THE EFFECTS OF PROJECT-BASED LEARNING ON NON-ENGLISH-MAJOR STUDENTS' CRUCIAL SOFT SKILLS DEVELOPMENT

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ABSTRACT

The rise of project-based learning has presented numerous opportunities for instructors and students in terms of facilitating self-development. This study seeks to explore the potential of the Project-based learning method in enhancing three important soft skills, including critical thinking, social-emotional skill, and self-regulation, which are believed to be beneficial for students' sustainable development, among non-English-major students in a university in Ho Chi Minh city, Vietnam. This research aims to assess the attitudes of students toward the classroom-based implementation of a six-week Project-based learning in an English as a foreign language classroom. Quantitative data from surveys has been gathered over the project implementation triangulated with semi-structured interviews to gauge students' perspectives on their skill enhancement after the project. The results indicate a unanimous agreement among students regarding their development of the three crucial skills. Upon these findings, the study presents pedagogical implications for Project-based learning teachers and proposes further paths for research in this area.

ẢNH HƯỞNG CỦA PHƯƠNG PHÁP DẠY HỌC DỰ ÁN TRONG VIỆC PHÁT TRIỂN KỸ NĂNG MỀM THIẾT YẾU CHO SINH VIÊN KHÔNG CHUYÊN NGỮ

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TỪ KHÓA

Dạy học dự án
Tư duy phản biện
Sự phát triển các kỹ năng mềm thiết yếu
Kỹ năng tình cảm xã hội
Kỹ năng tự điều chỉnh

TÓM TẮT

Sự phát triển của phương pháp học tập dự án đã mang lại nhiều cơ hội cho giáo viên và sinh viên trong việc thúc đẩy khả năng tự phát triển. Nghiên cứu này được thực hiện trên một nhóm sinh viên đại học tại một trường đại học ở thành phố Hồ Chí Minh, Việt Nam nhằm khám phá tiềm năng của phương pháp học tập dự án trong việc nâng cao ba kỹ năng mềm quan trọng được cho là có lợi cho sự phát triển bền vững của sinh viên không chuyên ngữ, bao gồm tư duy phản biện, kỹ năng tình cảm xã hội, và kỹ năng tự điều chỉnh. Nghiên cứu này đánh giá thái độ của sinh viên đối với việc áp dụng phương pháp dạy học dự án trong sáu tuần trong một lớp học tiếng Anh không chuyên. Dữ liệu định lượng từ các khảo sát, kết hợp với phỏng vấn bán cấu trúc, được dùng để đánh giá quan điểm của sinh viên về sự cải thiện kỹ năng khi hoàn thành dự án. Kết quả cho thấy sự đồng thuận tuyệt đối từ phía sinh viên về sự phát triển của ba kỹ năng quan trọng này. Dựa trên những phát hiện này, nghiên cứu trình bày các đề xuất sư phạm cho giáo viên khi dạy học dự án và đề xuất các hướng nghiên cứu tiếp theo trong lĩnh vực này.

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1. Introduction

The demands of the modern world pose significant challenges for students, requiring them to develop both discipline-related skills and soft skills [1], also known as 21st-century skills [2], for lifelong learning and effective contribution to the globalization era. Tertiary education plays a crucial role in cultivating these skills, enabling students to continue improving themselves beyond formal education. Teachers must prepare students in terms of both their abilities and willingness to learn. Critical thinking, social-emotional skills, and self-regulation are three essential soft skills that contribute to their lifelong learning process [3].

The literature underscores the potential of Project-based learning (PBL) as a highly effective pedagogical approach for enhancing essential skills such as critical thinking, communication, creativity, collaboration, self-awareness, and self-confidence [4]. Integrating PBL into education offers experiential learning opportunities and equips students with practical skills for success in a modern workforce. These findings support adopting PBL as a framework for nurturing multifaceted skills for future development. Moreover, PBL is suggested to address cultural challenges in Vietnam education which are influenced by Confucian culture, potentially producing more qualified professionals to meet global job market demands [5]. However, most studies in Vietnam college contexts are implemented in ESP classes [6]-[8]. Therefore, this study contributes to the existing literature by offering non-English-major students the chance to develop crucial competencies (critical thinking, social-emotional communication, and self-regulation) for sustainable self-development within their majors.

2. Methodology

2.1. Participants and setting

The project involved 48 non-English-major college students, all male, which is typical in Vietnamese technological institutions. Convenience sampling was used to select participants due to accessibility and cost-effectiveness. All students were in their second year and attending their second English course. However, by the project's end, only 41 students participated in the survey, and 18 took part in interviews.

2.1.1. Project implementation

The structured project spanned six weeks, divided into ten steps adopted from [9, p.111-112]. These steps include: (1) finding a theme for the project, (2) determining the final outcome, (3) structuring the project, (4) preparing language for collecting information, (5) gathering information, (6) preparing language for analyzing information, (7) analyzing information, (8) preparing language for presentation, (9) presenting final product, and (10) evaluating the project. Specifically, in this study, students were tasked with developing a plan for their future careers, including targeting specific job positions. They had opportunities to evaluate information reliability from multiple sources and were expected to dedicate extracurricular time to project completion.

2.2. Data collection and analysis

The data for this mixed methods research were collected from two main sources: students' responses to surveys and interviews. In this research, Vietnamese was preferred, considering the participants' level of proficiency. Participants clearly understood that their responses would not affect their learning outcomes, and their participation in the survey and interviews was voluntary.

A total of 41 participants completed a questionnaire consisting of 35 Likert scale items, which were categorized into three skill sections: critical thinking, social-emotional skills, and self-regulation. The questionnaire was designed by the authors in collaboration with an education expert with extensive experience in PBL, alongside other experienced teachers in the field. Prior to its official distribution, the questionnaire was piloted with 10 students to ensure face validity.

Additionally, the questionnaire demonstrated a high level of reliability, as indicated by a Cronbach's alpha coefficient of 0.98. The quantitative data were analyzed by using SPSS. Subsequently, the quantitative data collected from the questionnaire responses was triangulated with data obtained from semi-structured interviews involving 18 participants who were each presented with 13 open-ended questions. These inquiries were specifically crafted to investigate the influence of PBL on enhancing the three aforementioned skills. Consequently, the answers were also thematically coded multiple times to provide evidence for the respective choices in the survey.

3. Results and discussion

3.1. Results

3.1.1. Critical thinking

Table 1. *Students' perception of their critical thinking achievement (N=41)*

	Min	Max	Mean	SD
Q1. I can recognize the potential for development from official information about a company.	2	5	4.17	.919
Q2. I notice what I can contribute to the companies after reading the companies' requirements.	2	5	4.05	.973
Q3. I see what I need to do to be a more competitive candidate for the position after reading the job description.	2	5	4.15	1.038
Q4. I know what type of CV (Reverse-chronological, Functional, Combination) to use when applying to a specific job.	2	5	3.95	1.048
Q5. I can expect the potential risks during my application and interview (punctuality, knowledge gap, speaking skill).	2	5	4.00	1.072
Q6. I can compare companies in terms of their suitability for me and what I can do for them.	1	5	3.93	1.081
Q7. I can organize the information about jobs and companies in a logical way to quickly compare them.	2	5	4.07	1.010
Q8. My CV strongly represents the connection between job requirements and my qualifications.	1	5	4.10	1.091
Q9. I can evaluate the reliability of a company's self-introductory.	1	5	3.98	1.060
Q10. I can assess my friends' CVs based on their chosen job's requirements.	1	5	3.95	1.182
Q11. I can assess my friends' plan for the future based on their chosen jobs' requirements.	1	5	3.90	.944
Q12. After doing the project, the questions I pose to my friends during their presentations or discussions are more critical.	1	5	3.98	1.107
Q13. I am aware of making my contribution usefully unique in my future position.	1	5	4.07	1.191
Q14. I practice my creativity in different kinds of tasks from daily life to learning.	1	5	4.02	1.214
Total			**4.00**	**0.91**

Table 1 illustrates the positive attitudes of participants towards the impact of PBL on their critical thinking skills (M= 4.00). While slight variations exist in mean scores across specific sub-skills, all fall within the "agree" range, indicating strong belief in PBL's benefits. Participants expressed confidence in their critical reading abilities (M = 3.98) and noted PBL's value in evaluating information from diverse sources, indicating increased engagement in information processing. They also believed PBL enhanced their ability to provide effective peer feedback (M = 3.95) and to assess job suitability based on personal strengths and weaknesses (M = 3.93). Additionally, participants reported a heightened sense of responsibility in comprehending job requirements and noted the potential for enhancing creativity (M = 4.02). These findings highlight PBL's positive impact on critical thinking skills, particularly in information evaluation, peer feedback, judgment, and creative problem-solving.

Qualitatively, half of the interviewed students acknowledged the role of PBL in enhancing their critical thinking. For instance, Student 13 (S13) highlighted how the project enabled a deeper understanding of a target company's decline in the semiconductor market. S8 noted increased focus on studying a prospective employer due to the project. S14 showcased critical analysis skills by questioning the meaning of terms like "youthful and dynamic environment" in job descriptions, revealing a nuanced understanding of recruitment practices. Regarding their ability to synthesize information, S9, S12, and S10 shared that they had the idea to study and apply to another company after the presentation session, as they saw discrepancies between the two companies. However, this was not a sudden decision, as S10 explained, *"I won't make changes immediately because I need to learn more about the company."* It was clear that they had critically examined the two companies before making any decisions related to their future.

On the other hand, the other students who insisted on their original option justified that they had autonomously gathered and analyzed information about a number of companies in the field before the session, and they had the right to do so. Moreover, when asked, almost all of the students chose not to recruit their acquaintances based solely on long-term relationships, without checking their employability. They clarified, *"I will only look at the qualifications, experience, and how they treat people."* (S12) and *"...it depends on the capabilities and suitability of the candidate for the job. When I am the employer, I have a responsibility to bring more benefits to the company than to friends"* (S6). S1 and S3 added that the questions they posed after working on the project for a while were multi-dimensional and more useful in helping them elucidate the matter.

3.1.2. Social-Emotional skills

Table 2. *Students' perception of their social-emotional skills achievement (N=41)*

	Min	Max	Mean	SD
Q15. I can recognize internal conflicts among members.	1	5	4.10	1.091
Q16. I help the members in my group reconcile after the argument.	2	5	4.10	.917
Q17. I engage myself in the discussion until the whole group reaches unanimous decisions.	1	5	4.02	1.129
Q18. I give subtle feedback to my friends' presentations and writing pieces.	2	5	4.02	.987
Q19. My anxiety when giving speeches or raising ideas in front of the whole class is reduced (no shaky voice, or unnecessary gestures).	1	5	3.98	.987
Q20. I am confident in maintaining listeners' interests during my presentation/ speech (by using eye contacts, and eliciting questions).	1	5	3.85	.989
Q21. I acknowledge different friends' perspectives and pose relevant questions associated with their opinions/ ideas.	1	5	3.95	1.048
Q22. I do not let my anger interfere with people's impression of me.	1	5	4.02	1.129
Q23. I adopt different communicative strategies with others.	1	5	3.93	1.081
Q24. I am confident in forming friendly relationships with others after a few times interacting.	1	5	3.95	1.071
Total			**4.00**	**1.09**

According to the data in Table 2, the majority of surveyed students showed a positive attitude (M=4.00). Most students agreed that they could better recognize their own emotions and utilize them effectively both inside and outside the classroom to build relationships with individuals of varying personalities (M=3.93). Additionally, they expressed the ability to understand their peers' emotions and perspectives, enabling them to help others manage their emotions for the benefit of all (M=4.10). The participants also displayed confidence in controlling their emotions, ensuring that their feelings or anger didn't disrupt discussions (M=4.02). Their ability to manage their emotions was further reflected in their capability to overcome the fear of public speaking (M=3.98).

From the data collected in the interviews, students applied more social and emotional strategies in their communication with their peers. Regarding the questions posed to their peers, S4 and S17 admitted that he was less hesitant when asking. Moreover, S13 explained that when

inquiring about others: *"It is necessary to acknowledge the specific issues that my friends encountered during the project implementation. This will help me understand more about the challenges and opportunities that my friends had to face."* Thus, it was clear that they had a high level of understanding others' emotions and how to deal with them.

In terms of solving conflicts among group members, participants unanimously agreed that it was the first priority. Although they utilized different strategies, *"I can compromise with others to resolve conflicts more easily."* (S6) and *"I talk to each person to understand the cause and find ways to solve the problem"* (S16), they all noticed that the problems among members within one team needed to be handled immediately. S14 shared their unsatisfactory experience during group work, as they noticed that social communication and emotional management were very important.

"The content is not consistent because the team leader made changes without consensus, resulting in a messy presentation. I just hope that communication efficiency within the team is improved."

Furthermore, a variety of social strategies were applied in communication as a sign of politeness. For example, *"We should respond slowly, without delay, provide specific opinions, affirm trust, and listen when not speaking"* (S2) or *"...speak fully and considerately with the response, using appropriate forms of address in the feedback"* (S6). When giving the opposite idea, it was suggested that one kept calm, avoiding excessively expressing that they disliked that opinion and found appropriate words to state their objection (S8). Similarly, it was discouraged for one to "*put themselves too high*" (S5).

To establish a healthy working environment, S11 and S7 emphasized comfort and honesty in communication with teammates, while S13 believed in the power of respect and trust. For different beliefs, they might implement distinct social-emotional strategies to achieve the admired working condition, yet it was undeniable that they all noticed the importance of using strategies to achieve their goals.

3.1.3. Self-regulation

Table 3. *Students' perception of their self-regulation achievement (N=41)*

	Min	Max	Mean	SD
Q25. I improve my information searching skills when doing the project.	1	5	4.02	1.060
Q26. I improve my critical reading both in Vietnamese and English after doing this project.	2	5	3.93	.985
Q27. I enjoy reading by exploring English materials available on social media.	1	5	4.05	1.071
Q28. I know more useful structures for writing cover letters after doing the project.	2	5	4.07	.985
Q29. My autonomy is promoted, and I no longer feel worried about deadlines.	1	5	3.83	1.223
Q30. I have detailed plans for myself to achieve the jobs I want after graduation.	2	5	4.00	.922
Q31. I break the plan into smaller tasks and finish them one by one.	2	5	4.02	1.012
Q32. I set deadlines for myself with a detailed schedule.	1	5	4.05	1.071
Q33. I prepare myself for the job interview with expected questions and my own answers.	1	5	4.00	1.118
Q34. I find suitable learning strategies for myself.	1	5	3.93	1.170
Q35. I spend more time on self-study.	1	5	4.07	1.127
Total			**4.00**	**1.06**

Table 3 provides data for students' self-regulation perceptions. The data confirms their positive attitude towards PBL's role in promoting self-regulation (M=4.00). Moreover, it suggests significant improvement in self-regulation skills following project participation. Specifically, students demonstrated enhanced planning abilities (M=4.02) and increased self-study time (M=4.07). They also showed better accountability for individual and group tasks by setting personal deadlines (M=4.06). Post-project completion, students reported enhanced academic performance, engaging more frequently in activities like information searching (M=4.02). Additionally, they expressed a gradual development of learning autonomy (M=3.83).

Qualitative analysis paralleled the quantitative findings, showing students' enhancements in self-regulation through improved academic skills and adjustments in self-study habits. For instance, S2 noted increased reading practice opportunities from the project, resulting in greater English text familiarity and smoother reading. S16 and S18 highlighted improved reading fluency and a significant boost in self-study habits. Furthermore, S12 suggested online resources to enhance peers' language proficiency. Both S16 and S15 reported dedicating more time to self-study, adopting new learning routines, and engaging more actively in learning activities.

3.2. Discussion

Similar to the study by [10], this study highlights the partial improvement of three essential skills through PBL. Students demonstrated the ability to assess their peers' work and apply this learning to their work, indicating progress in evaluation. The project's requirements necessitated extensive reading from multiple sources, fostering critical reading skills. Additionally, students displayed critical judgment by effectively filtering information obtained from online sources based on their search experience.

During group work, students recognized the importance of effectively managing their emotions for successful collaboration. When facing conflicting ideas, students tended to assert their preferences while learning to regulate their emotions or express their viewpoints assertively. These intentional expressions and emotional regulation contribute to the enhancement of their social-emotional skills, as noted by [11], [12]. While most students acknowledged support during the project, some expressed dissatisfaction with the work. Despite these negative feelings, they recognized the importance of communication skills in collaborative settings, both in the classroom and in future professional environments.

The results indicate that students demonstrated improved self-regulation during the project, aligning with [13]'s findings. They took on the responsibility of planning their learning schedules to meet deadlines, recognizing that their punctuality was integral to the group's success [14]. This led to an increase in self-study time, given that a significant portion of the project work occurred outside the classroom. Additionally, students became more actively involved in in-class discussions as they realized the importance of gathering information to enhance their final outputs and engage more directly with their peers. Consequently, the project implementation enhanced students' learning autonomy, echoing the findings of [15].

Additionally, this study not only aligns with the critical components of effective project work outlined by [9], but it also enriches the existing literature significantly by providing discipline-related content [1] for non-English-major students in an environment where English and professional subjects are taught separately. The results are positive, similar to those presented in ESP classes [6]-[8]. Moreover, it pursues similar objectives, emphasizing the benefits of integrating PBL into non-English-major classes and promoting collaboration between language teachers and subject-specific educators [16]. This is particularly relevant, as the majority of universities in Vietnam offer only general English instruction.

4. Conclusion

The PBL approach has demonstrated a positive impact on non-English-major students' development of three essential skills for their lifelong development: critical thinking, social-emotional skills, and self-regulation. Many students understood the value of project-based work and noticed positive changes in themselves as a result of engaging in these projects. In terms of project types, the teacher employed a structured project, which required the teacher's participation in developing the timeline and materials. The project worked well for the students, yet it is recommended that the next projects for the same group of students offer them more opportunities to make the decisions themselves. Concerning limitations, this study is confronted with challenges related to the longevity of this approach on a group of students. More projects need to

be launched to confirm the development and retention of these crucial soft skills. Moreover, with longer exposure to PBL, the impact on language proficiency might become more noticeable and can be better estimated.

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