A Grounded Theory Study of Academic Procrastination in Project-Based Leaning

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Abstract

This study explores academic procrastination in Project-Based Learning (PBL) through an English writing course for sophomore English majors at a Chinese university. Using interviews, observations, and questionnaires, the study identifies project delays as stemming from both external (e.g., postponed tasks, poor collaboration) and internal factors (e.g., stress, anxiety, perfectionism). Causes include individual issues like poor time management and emotional challenges, as well as team-related problems such as ineffective communication and lack of motivation. While the findings offer insights into procrastination in PBL, future research should examine individual differences, integrate digital tools, and explore strategies to enhance collaboration and task efficiency in PBL settings.

Keywords: Project-Based Learning (PBL), academic procrastination, grounded theory

1. Introduction

1.1 Introduce the Problem

Project-Based Learning (PBL) emphasizes learning through engagement in authentic and challenging projects. This approach enhances students' learning experiences by addressing the cognitive processes involved in second language acquisition (Gu, 2007). By fostering active engagement and sustained effort, PBL not only contrasts with traditional teaching methods but also stimulates students' intrinsic motivation and interest in language learning (Imbaquingo & Cárdenas, 2023). As a result, PBL has been increasingly integrated into foreign language education programs, particularly in sophomore-level English writing courses, where it serves as a practical framework for developing students' critical writing skills through real-world, task-based learning activities.

Despite its benefits, the implementation of PBL presents challenges, particularly concerning students' tendency toward academic procrastination, which often results in project delays. Academic procrastination in PBL frequently stems from factors such as complex project requirements, inadequate time management skills, or a lack of clear task instructions. This issue manifests in students' inability to complete assigned tasks within the stipulated timeframe, causing significant disruptions to project timelines and, in some cases, failure to meet objectives. Such delays not only interfere with the intended teaching schedule but also hinder students' acquisition of essential knowledge and skills. If not addressed effectively, academic procrastination can foster frustration, habitual delay in task completion, and negative attitudes toward teamwork. However, implementing strategies such as scaffolding tasks, setting incremental deadlines, and promoting peer accountability may alleviate these challenges and enhance the effectiveness of PBL.

Given the limited research on academic procrastination within the PBL framework and the lack of comprehensive theoretical support, this study employs a grounded theory approach. By collecting and analyzing qualitative data through interviews, classroom observations, and surveys, the study seeks to identify key factors contributing to procrastination and its impact on project outcomes. The analysis of students' personal narratives will provide insights into how they perceive and rationalize procrastination, offering a deeper understanding of their behaviors and attitudes toward project work.

Given the limited research on academic procrastination within the PBL framework and the lack of comprehensive theoretical support, this study employs a grounded theory approach to explore the phenomenon. Grounded theory is particularly suitable as it facilitates the development of theory directly from qualitative data, addressing the existing gaps in understanding procrastination in PBL contexts. By collecting and analyzing qualitative data through interviews, classroom observations, and surveys, the study aims to elucidate the key factors contributing to procrastination and its impact on project outcomes. The integration of these methods ensures a holistic examination of the issue, while the analysis of students' personal narratives provides deeper insights into how they perceive and rationalize procrastination. Ultimately, this study seeks to contribute to the theoretical understanding of academic procrastination by offering a framework for its dynamics and implications within

PBL.

Building on this research background and significance, the study aims to explore the following core questions:

1. Under what circumstances does academic procrastination occur in students' English writing projects?

2. How does academic procrastination manifest in students' English writing projects?

2. Literature Review

2.1 Project-Based Learning and Its Benefits

Project-based learning (PBL) is a student-centered instructional approach that enhances students' language learning through active engagement in meaningful projects rooted in real-world social and educational contexts (Kavlu, 2022). In English writing instruction, carefully designed and implemented PBL fosters classroom engagement, promotes self-directed learning, and improves students' ability to apply knowledge in diverse scenarios (Su, 2022). Beyond academic skill development, PBL also contributes to students' holistic growth, cultivating critical thinking, collaboration, and problem-solving abilities.

The dynamic nature of PBL is particularly effective in language acquisition as it integrates listening, speaking, reading, and writing into collaborative and goal-oriented tasks. Unlike traditional teacher-led methods, PBL encourages students to assume active roles in their learning processes, thereby increasing their intrinsic motivation and long-term retention of knowledge. However, while PBL offers significant benefits, its successful implementation relies on students' ability to manage complex, multi-phase projects, which often pose challenges.

2.2 Academic Procrastination and Project Lag

Despite PBL's potential, one critical issue that undermines its effectiveness is students' tendency toward academic procrastination, which frequently manifests as "project lag". Academic procrastination is defined as the voluntary delay of intended tasks despite expecting negative consequences (Miller et al., 2023). It is closely linked to deteriorated academic performance, reduced self-efficacy, and heightened stress among students (Kranjec et al., 2016).

Factors contributing to academic procrastination are multifaceted. Emotional regulation difficulties, such as managing stress and anxiety, are significant predictors of procrastination, particularly in demanding academic contexts (Mohammadi Bytamar et al., 2020; Kuftyak, 2022). Excessive perfectionism has also been shown to exacerbate procrastination by fostering fear of failure and self-doubt (Kranjec et al., 2016). Furthermore, a lack of time management skills, task aversion, and insufficient personal initiative are critical components of procrastination, as evidenced by Bashir and Gupta (2019) academic procrastination scale.

The concept of "project lag" within PBL refers to delays in task completion during the project cycle, often resulting from the interplay of individual procrastination behaviors and the inherent complexities of PBL. Unlike general procrastination, project lag is influenced by unique PBL characteristics, including intensive teamwork, resource allocation, and multi-phase processes. However, existing research on academic procrastination rarely addresses the specific context of PBL, leaving a gap in understanding how these factors contribute to project lag.

2.3 Challenges in PBL Across Different Stages

PBL is typically structured into three main stages: initiation, execution, and conclusion. Each stage presents unique challenges that can influence project lag. During the initiation phase, unclear project goals, insufficient task understanding, and a lack of direction often lead to delays (Condliffe, 2017). Without proper scaffolding or teacher guidance, students may struggle to align their efforts with the intended learning outcomes (Barron & Darling-Hammond, 2008).

In the execution phase, maintaining accountability within teams, managing workload distribution, and adhering to deadlines are common challenges (Aldabbus, 2018). Poor communication and conflict among group members can exacerbate these issues, as effective teamwork is critical for meeting project milestones. Moreover, the complexity of PBL tasks often overwhelms students, leading to task aversion and disengagement (Gras-Velazquez, 2019).

Finally, the conclusion phase can be hindered by last-minute rushes to meet deliverables, inadequate reflection on project outcomes, and poor quality assurance (Thomas, 2000). Students often underestimate the time required for finalizing their work, resulting in suboptimal project outcomes (Kavlu, 2022). However, existing studies rarely investigate how these challenges vary across stages, leaving a gap in understanding the dynamic nature of project lag.

2.4 Gaps in Existing Research

The existing literature on PBL focuses predominantly on its benefits and general challenges, often overlooking the nuanced phenomenon of project lag. While studies on academic procrastination provide insights into individual behaviors, they fail to address the collaborative and process-driven nature of PBL (Steel, 2007). For instance, there is limited exploration of how team dynamics, resource distribution, and iterative task processes influence delays.

Moreover, the majority of research examines emotional regulation and self-efficacy as isolated factors rather than investigating how these elements interact with the unique characteristics of PBL (Mohammadi Bytamar et al., 2020). Few studies have systematically analyzed the causes and features of project lag across the three main stages of PBL, leaving a fragmented understanding of its root causes (Condliffe, 2017). This lack of stage-specific analysis restricts educators from developing targeted interventions to mitigate project delays.

In addition, the absence of a theoretical framework connecting procrastination behaviors to PBL outcomes limits the depth of existing studies. Employing frameworks such as Self-Determination Theory or Time Management Theory could provide a robust basis for understanding how motivational and organizational factors affect project lag (Ryan & Deci, 2000).

While PBL has proven to be an effective approach in foreign language education, its implementation is not without challenges. The phenomenon of project lag, closely tied to academic procrastination, poses significant barriers to successful project completion. Current research falls short in addressing the specific causes and manifestations of project lag in PBL, particularly in relation to its dynamic, multi-phase structure. By filling these gaps, future studies can contribute to more effective strategies for mitigating project delays and maximizing the pedagogical benefits of PBL.

3. Methods

3.1 Context

This study is conducted at a public university in northern China (hereinafter referred to as "University X"), which specializes in science and engineering while maintaining multidisciplinary development. The ethnographic research focuses on the Critical English Writing course, a compulsory foundation course for sophomore students majoring in English and Translation. The course adopts a progressive two-semester structure: the first semester (2 weekly class hours) features combined classes for English majors and separate classes for Translation majors, emphasizing language fundamentals and critical thinking cultivation; the second semester transitions to small-group instruction (3 weekly class hours across three classes) to enhance academic writing proficiency, serving as a bridge to advanced specialized courses.

Led by a PhD-qualified professor with extensive expertise in English pedagogy, the teaching team implemented an innovative Project-Based Learning (PBL) approach. Students were required to collaboratively compile a five-chapter English Writing Guidebook for high school students (see Figure 1), building on first-semester competencies. A dual quality assurance system was established: instructors provided process management through detailed task matrices (see Table 1), while group leaders monitored intra-group progress. The assessment framework combines formative and summative evaluations, with PBL participation accounting for 10% of regular performance (40% of final grade), alongside a 60% terminal examination. During project implementation, all groups successfully completed their initial tasks within the designated timeframe. However, during the second phase of task execution, multiple groups encountered delays in project progress, which negatively impacted the overall timeline.

Outline

- 1. Some basic English writing rules
- 2. Words
- 3. Sentence
- 4. Paragraph
- 5. Writing for practical purposes

Figure 1. Project Outline (lecture's slide)

Table 1. Task Division (lecture's teaching plan)

Group	Task
Group 1	Establishing the Chapter Framework
Group 2	Content Supplement and Readability
Group 3	Proofreading and Polishing the Manuscript
Group 4	Imagery and Layout Design

3.2 Participants

This study involved 87 sophomore students majoring in English and Translation at University X. Based on teaching logs and classroom observations, the class comprised a majority of female students. Furthermore, as the students had not yet taken the Test for English Majors (TEM) Band 4 or the College English Test (CET) Band 4, overall English learning motivation appeared low. Classroom observations revealed a lack of student initiative, with a tendency to sit in the back rows, limited participation in class activities, and frequent use of cell phones.

To address these challenges, this study implemented a PBL-based teaching activity. The primary objective was to enhance learning outcomes and classroom engagement by stimulating student participation, fostering active learning, and cultivating independent learning and collaborative inquiry skills.

To facilitate project activities, students were divided into eight groups, with each group selecting a student to serve as the group leader. Subsequently, eight students were randomly selected from these eight groups for in-depth interviews, as detailed in Table 2.

Table 2. Participants' Information

Pseudonym	Gender	Major	Positions in the group
Cui	Female	English	Member
Zhou	Female	English	Member
Liu	Female	English	Group leader
Peng	Male	English	Member
Wang	Female	Translation	Group leader
Guan	Female	Translation	Member
Qiu	Female	Translation	Group leader
Feng	Male	Translation	Member

3.3 Research Methods and Tools

This study uses qualitative data, supplemented by student writing data exported from the iWrite (English writing teaching and reviewing system) platform, to explore the performance of students' project delays in PBL and its causes. Qualitative data included classroom observations, online interviews, and students' group logs (memos) during the PBL process. These group logs detailed what the group had accomplished in the previous week, what was discussed during the week, and what was left unresolved. Meanwhile, the iWrite platform was used as an assistive tool to provide students with writing scores and revision suggestions, and the background data also recorded the common errors in students' writing and their writing levels, thus providing quantitative support for this study.

In the statistical analysis of the writing data, students' writing length, vocabulary size and vocabulary diversity showed significant individual differences. As shown in Table 3, the mean value of Total Words (Tokens) was 221.3, the mean value of Word Types (Types) was 123.56, and the mean value of Vocabulary Richness (TTR) was 0.56, indicating that there were some differences in students' writing length and vocabulary diversity, and the data ranged from a low of 63 to a high of 235, which reflected the unevenness of students' writing ability.

Table 3. Writing Length and Vocabulary Diversity

Metric	Mean	Minimum	Maximum
Total Words (Tokens)	221.3	63	235
Word Types (Types)	123.56		
Vocabulary Richness (TTR)	0.56		

In terms of writing difficulty and readability, the Flesch-Kincaid Grade Level had a mean of 10.82 (Table 4), but varied widely, ranging from 5.42 to 16.58, indicating that students wrote at varying levels of difficulty. The Flesch Reading Ease score (FRE) had a mean of 56.07, with a low of 18.72 and a high of 206.84, further reflecting the variation in readability of student work.

Table 4. Writing Difficulty and Readability

Metric	Mean	Minimum	Maximum
Flesch-Kincaid Grade Level	10.82	5.42	16.58
Flesch Reading Ease (FRE)	56.07	18.72	206.84

Taken together, these statistics show that students' writing process presents individual differences in several dimensions such as total number of words, vocabulary richness, grammatical complexity, and readability. These results provide a basis for analyzing the root causes of the phenomenon of project latency.

3.4 Data Collection and Analysis

This study began in September 2024 and ended in January 2025. Data collection included student interviews, classroom observations, and analysis of student group logs (memo). Interview data were transcribed into text through a voice transcription tool, and classroom observation transcripts were compiled and analyzed. In order to ensure the comprehensiveness and reliability of the data, the study also analyzed the group logs submitted weekly by the students as well as the contents of the teachers' lesson plans and classroom materials, and all the data sources followed the principle of triangulation and mutual authentication, thus enhancing the reliability and validity of the findings. Excluding invalid data, this study had a total of 53,838 words of interview data, as well as 23 group memos.

In terms of data analysis, this study used the grounded theory for tertiary coding, aiming to systematically reveal the phenomenon of project lag that occurs in the process of PBL among students. As shown in Table 5, a total of 538 data were coded for this study.

Table 5. Coding

Codes	Number
Open coding	307
Axial coding	154
Selective coding	77

The study commenced with open coding, involving repeated review of all data to extract preliminary abstract concepts. This phase emphasized an open perspective to uncover the underlying causes and manifestations of student project delays. Subsequently, axial coding was employed to explore the relationships and logical connections between these concepts, linking them to construct a more systematic and hierarchical analytical framework. Finally, selective coding was utilized to distill key categories from the integrated concepts, further refining the theoretical framework and ultimately forming a clearly structured and richly substantiated theoretical model of the student project delay phenomenon. This multi-stage process facilitated a deep understanding of the complex causes and underlying mechanisms of student project delays within the PBL teaching context.

4. Findings

4.1 Manifestations of Academic Procrastination in PBL

The main manifestation of academic procrastination in this course is the failure of students to complete the various stages of the assignment according to the intended time schedule. This phenomenon is specifically manifested in students' behavioral performance and psychological state.

On the behavioral level, students exhibit low engagement and activity when facing tasks. The delay in task completion is not only evident in the progress but also in communication issues among group members. Some group members even lack the desire to communicate, which negatively impacts the efficiency of the entire team. Students have mentioned that unclear division of labor in teamwork further hampers the team's progress.

"Their own commitment in the team project was average, the team leader did not have a specific division of labor, people chose tasks based on their feelings, and the division of labor was not balanced, which led to low participation (Zhou)."

It reflects the students' dependence on the team leader in the project, especially when the team leader did not assign tasks clearly, which could easily lead to confusion and piling up of tasks within the team, thus causing the project to lag behind.

Additionally, students showed concern for other members' task assignments rather than focusing on their own task progress.

"The distribution of tasks in our group is not balanced, and some students have low participation and do not actively engage in their work. (Wang)"

"The progress of English writing tasks in our group is often delayed because some members do not finish their tasks on time, which affects the progress of the whole team. (Cui)"

These statements reveal that the tasks within the team are not allocated properly, resulting in some members failing to complete their tasks on time, which affects the overall progress.

The completion of a project depends on teamwork; therefore, the root cause of project lag is

the irrationality within the team, which prevents the team from successfully completing the task according to the predetermined plan. When team members focus too much on others and neglect their own tasks, it is easy to "blame each other" atmosphere, which depletes the team's cohesion and collaboration ability. Teamwork is the key to completing a project, and if team members don't agree on the same goals, it will affect the smooth progress of the project.

When the project lags, the external performance of team members can certainly reveal some characteristics, but the students' individual psychological states also undergo significant changes. These changes are not only manifested in emotions but may also affect task completion. Specifically, when students are faced with a task, they tend to show a state of confusion or overwhelm, which is accompanied by the generation of some negative emotional responses. Some students and groups mentioned,

"Feeling a little nervous because I am worried that I can't do the task well (Wang)"

"Worry and anxiety. When getting the record sheet, it feels like there is no idea about how to write it (Group memo)."

These emotional responses reflect students' psychological stress and uncertainty when facing the task, and this anxiety is especially significant when the project is lagging behind.

However, when students successfully completed the task objectives, they generally felt a relaxed and contented state of mind. "After completing the chapter task, I would feel relaxed and satisfied and feel like I have gained something (Zhou)." This shift suggests that after task completion, students' mental state is often relieved, creating a sense of accomplishment and self-confidence.

It is worth noting that some students showed a tendency of perfectionism during task completion, especially in demanding tasks. Perfectionists tend to hold themselves to high standards and strive for impeccability. While such a mindset helps in the pursuit of high-quality results, it may also bring about a certain degree of psychological pressure. As students mentioned,

"I will reach my goals and pursue high-quality outcomes in PBL writing tasks with the identity and attitude of a perfectionist (Liu)."

"Perfectionists demand a lot from themselves and will constantly strive for perfection, but they may also cause themselves stress (Feng)."

"I think perfectionists strive for perfection in everything and are prone to unnecessary stress and anxiety (Guan)."

From a psychological point of view, perfectionism can be categorized into adaptive and non-adaptive. Adaptive perfectionists are usually able to derive pleasure from conscientious work and maintain a positive mindset in the face of challenges, whereas non-adaptive perfectionists often feel anxious and frustrated by failing to meet the high standards they set for themselves (Xu, 2022). The present study also confirmed a significant positive correlation between nonadaptive perfectionism and procrastination, which means that high nonadaptive

perfectionists are more likely to engage in procrastination. When students set standards that are too high and unattainable, anxiety and stress tend to be the main psychological factors that delay their task progress, which ultimately leads to project lag.

Therefore, students' psychological state, especially the tendency of perfectionism, plays an important role in influencing the progress of the project and the on-time completion of the task. Adaptive perfectionists may be able to overcome the difficulties in the task through continuous efforts and self-adjustment, while non-adaptive perfectionists are prone to anxiety and procrastination, which further exacerbate the phenomenon of project lag.

4.2 Reasons for Academic Procrastination in PBL

The main challenge students face when completing PBL tasks is the heavy course load, which leads to difficulties in time management. Although the English discursive writing course is a required course for majors, students often struggled to allocate enough time for the PBL task due to the heavy load of other course tasks. Student mentioned,

"I think that discursive English writing carries more weight in my major course, but I have less time after class, and sometimes it is difficult to find enough time to seriously devote to completing the project (Liu)."

"I think English writing is a heavy weight in all the major classes, but I don't have a clear plan to arrange when to do those under class, it is the free time to find the time to deal with the various assignments in a unified way (Zhou)."

These demonstrate students' time management difficulties when faced with heavy course assignments, and the lack of a clear task schedule resulted in their inability to effectively focus on their PBL tasks.

In addition to time management problems, differences in students' writing levels were also an important factor in the program lag. According to iWrite's data, there were large differences in writing levels among students, which meant that even for the same task, the completion and progress of different students would vary. Some of the group and students mentioned,

"The previous level of English writing was at an intermediate level, which inevitably led to occasional off-topic and empty content and lack of words (group memo)."

"I think my English writing ability still needs to be improved, and I often encounter some grammatical and vocabulary difficulties in the writing process (Peng)."

These feedbacks reflected the difficulties students faced during the writing process, especially in terms of the quality and accuracy of the tasks, and students with lower writing proficiency might need more time to complete the tasks, which led to a delay in the progress of the whole group.

In addition, students' emotional state is one of the hidden factors of project lag, especially at the beginning of the task. Many students experienced anxiety and stress when facing the PBL task, which affected their task advancement. Some students mentioned,

"At the beginning, they would feel nervous and anxious that they would not be able to complete the task (Qiu)."

"I find it challenging to complete the English writing task for PBL and sometimes feel stressed (Feng)."

These emotional barriers may affect students' decisions and actions, making it more difficult for them to focus on task completion, especially when the task is not yet well underway, and emotional distress may lead to procrastination behaviors.

Thus, students' time management skills, differences in writing levels, and emotional reactions work together to cause lag in PBL tasks. In the process of task management, students' individual differences and emotional changes significantly affect the speed of project advancement, and this lag is often the result of multiple factors intertwined.

In the teaching practice of PBL, team dynamics play a crucial role, which directly affects students' learning experience and project outcomes. According to the interview data, poor team communication and lack of effective motivation were among the major problems students experienced during the project. First, although students' self-selected grouping at the beginning of the project seemed to enhance the freedom of teamwork on the surface, in the actual implementation process, the communication efficiency of some group members was very low, and task claiming was usually just a formal process, lacking effective discussion and in-depth understanding of the project tasks. In some groups, students only claimed tasks by solitaire in the group chat (Figure 2), without communicating the specific requirements of the tasks and their own understanding in advance, and this lack of preliminary discussion and task decomposition easily led to lagging progress and uneven quality of the tasks.
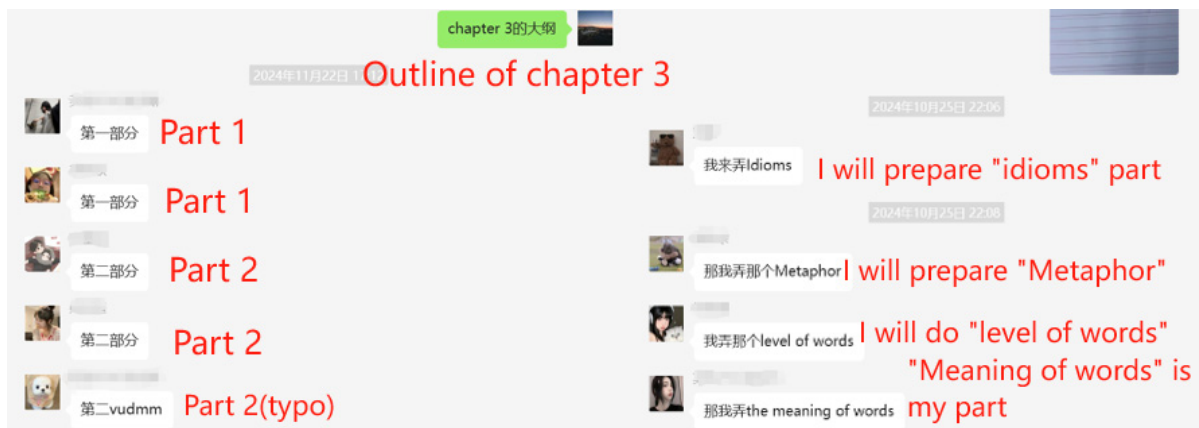

Figure 2. Screenshot of Group Chat

(The text in red represents the English translations of the original Chinese messages)

In addition, the lack of uniformity and effective collaboration among team members was another key factor contributing to the project's lag. Students reported that during the team writing process, there were often disagreements among members about revisions, and some

students were unwilling to accept others' suggestions for revisions, thus hindering collaboration. Specifically, a student mentioned,

"Some students were not willing to listen to other students and wrote all by themselves and were not willing to let the group make revisions (Zhou)."

This phenomenon of individualism and closed communication significantly reduces the team's efficiency in collaborative work and limits the collective decision-making and problem-solving abilities, which in turn directly affects the smooth progress of the project.

4.3 Possible solutions

Students also provided their views and suggestions on incentives in team projects, indicating that they believe that effective incentives are essential to increase participation and completion of team projects. Some students suggested that members could be incentivized by setting clear submission deadlines, bonus points, public praise, fairness in task allocation, and boosting participation through games and activities. As students put it,

"Everyone rushes to meet the deadline, but we can't rule out the unmotivated ones, so students can praise them publicly or give the most motivated ones the usual points (Wang)."

"I think there are plus points, everyone gets extra points if they participate properly, and less or no points if they don't complete the task (Liu)."

These suggestions reflect students' need for incentives, believing that reasonable incentives can effectively increase team members' sense of responsibility and task completion.

In teamwork, students also recognized problems with task assignment and team management. One student suggested,

"I would recommend that the team review and adjust task assignments on a regular basis to ensure that everyone has access to and handles different types of tasks (Peng)."

This proposal reflected students' deep understanding of teamwork and emphasized the fairness and diversity of task assignments, which was believed to not only reduce the burden on individual members, but also promote skill diversity and synergy across the team. At the same time, encouraging members to learn from each other and share experiences was also seen as an effective way to improve the team as a whole.

To summarize, poor team communication, irrational task allocation, lack of incentives, individual differences, and emotional problems work together to cause the lag in the progress of PBL tasks. Students were able to clearly identify and reflect on these issues when confronted with problems in teamwork, but effective solutions to these problems require continuous improvements in team dynamics, task management, and emotional regulation.

5. Conclusion

The manifestation of project lag is not only visible in behavior (e.g., low participation,

insufficient communication), but more in the students' psychological state, especially the stress caused by nervousness, anxiety, and perfectionist tendencies. During PBL, students often rely on other members of the team, and the lack of a clear division of tasks leads to the piling up of tasks and delays in progress. This situation suggests that communication problems and lack of effective incentives within the team are among the key reasons for project lag. Meanwhile, students' individual differences, such as poor time management skills, varying levels of writing skills, as well as emotional and attitudinal problems, also affected the progress of the project to a great extent. The perfectionist tendency of some students caused them to face the task with excessive psychological pressure, and while they felt relaxed and satisfied after the task was completed, this mindset might also prevent them from positively responding to the challenges in the task.
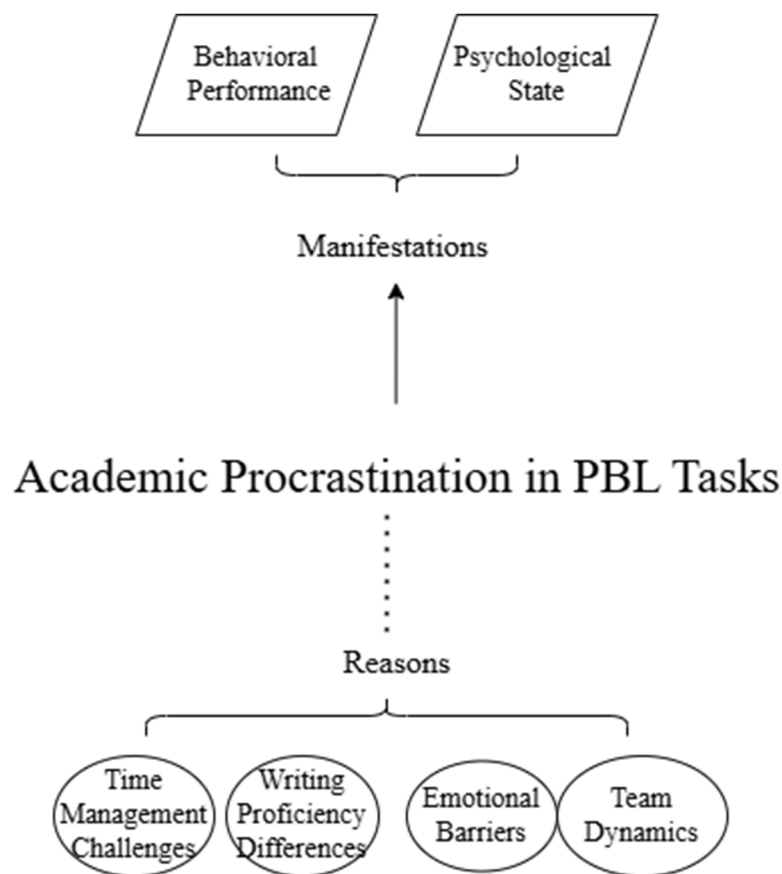

Figure 3. Academic Procrastination

As illustrated in Figure 3, this study establishes a theoretical framework for understanding academic procrastination in project-based learning (PBL) and summarizes its manifestations, causes, and corresponding solutions. Specifically, the manifestations of project delays can be categorized into external and internal aspects. The external aspects primarily include delayed task completion and suboptimal quality (Gras-Velazquez, 2019), while the internal aspects encompass low participation, lack of motivation (Kranjec et al., 2016), and emotional challenges such as anxiety and stress among team members.

An in-depth analysis of the underlying causes reveals that procrastination stems from both individual and team-related factors. Individual factors include poor time management, differences in writing proficiency, and emotional fluctuations. On the other hand, team-related factors primarily involve ineffective communication, low collaboration efficiency, and the absence of motivational mechanisms (Miller et al., 2023).

While this study provides valuable insights into the manifestations, causes, and potential solutions of academic procrastination in PBL, several limitations exist. First, the sample is limited to sophomore English majors at a single institution, which may affect the generalizability of the findings to other disciplines or educational settings. Second, the relatively short data collection period does not allow for a comprehensive longitudinal analysis of the entire project lifecycle, potentially leading to subjective and situational biases in the findings. Furthermore, the study primarily focuses on common challenges rather than individual differences, such as variations in writing proficiency, emotional states, and time management skills, which may influence project delays in unique ways.

Future research can build upon this study by expanding the sample to include students from diverse academic disciplines, institutions, and regions to enhance the generalizability and applicability of the findings. Additionally, adopting longitudinal research methods could provide deeper insights into the evolving nature of project delays over time. Further studies may also explore the impact of individual differences and coping strategies through case studies and quantitative analysis to develop personalized interventions for PBL settings. Moreover, the integration of digital project management tools and intelligent feedback systems can be explored to optimize team collaboration and improve task execution efficiency.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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