Original Research Article

How PBL Enhance the Learning Effectiveness of Managerial Psychology Course

Abstract

The ability to solve problems has always been a core skill required in study, work and life, and is one of the important goals of high-impact teaching. In this case, project-based learning with problem solving orientation has become the teaching model often adopted by teachers. However, there are still some problems in the practical application of PBL. Such as reasonable allocation of teachers and teaching resources, mobilize the enthusiasm of teachers and students for PBL teaching. Therefore, the purpose of this paper is to explore the nature of students' perception of PBL and put forward research suggestions. This study obtained data from selected students of managerial psychology through literature retrieval and investigation, and used text analysis and induction to find out the main ways that affect the learning effectiveness of PBL. It is found that teachers' humor personality traits and attitude toward students, the practicability of teaching materials and course content, and the interactivity and practicability of teaching methods can improve students' attraction, learning interest and class participation, and then affect the classroom atmosphere and learning effectiveness. The research suggests that teachers can cultivate a sense of humor, simplify the content of textbooks, propose corresponding materials and cases, strengthen interactive and practical teaching methods, and encourage students to practice, which can attract students efficiently and achieve good learning results.

Keywords: project-based learning; sense of humor; classroom atmosphere; learning effectiveness

I. Introduction

In higher education, the ability to solve problems has been the goal of talents training for many majors in colleges and universities, and it is also the core skill required for study, work and life (Binkley, Erstad, and Herman., 2012; Ling, Zhou, Zhang, and Ren, 2024). These problems arise from real situations, and their solution process is highly complex and challenging, requiring the active participation of students (Ruslan, Bilad, Noh, and Sufian, 2021). Therefore, it is necessary to strengthen students' participation and practical skills in order to improve students' problem-solving ability (Yen, Cai, and Fa, 2023).

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Comment [A2]: Suggestion for title: Effectiveness of PBL in improving Managerial Psychology learning

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In this case, project-based learning (PBL) is a feasible and suitable teaching mode. It is a systematic and transformative pedagogy that advocates that students acquire knowledge and skills by working long hours to investigate and respond to real, contextualized, and complex problems or challenges (Wang, 2023). Moreover, empirical studies have confirmed that PBL has a positive impact on pre-service teachers' problem-solving ability, academic performance, and their perception of the teaching profession (Alrajeh, 2021; Kokotsaki et al., 2016; Tsybulsky and Muchnik-Rozanov, 2023). It helps to develop teachers' teaching competitiveness (Tsybulsky and Muchnik-Rozanov, 2023). Therefore, PBL has become an important curriculum design under the high-impact teaching concept (Yen, Cai, and Fa, 2023).

However, the existing research has not pointed out the types of projects, the number of curriculum activities and the quality of curriculum activities. As a result, there are still some execution blind spots in the practical application of PBL. For example, how to better implement PBL in teaching, how to balance PBL teaching and traditional ones, how to rationally allocate teachers and teaching resources in PBL, and how to mobilize the enthusiasm of teachers and students for PBL and other issues (Wang, Zhang, and Lu, 2023) has become an interesting issue.

The curriculum design is teacher-centered, and teachers impart knowledge one-way. Students are in a passive position, and teachers do not pay much attention to and cultivate students' ability to discover and solve practical problems (Zhou, 2023). What matters should teacher pay attention to when students are asked to solve practical problems through participation, investigation and research activities (Chen and Zhang, 2023). Therefore, there is still a gap in the research of PBL in theory. Clarifying these issues will help enhance student participation, teamwork and problem-solving skills.

Based on the above discussion, the purpose of this study is to explore what project-based learning is perceived by students, including the project-type activities, try to find out the path that affects the learning effectiveness of PBL, and put forward research suggestions. In this case, managerial psychology is the research objective of this study, and students who studying this course are the survey objects in order to explore their perception of project-based learning.

2. Methods

The purpose of this study is to explore what project-based learning is perceived by students. Based on the nature and feasibility of the research topic, the qualitative research method is suitable for this study. In terms of the choice of research objectives, managerial psychology is an important course in the School of Management, with a total of 38 students enrolled in the junior year. In this study, students majoring in

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The supporting tools of the PBL model need to be explained, to provide direction in creating interview guidelines

managerial psychology were selected as the survey objects to ensure sample stability and data quality; Secondly, junior students have taken a lot of courses, so they have experience in various teaching methods of different teachers, and the follow-up comparison with other courses is relatively objective.

Secondly, in terms of data acquisition, based on objective and scientific principles, the researchers did not inform the students that data collection would be carried out after the course. Therefore, students will not have improper expectations when they come to class. In the eighth week, we randomly invited students to participate in the interview and obtained the text data. The students participated in the survey without the pressure of study and score, and the data obtained was relatively rational and objective. The data was collected on April 26, 2024, using LearPass software. In the end, a total of 38 students were interviewed, 19 boys and 19 girls respectively, and the average time for each person to fill in was about 15 minutes.

In the data collection process, the researchers first concerned about their study and exam conditions, asked them about their vacation plans, and eased their nerves. They were then asked about their adaptation to managerial psychology and what problems they encountered. Then they got to the point and asked them what problems they had encountered in learning managerial psychology. What are the teaching activities designed for this course and what are the biggest differences from other courses? Finally, the students were asked to complete their response ideas and then submit their contributions to the system. Based on this, the researchers can fully observe and record the respondents' responses, produce text files, and. In total, 8819 characters were obtained in this study. During the data collection period, the researchers only objectively stated the questions and avoided over-stimulating the emotions of the respondents. Moreover, only objective descriptions are made in the record, without adding the subjective views of the researchers. Therefore, the data obtained in this study comply with the objective and rational principles, and the reliability is adequate.

Furthermore, in terms of data analysis and interpretation, this study uses text analysis to encode the survey data according to the respondents. Then, three researchers read the texts, summarized their key points and compared them. As for the differences, the three exchange views and adjust them. In addition, this study only makes appropriate interpretations based on the text to better retain the original intention of the interviewees. This study complied with qualitative research norms and procedures to obtain data objectively and interpret data appropriately. Therefore, the validity of this study is adequate.

3. Empirical results

The purpose of this study is to explore the students' perception of the basic learning of the managerial psychology project from their point of view. The implementation of managerial psychology under PBL includes that students are required to make a study map of the teaching unit in groups before class, review before class (Q & A), guide before class for groups (role playing and situational exercises), learn new knowledge, discuss case studies in class, homework and quizzes in class, review after class, and learning support (office hour). As far as the implementation results of PBL are concerned, the text data shows students' perception of curriculum activities (see Table 1).

Table 1 Respondents' overall evaluation of the managerial psychology course

Dimension	Subject words (Frequent)
Teacher's	humor (16), interesting (8), funny (7), personalized guide (7), style (5),focus on students (2) focus on students, experience (2), Cute (2), clothing (1), responsible for active (1)
Textbook	PPT(11), combined with practice (10), Case/life case (10), Application (8)
Materials	Activities (39), interactive/interactive (15), and practice (11), participation (8), fun/interesting (8)
Practice course	content understanding/ability (29), (11), combined with the actual (10), case/life case (10), (8), fun/interesting (8), view (4) and (1) the reading ability
Classroom atmosphere	interest (15), atmosphere (11), (7), easily attention (4), (3), cheerful (2), not boring (1)

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First of all, in terms of students' evaluation of teachers, the text analysis extracted a total of 11 terms, including humor (16), funny (8), funny (7), personalized guidance (7), style (5), attention to students (2), experienced (2), cute (2), clothing (1), lively (1) and responsible (1). The data show that the teacher's sense of humor and personalized guidance may be an important factor in students' interest in the curriculum and attract students' participation and investment. Secondly, teachers' teaching style and personalized guidance to students, as well as providing students with a more relaxed and pleasant classroom atmosphere, may be the key factors for a good classroom atmosphere and better learning results. Finally, comparing the teachers' personality traits (sense of humor, etc.) with their attitude toward students (personalized guidance and attention to students), the teachers' appearance, clothing, experience and sense of responsibility pale in comparison in this survey. These results suggest that a teacher's personality traits and attitudes may be more important than a teacher's knowledge, teaching experience, and appearance. Specific source materials are listed below:

"The teacher is very cute, the class is very interesting and humorous Taiwan dialect makes this class full of vitality and passion! Just the right amount of banter to keep students' attention in class was met." (A2)
"The teachers of the course are humorous and often tell us problems based on their own experiences. Such as stories about handsome men and mountaineering stories were met. He focuses on interaction with students. Other teachers may use more traditional teaching methods, such as lectures, discussions and experiments." (A3)
"I feel that this course is my favorite. The other classes always feel a little dull, can not to listen or learn. But teachers just have their own style. Their own teaching style, and their own speaking style is very different from other teachers." (A6)

Secondly, in terms of teaching materials, text analysis extracts a total of 4 entries, including PPT (11), combination with practice (10), case/life case (10) and application (8). On the whole, students prefer teaching materials that combine with real life. Teaching materials that are close to life cases and teaching materials with high applicability to the future were welcome. Specific source materials are listed below:

"The teachers have a humorous style in class and often use various examples to demonstrate the knowledge, which makes the students have a strong interest in the course." (A11)
"Yan may pay more attention to course content and practical operation, rather than those ones who just present theoretical knowledge. He would give us a general overview of the chapter, let the students create their own study maps, and we would have a general idea of the class before class, and it would be easier to learn in class than in other classes." (A15)
"Teachers pay more attention to interaction, through case studies, group discussions, etc., so that students can better understand and master knowledge. The teacher's humorous teaching style makes students more involved in the class. Each lesson has a clear learning goal, and the content is simple and easy to understand." (A20)

Third, in terms of teaching methods, the text analysis extracted a total of 6 terms, including activities/small activities (39), interaction/interactivity (15), practice (11), participation (8), application (8), and fun/lively and interesting (8). On the whole, this course has a lot of activity design, more interaction with students, and requires students to do hands-on operations, so it can attract students to participate, students also feel the fun of this course, and the classroom atmosphere may be more active. Therefore, activity design, teacher-student interaction and classroom practice may be

the antecedents of student participation and classroom atmosphere, as well as the antecedents of learning outcomes. Specific source materials are listed below:

“Classroom interaction with students, in the form of questions to make students more involved in the classroom. Let us review what we have learned by writing what we have learned." (A35)
"Use their own experience to tell us that people should have a dream, and can persist in fighting for the dream." The teacher's teaching style is very flexible, and the homework and exercises assigned by the teacher have exercised our thinking and problem-solving skills, which has allowed us to make continuous progress in learning." (A19)
"The teacher of this course pays attention to practicality and innovation. He often organizes students to conduct case studies and uses humorous cases to cultivate their independent thinking ability. In addition, teachers of this course also focus on interdisciplinary learning, integrating knowledge from different fields, so that students can better understand and apply what they have learned." (A29)

Fourthly, in terms of course content, text analysis extracts a total of 8 terms, including understanding/ability (29), practice (11), combination with practice (10), case/life case (10), application (8), interesting/lively and interesting (8), vision (4) and reading ability (1). On the whole, the course content has a high comprehensibility, combined with practical cases and applied operation content, vivid and interesting content can help enhance students' learning interest and expand students' learning vision. Therefore, the cases combined with practice, applied operation content and lively and interesting content may be the antecedents to improve the classroom learning atmosphere and learning effectiveness. Specific source materials are listed below:

"Dr. Yan may also provide students with some extended materials related to the course content, helping us to better understand what we are learning and to show a more rigorous, patient and professional teaching attitude in the teaching process." I think Ms. Yan is probably an experienced, humorous and responsible teacher for students." (A32)
"The teacher's teaching content is also different, some teachers' teaching content is easy to follow the knowledge content in the textbook, so the class is relatively boring, the teacher will carry out corresponding expansion, the class content is also relatively extensive." (A33)
"Teaching teachers will not blindly according to the PPT to explain, always talk about

some of their own real life cases, to make us easier to understand, easy to understand, attract our interest in learning, and then let us learn how to apply the textbook contentinto real life." (A26)

Fifth, in terms of classroom atmosphere, the text analysis extracts a total of 7 terms, including interest (15), atmosphere (11), relaxed (7), attention (4), attraction (3), pleasure (2) and not boring (1). Overall, the classroom atmosphere can attract students' attention, arouse students' interest, more relaxed and pleasant. Therefore, attracting students' attention and arousing their interest in learning may be factors influencing the relaxation and pleasure of class. Specific source materials are listed below:

"Considering to this teacher, it is really different! Other teachers teach knowledge in class, but this teacher took us to "play" the classroom, let the knowledge itself "run" into our heads. Never scripted, there are always so many fun little stories that make complex content so easy! Every class felt time passed so fast, completely immersed in the ocean of knowledge can not extricate themselves. I wish every teacher could be this fun and professional!" (A35)
"Teachers are able to effectively communicate knowledge and concepts, as well as help us understand and apply what we have learned. It can promote students' learning and improve their academic performance and ability. It is also able to integrate with the real life and learning needs of students, and can capture our attention and interest. A good classroom activity should be one that is fun and enjoyable for students, and one that allows them to apply what they have learned in practice." (A29)
"In learning, I think that the teacher's teaching model, I can accept, not blindly dead reading lessons, but combined with reality, with facts to speak; It is an example analysis, giving us a lot of social examples, so that we can better understand its meaning and better grasp the knowledge. The teacher is not boring, we listen to it with relish, let us learn a lot of new knowledge in happiness." (A31)

4.Discussion

The main purpose of this study is to clarify which classroom activities should be designed by teachers under the PBL model to attract students' attention and arouse students' learning interest. The curriculum design of the existing research is teacher-centered, teachers teach knowledge one-way, students are in a passive position, and teachers do not pay too much attention to and cultivate students' ability to discover and solve practical problems (Zhou, 2023). This study found that teachers' personality traits and attitudes towards students are one of the key factors in the

Comment [IC10]: Suggestions that need to be studied are the effectiveness of the problem-based learning (PBL) model in learning Managerial Psychology. Effectiveness criteria can be seen based on: 1) student and lecturer activities; 2) how is the learning managed; 3) what are the learning outcomes; and 4) how students respond to learning with PBL

success of PBL. Teachers have a sense of humor personality, showing that the teaching style is more interesting and interesting, which may be highly attractive to students.After engaging students to attend, student engagement may increase. If teachers can pay attention to students and give students personalized guidance, it can arouse students' interest in learning more. With higher learning interest, students' learning results may be more positive. In existing studies, PBL has been proven to improve students' participation in the course (Almulla,2020). Moreover, under the condition that students can participate in curriculum activities, it can cultivate students' critical thinking ability (Eliyasni et al., 2019) and enable students to better solve problems (Krajcik et al., 2022; Miller and Krajcik, 2019). Therefore, the research results of this paper are consistent with the existing research.

Secondly, if PBL model wants to achieve better teaching results, it may be necessary to think about more diversified teaching methods that students can accept. The design of classroom activities in this study covers before, during and after class, and strengthens communication and interaction with students. These measures can effectively attract students' attention and arouse students' learning interest throughout the whole period. Research points out that the core of PBL is the cultivation of problem-solving ability (Ling, Zhou, Zhang, and Ren, 2024), and these problems must be real problems (Thomas,2000). The teaching activities designed in this study are close to students' life, and the cases proposed are also problems in the real world, so they can arouse students' high attention and learning interest. When students discuss real case problems, their problem-solving ability is constantly improved, and better learning results are achieved. Therefore, the research results of this paper are consistent with the existing research.

Moreover, in terms of teaching materials and course content, the teaching materials and cases used in this course are close to students' lives and have strong applicability, so they can attract students' higher attention. Existing studies mostly emphasize the teamwork of PBL (Edutopia, 2014) and solving real problems (Thomas,2000), and less emphasize the orientation of teaching materials and course content. In other words, if PBL wants to achieve better results, teaching materials and course contents close to students' life are indispensable, which is the first theoretical innovation point of this study.

In addition, in terms of classroom atmosphere, the analysis results show that classroom atmosphere is relaxed and pleasant, which can arouse students' high attraction and learning interest, which may help improve the teaching effectiveness of

PBL. While several PBL studies focus on problem solving (Thomas,2000; Ling, Zhou, Zhang, and Ren, 2024) when working with a team (Edutopia, 2014), the research findings on classroom atmosphere are more prominent. For PBL to achieve better results, teachers, teaching methods and teaching materials are indispensable. However, if the classroom learning atmosphere is good, the teaching effectiveness of PBL can be improved, which is the second theoretical innovation point of this study.

Finally, based on the findings of this study, this paper deduces the path diagram of PBL teaching effectiveness (Figure 1). Among them, in the PBL model, the precursors that affect the PBL teaching effect include the teacher side (personality trait and attitude), the textbook side (practical textbook and practical content) and the teaching method side (interactive and practical). The mediating variables include attractiveness, learning interest and class participation; Outcome variables include classroom atmosphere and learning effectiveness. Therefore, if we want to improve the teaching effectiveness of PBL, we must deal with the factors of teachers, teaching materials and teaching methods. Secondly, these three pre-factors will affect the classroom atmosphere and learning effectiveness through the mediating influence of attractive learning interest and class participation, which is the third theoretical innovation point of this study.

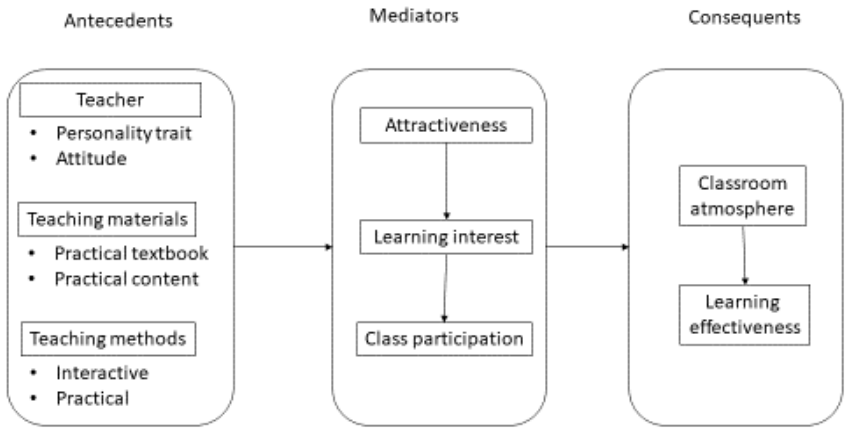

Figure 1. Influencing path of PBL teaching effectiveness

5.Conclusions and Suggestions

The purpose of this paper is to explore which classroom activities teachers should adopt under the PBL model;to explore the factors and ways that affect the teaching effectiveness of PBL; and put forward relevant suggestions. Based on the above analysis and discussion, this study draws the following conclusions.

- A teacher's sense of humor and attitude towards students will enhance students' attractiveness, interest in learning and participation in class, which in turn will affect the classroom atmosphere and learning effectiveness.
- The practicability of teaching materials and course content will enhance students' attraction, interest in learning and participation in class, which will affect the classroom atmosphere and learning effectiveness.
- The interactive and practical nature of teaching methods will enhance students' attraction, learning interest and class participation, which will affect the classroom atmosphere and learning effectiveness.
- Teacher materials and teaching methods influence classroom atmosphere and learning outcomes through engagement, interest and participation. Moreover, attractiveness will affect learning interest, learning interest will affect class participation, and classroom atmosphere will affect learning effectiveness.

Based on the above conclusions, this study puts forward the following suggestions:

- A teacher's personality trait is not necessarily a high sense of humor, but a teacher can develop a sense of humor, improve the impact on student attraction and subsequent teaching effectiveness.
- Teachers have heavy tasks in teaching, scientific research and service, and their attitude towards students should be positive, active and positive, which not only determines whether they can attract students to listen to and learn, but also determines the teaching effectiveness.
- In terms of the selection of materials and course content, existing materials may meet students' expectations or may not be suitable for most students. In order to attract students efficiently and achieve good teaching results, teachers must simplify the content of teaching materials and put forward corresponding and appropriate materials and cases.
- In terms of teaching methods, traditional teaching may not find students' favor easily. Teachers should strengthen interactive and practical teaching methods and encourage students to practice, so as to attract students efficiently and achieve good teaching results.

In terms of recommendations for future research, the following are stated:

- This study has discussed some factors that affect the effectiveness of PBL teaching, but the data source is limited to the management colleges of private universities. Future studies could collect data more broadly and compare across disciplines.

- Secondly, this study has provided the basic influencing factors of PBL model, and future studies can further explore more influencing factors on this basis, such as students' involvement in the curriculum, learning inertia and self-efficacy.
- Finally, this study has proposed the variable relationship that affects learning effectiveness under the PBL model, and the scale can be developed and quantified in subsequent studies.

Reference

Comment [IC11]: The author needs to add several references related to the problem-based learning (PBL) model

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