 3).

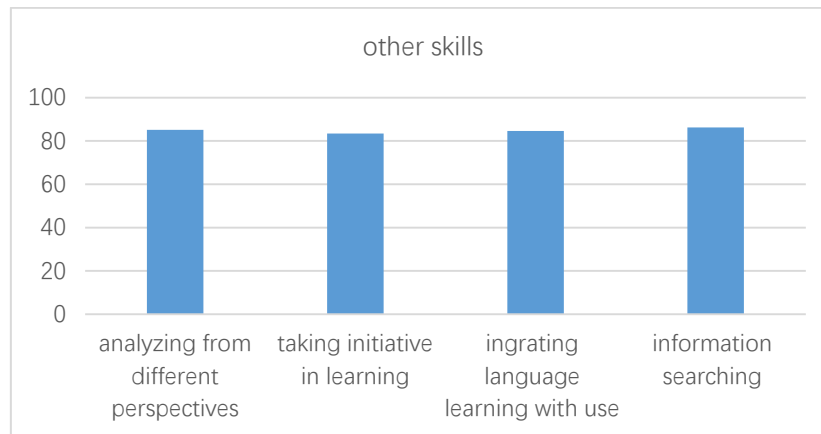


Figure 3. Other Skills Afforded by PBL

#### E. Problems and Challenges in PBL Implementation

The participants were also asked about some difficulties they encountered and they could choose more than one item as listed in Table 2:

TABLE 2  
PROBLEMS AND CHALLENGES

Difficulties & Challenges	Student	Percentage
The reading materials are difficult	5	20.83%
The reading materials are not very interesting	7	29.17%
Difficulties in finding supporting/supplementary information	16	66.67%
Difficulties finding the focus for the presentation	13	54.17%
Difficulties in oral delivery	7	29.17%
Heavy course load and not enough time to prepare	10	41.67%
No difficulties	2	8.33%
Other	1	4.17%

Some of the problems are related to course materials, such as being difficult or not so interesting. This is also illustrated by the interviews. Interviewee 4 mentioned some terms she found could be barriers to her reading. Besides terms, Interviewee 2 also mentioned difficulties in understanding the contents of the reading materials and would like stronger teacher support.

I prefer classroom presentations... I think a good aspect of classroom presentation is that while students are presenting, there can also be some guidance from the teacher. Additionally, because I feel students' understanding of some concepts may not be entirely correct, it may require the teacher's timely intervention. Besides, when the concepts are vague or abstract, the teacher can help by providing more details and offering guidance. Some parts might be difficult for students to handle independently without a teacher's guidance and support.

For the presentation preparation, over two-thirds mentioned they encountered difficulties in finding the information they needed. Some students also mentioned their oral proficiency and the heavy course load caused difficulties in project learning.

## V. DISCUSSIONS AND CONCLUSION

PBL provides a positive environment for participating language learners. On the one hand, through the design of a reading project, the environment provides participants with abundant learning resources and interactive opportunities. Students can perceive these positive benefits and transform them into beneficial learning experiences. The theory of affordances forms an ecological circulation of the learning process. In this ecological system, participants were not limited by their textbooks and traditional classrooms. They fully utilized various affordances in the surrounding environment and used them to improve their language learning experiences. The PBL provided a matching approach for this positive ecological circulation.

PBL makes successful reading engagement possible through the powerful assistance of technology. In this study, the participants took advantage of multiple technological tools available to them to help them understand their reading texts, organize group discussions, and search for information in their preparation. The delivery of their presentations was also enriched, due to the use of technology. Online platforms also make it possible for them to upload and share their presentations with others without being restricted by time and space.

In the PBL approach, the support network was working to promote learning; in the project implementation process, the participants were encouraged to communicate with the instructor and their peers. Through constant interactions, they received valuable feedback from the instructors as well as their peers. They learned from their peers and helped each other improve their language skills, as well as other skills, such as collaboration and team spirit. This design provides students with more interactive opportunities and promotes their language communication and cooperation abilities.

The PBL approach promotes individual learner's active participation. Through the PBL, the participants were offered freedom and time to design their activities and perspectives about how to present their readings with their ideas. Given this opportunity to fully explore an interactive language learning environment, their agency was fully encouraged. Being the master of their own tasks, the students freely took advantage of the resources available. For instance, students freely borrowed what they found as good ways in some other courses and applied them to this course. Or they learned the expressions in this course and applied them to other courses, too. When this kind of activity frequently happens, it is shown students can use their agency and pick from environmental elements that would benefit their language and employ them in their presentations. All participants showed very positive interactions between the students and their environment, and students could take advantage of the affordances in their immediate, more distant environments to adapt and use them in their reading and learning.

Reading in the digital age is undergoing dramatic changes. Traditional ways of detailed study in class might be supplemented by other ways, such as the PBL approach, which adapts 21st-century skills that students are supposed to possess to better meet daily challenges. By using the theory of affordances as its framework, this study showed students were engaged in their reading through the PBL approach and were able to utilize the availability of their environment and improve their reading, as well as other skills. The students used their textbooks to extend their research beyond—they can connect with other courses, utilize resources available to them, and interact with instructors and peers. Technology affordances play a significant role in the PBL implementation process. In the PBL process, participants

showed their awareness of the language in their readings and were able to learn concepts and new expressions through their presentations, fully utilized their autonomy, and made learning a more authentic, fulfilling experience. This study also found some issues in the process, which should be further addressed in future teaching and studies. One is the instructor's role as a key player in the interactions of the participants with their environment and other peers. The other is the assessment of the PBL in the reading. These issues could be explored in future studies.

#### ACKNOWLEDGMENTS

This paper is supported by the Foreign Language Education Grant of China (#ZGWYJYJJ11A004) and the Central University of Finance and Economics Teaching & Research Grant (2022ZXJG33, 2022XYJG71).

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