A DEVELOPMENT THE PROBLEM BASED LEARNING MODEL FOR ENHANCING STUDENTS' MOTIVATION IN ENGLISH READING FOR JUNIOR HIGH SCHOOL STUDENTS

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A Dissertation Submitted in Partial Fulfillment of the Requirements

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BY

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The aims of this research are as follows: (1) to study the definition and components of learning motivation of junior high school students; (2) to develop the Problem-Based Learning model for enhancing students' learning motivation in junior high school; (3) to evaluate the effectiveness of the Problem-Based Learning model for enhancing the learning motivation of junior high school students. The samples consisted of 66 junior high school students from Wuhan Steel City No. 2 Middle School that were randomized to the equally experimental and control groups. The experimental group (n=33) received the Problem-Based Learning model for enhancing learning motivation, but the control group was not. The following research results were obtained: (1) the learning motivation of students in junior high school consisted of three components: activation, persistence, and intensity; (2) the Problem-Based Learning model was developed and consisted of five steps: problem posing, task allocation, information collection, group presentation, and comprehensive evaluation. In addition, the Problem-Based Learning model consisted of 14 lesson plans, each lasting for 90-120 minutes; (3) the Problem-Based Learning model had the most potential in promoting the learning motivation of junior high school students, and the experimental group continued to show improvement at one-month follow-up period.

Keyword : Learning motivation, Problem-based learning, Enhanced junior high students

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limits to what I can achieve if I set my mind on it.

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CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Motivating students to acquire knowledge in educational institutions is currently a matter of significant concern for educators. Encouraging their motivation and ensuring their academic success poses as one of the most formidable obstacles (Awan et al., 2011). Students enrolled in Junior High School fall within the early adolescence phase, typically aged between 12 and 15 years old. During this critical period, they necessitate substantial support and attention to effectively accomplish their developmental tasks (Sari et al., 2022). According to Maulida, education of adolescence, especially in junior high school is more apparent, because the lack of learning motivation or learning motivation is not sustained, teenagers generally exist lazy learning, irregular learning, do not do homework, skipping class and other problems (Maulida, 2019). Therefore, learning motivation is an important factor in student learning and achievement (Elliot & Dweck, 2005). One of the major obstacles in the classroom is to engage students in their learning process and maintain their enthusiasm for it. According to Filgona et al., learning motivation for students is essential as they learn best when they recognize the need and develop the desire to learn (Filgona et al., 2020). Absence of learning motivation can hinder students from initiating the learning process and impede their ability to persevere through challenges encountered along the way (Gardner, 2007).

Learning motivation can be defined as students' willingness or desire to participate in learning and study hard, which is reflected in students' choice of specific learning activities and efforts to study activities (Koff & Mullis, 2011). This aligns with the findings of Ushioda (Ushioda, 2014), who emphasizes the significance of learning motivation as a crucial factor in human learning. It is reflected in the goals and directions pursued, levels of effort invested, depth of engagement, and degree of persistence throughout the learning process. Based on the findings of Saeed & Asghar, motivation is composed of activation, persistence, and intensity. Activation involves making decisions to initiate certain behaviors; persistence refers to continuous efforts towards achieving a

goal; lastly, intensity can be observed when individuals strive to pursue their objectives (Saeed & Asghar, 2012).

According to my sixteen years of experience teaching English in front-line positions and my observations from teaching practice, I have found that students' lack of learning motivation is primarily evident in the following aspects: After students enter junior high school, with the increase in the difficulty of English learning, many students lose their interest in learning. Most junior high school students are afraid of English learning, they are afraid of memorizing vocabulary and seeing large reading articles. Students show a sense of powerlessness in English learning, and some simply don't learn, on the grounds that they can't understand the classroom explanations, but in fact they don't want to make the effort. Some students claim that they are not interested in learning English and don't want to work so hard, while subconsciously trying to maintain a certain image of themselves. As a matter of fact, some students do have poor English learning foundation and ability, lack of determination to study hard, do not have sense of achievement or lack of awareness to overcome difficulties, but the main reason for these phenomena is the lack of learning motivation. A more common phenomenon is that students' learning motivation is not lasting enough, they can only study for a short period of time with the high intensity, cannot persist in.

Learning motivation is one of the important factors of English learning, but lack of learning motivation has become a major problem in English teaching. How to stimulate junior high school students' learning motivation has become the focus of attention of the majority of front-line English teachers. According to Dörnyei, learning motivation plays a pivotal role in individuals' decision-making, their willingness to persist in an activity, and the level of effort they invest (Dörnyei, 1998). Considering that learning a second language entails not only knowledge acquisition but also cultural engagement, the significance of motivation becomes paramount in the learning process (Gardner, 2007). In the classroom, the teacher is both the transmitter of knowledge and the organizer of instruction, as well as a collaborator in student communication. Therefore, it

is particularly important for teachers to find out appropriate learning strategies to motivate students.

On the basis of literature review, Amirkhanova et al. (2016) enhanced students' learning motivation to learn through the implementation of Reflective Journal Writing (RJW) strategies while increasing learning efficiency and self-confidence (Amirkhanova et al., 2016). Providing students with a realistic interactive scenario between the learner and the e-learning game (ELG) to accomplish tasks and learn can promote student motivation. Laura Batson & Susan Feinberg (Batson & Feinberg, 2006) have confirmed this finding. By using project-based learning (PBL), can positively influence motivation by enabling students to construct their own knowledge and reflect on their learning projects (Shin, 2018). Sarwinda improved students' motivation through the learning process using audio-visual learning media based on Contextualized Teaching and Learning Approach (Sarwinda et al., 2020). Rakasiwi and Muhtadi used the creation of educational games as a learning tool for students to enhance students' motivation in math class (Rakasiwi & Muhtadi, 2021).

Hmelo-Silver used the problem-based learning (PBL) learning model: the teacher acts as a facilitator throughout the process, and students work in small groups to learn new knowledge, solve problems, and reflect on their learning strategies, which ultimately enhances their motivation to some extent (Hmelo-Silver, 2004). This research emphasized the potential for problem-based learning (PBL) to change the way we educate more effectively. Researchers had more interest in and support for this learning strategy, believing that it can significantly improve students' motivation to learn. The empirical evidence for PBL is more than sufficient. Azman and Shine conducted two quasi-experimental studies in Malaysia that learning English language through PBL strategies ultimately led to an increase in students' motivation. In response to the above real-life dilemma, many scholars and teachers have tried to introduce and apply the problem-based learning model in teaching (Azman & Shin, 2012). PBL was originated in the United States in the mid-1950s, and it is a kind of teaching method to help learners analyze and solve problems, and to cultivate learners' critical thinking (Melovitz-Vasan et

al., 2018). More specifically, one of the objectives of PBL is to foster intrinsic learning motivation in students (Barrows, 1986).

In conclusion, several studies have examined the learning motivation associated with the PBL. The findings indicate that this approach has the ability to effectively equip students with necessary knowledge and enhance their motivation in a more efficient manner. Through PBL, students develop the skills to actively participate in both teaching and learning processes; they take ownership of their education, collaborate successfully within a team setting, adapt to new and evolving situations, and acquire lifelong learning abilities. The challenges, then, are how we structure our teaching effectively in PBL model, students engage the learning actively, and verify the supposition that the learning model indeed could motivate students in the long term. Therefore, it is very necessary to explore the application of PBL in basic education English teaching.

1.2 Questions of the Study

1) What are the definitions and components of learning motivation for students in junior high school?

2) What are the characteristics of the Problem-based Learning model for enhancing students' learning motivation in junior high school?

3) Dose the Problem-based Learning model enhance students' learning motivation in junior high school?

1.3 Objectives of the Study

There is an urgent need to study the practical effects of PBL in the English classroom and how it can enhance motivation. In this paper, researcher attempted to design an empirical study based on cognitive and social constructivist perspectives, aiming to:

1) To study the definition, components of learning motivation for students in junior high school.

2) To develop the problem-based learning model for enhancing students' learning motivation in junior high school.

3) To evaluate the effectiveness of the problem-based learning model for enhancing students' learning motivation in junior high school.

1.4 Significance of the Study

The development of a problem-based learning approach aimed at enhancing the motivation of junior high school students holds significant importance in the following ways:

1) The introduction of an innovative problem-based learning model to boost the learning motivation among junior high school students.

2) Implementation of this model not only improves students' motivation but also fosters their collaborative and self-directed learning skills.

3) Educators can utilize this approach to devise effective teaching strategies, facilitate seamless instructional practices, and enhance students' overall learning efficiency.

1.5 Scope of the Study

Phase 1: Study the learning motivation of Junior high school students

First through observation literature review and interview with five experts, the researcher got the definition and components of junior high school students' learning motivation. Secondly, to investigate the situation of junior high school students' learning motivation through the researcher's adapted questionnaire.

Population: According to the relevant data released by Wuhan Bureau of Statistics, the current number of junior high school students in Grade 8 in the City of Wuhan is about 2067.

Sample: Researcher used a multi-stage random sampling method, selected Steel City No.2 Middle School from Wuhan City, and 199 students in Grade eight in this school was selected. To test the reliability and validity of the questionnaire, researcher sent out questionnaires and collected 217 valid copies from 369.

Phase 2: Develop the Problem-based Learning Model

Design of PBL was carried out through literature review and interview with three experts. Afterwards, the model was adjusted through experts' suggestions and try out with the ten junior high students who had the same educational background as the research sample. Finally, the final learning model had been formed. In the Chinese social environment, Problem-based Learning Model includes five steps: Problem Posing, Task Allocation, Information Collection, Group Presentation, Comprehensive Evaluation. The researcher developed fourteen teaching planning that used learning strategies and psychological techniques.

Phase 3: Evaluate the Problem-based Learning Model

The improved problem-based learning model was applied to the sample designed for the experimental group, who received this learning model. Meantime, the control group did not receive any learning model during this period. There were three periods: the pre-experimental period, the post-test period, and the follow-up period.

Population: 199 Junior high students in Grade eight from Steel No. 2 Middle School.

Sample: two parallel classes participated in this experiment, each one includes 33 students, with a more equal distribution of male and female students.

Research Variables

The study involves two variables:

the independent variable is problem-based learning model.

the dependent variable is students' learning motivation in English reading.

1.6 Definitions of the Terms

1.6.1 Learning Motivation of Junior high school students

Learning motivation of Junior high school students refers to a kind of internal state that promotes and maintains learner' learning activities, including personal intention, desire, psychological impulse or the goal that they attempt to achieve. Based on the background of junior high school English class, the learning motivation first comes from the students' needs, and external incentives are used as conditions to

motivate students to actively perform in English class, independently complete learning tasks after class, and conscientiously complete relevant English learning activities which are oriented towards certain learning goals.

There are three major components to learning motivation: activation, persistence, and intensity.

1) Activation refers to a decision to start performing certain behaviors. It's a mental arousal that we need a certain level of activation in order to be sufficiently motivated to achieve goals, do good study and so on. Students with high activation are more likely to start learning goals than those with low activation.

2) Persistence refers to the continued effort toward a goal even though obstacles may exist. It's a person's predisposition to persist with the effort to achieve a learning goal, finding the resources to overcome the obstacles, fatigue, stress, and other distractors.

3) Intensity is defined as the strength of the tendency to either approach a positive situation or event or to move away from a negative situation or event. It can be seen in the concentration and vigor that goes into pursuing a goal.

1.6.2 Problem-based Learning Model for Enhancing the Learning Motivation of Junior High School Students

Problem-based learning is a learner-centered learning strategy by allowing students to form a team and work together to solve the scientific knowledge behind the problems. Learners can improve their thinking ability, acquire the skills of independent learning and collaborative learning, and effectively solve problems. The learning mode of this study is constructed on the basis of cognitive theory, constructivism theory and cooperative learning theory. This learning model is divided into five steps: problem posing, task allocation, information collection, group presentation, comprehensive evaluation:

1) Problem Posing. In the pre-reading stage, teacher used various ways to create a real situation related to the reading materials to stimulate students' learning

interests. Through these problems, students' existing knowledge could have a connection with the new knowledge in their cognitive structure.

2) Task Allocation. Students had to discuss and explore problems with other members. After the problems having been presented, students worked in groups to discuss the final answer and produced new problems. During discussion, students became the group leader who organized the discussion and tasks. And teacher played the role as a guide and promoter.

3) Information Collection. The leader in the groups put forward the problem, while the informant collected information from other books or extra reading materials. Meanwhile, the recorder wrote down the group's views and opinions and the reporter showed the final results to the whole class. Students were guided to cooperate with other group members in order to finish their own task.

4) Group Presentation. Each group showed their discussion results to the whole class after analyzing the problems. The presenting group expressed their answers about the questions and also put forward other questions. The other groups were required to take notes and expressed their different views about the reading materials. In addition, the other groups also asked new problems to the whole class.

5) Comprehensive Evaluation. The evaluation included three forms: self-evaluation, peer-evaluation, and teacher-evaluation. Teacher guided students to do self-evaluation and peer-evaluation. Specifically, the criteria of evaluation focused on the learning process instead of the learning results. In addition, teacher offered advice and suggestions for students according to their shortcomings.

1.7 Research Hypotheses

The researcher evaluated the problem-based learning model for enhancing junior high school students' learning motivation. It covered two hypotheses:

1. After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

2. After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

1.8 Conceptual Framework

Problem-based learning is rooted in cognitive theory, constructivism theory and cooperative learning theory. According to the cognitive level and characteristics of junior high school students, PBL constructs learning models from five steps to promote students' learning motivation. It mainly studies and evaluates whether students' motivation can be enhanced from three aspects: activation, persistence, and intensity.

The primary focus of PBL is to prioritize students as the central participants in the learning process. Consequently, in this approach, teachers refrain from directly imparting classroom knowledge to students; instead, they facilitate and encourage student-led exploration of problems within the teaching context and foster the formulation of relevant inquiries. Ultimately, through collaborative discussions and inquiry-based learning, these questions are addressed, and knowledge is acquired.

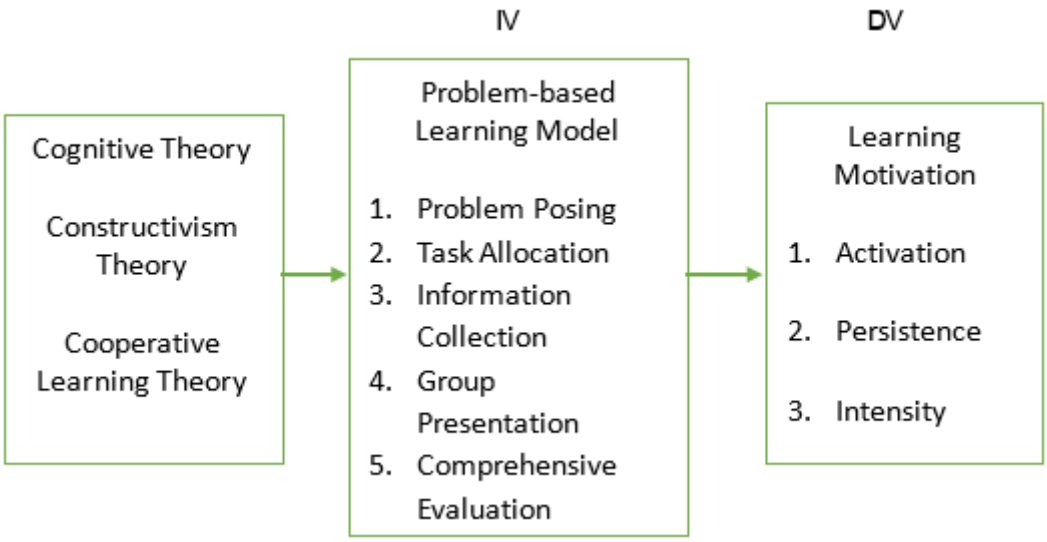

FIGURE 1 Problem Based Learning Model

CHAPTER 2
REVIEW OF THE LITERATURE

The purpose of writing this chapter is to provide an overview of the theoretical basis and previous research that supports the research in this paper. This chapter includes the following content that the researcher has studied:

2.1 Learning Motivation

2.1.1 Definition of learning Motivation

2.1.2 The Importance of learning Motivation

2.1.3 The Classification and Components of Learning Motivation

2.1.4 Measurements of Learning Motivation

2.1.5 Strategies to Promote Learning Motivation

2.1.6 Research Related to Learning Motivation

2.2 Problem-based Learning Model

2.2.1 Definition of Problem-based Learning Model

2.2.2 The Characteristics and Essentials of the Problem-based Learning Model

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2.2.5 Advantages and Limitations of Using Problem-based Learning Model

2.2.6 Research Related to Problem-based Learning Model

2.1 Learning Motivation

2.1.1 Definition of Learning Motivation

The concept of motivation is derived from the Latin term "move," which essentially refers to the impetus behind an individual's actions. In addition to instructional arrangements, it is widely acknowledged that learning outcomes are significantly influenced by learners' level of motivation (Paris et al., 1983). According to Gardner's findings in 1985, language learning motivation encompasses not only the desire and effort invested in acquiring a new language but also maintaining a positive

attitude towards this process. As an intrinsic driver for student progress, motivational factors play an essential role in facilitating effective education. This comprehensive definition comprises three key elements: dedicated efforts directed toward achieving goals; strong aspirations for success; and cultivating a supportive mindset when engaging with linguistic studies. While earlier scholars associated motivations with fulfilling personal needs, contemporary psychologists view it as an intentional choice made by individuals (Maslow, 1954).

Learning motivation is widely regarded as the primary determinant influencing students' academic success(Harmer, 2015), characterized by active engagement and sustained commitment to learning tasks. According to Crookes and Schmidt, a motivated student demonstrates productive involvement in learning activities without constant external guidance or encouragement (Crookes & Schmidt, 1991). According to Pintrich and Schunk, learning motivation can be described as a dynamic procedure that encompasses the establishment of objectives, cognitive and physical exertion, initiation, and persistence (Pintrich & Schunk, 2002).

Consequently, it can be concluded that motivation plays a crucial role in shaping learners' achievements. Madrid elucidates learning motivation as an individual state influenced by various factors such as beliefs, interests, goals, and desires that require students' exertion (Madrid, 1999).

Learning motivation, as defined by Spolsky, refers to the duration of time a learner is willing to dedicate to learning tasks. The level of motivation directly correlates with the extent of investment an individual makes in acquiring proficiency in a second language (Spolsky, 2000). The more time he spends in learning a foreign language, the more he will learn. Ortega Martín proposed an explanation that learning motivation pertains to an individual's inclination towards acquiring knowledge and skills, which can be influenced by both personal factors and external circumstances (Ortega Martín, 2002). Cole defined motivation as the internal state that initiates, guides, and sustains behavior (Cole, 2007). Motivation primarily focuses on the cognitive aspect of individuals' response, such as their enthusiasm for engaging in meaningful academic

activities and deriving benefits from them (Brophy, 2004). Motivation is a force that energizes, sustains, and directs behavior toward a goal (Eggen & Kauchak, 2004). Students with intrinsic learning motivation exhibit attentive behavior during lessons, engage in extensive reading to comprehend the content, and employ diverse supported learning strategies(Batson & Feinberg, 2006). Additionally, they actively participate in learning activities, demonstrate curiosity by seeking relevant sources to enhance their understanding of specific topics, and successfully complete assigned tasks. Learning motivation signifies a student's inclination to participate in training activities and acquire knowledge from them (Garavan et al., 2010). Fostering the motivation to learn is a crucial principle in ensuring the effectiveness of education (Kim & Frick, 2011).

This study will adopt some of these concepts and considerations when defining learning motivation. Learning motivation can be comprehended as the act of encouraging students to willingly dedicate their time actively towards specific activities, fostering not only initiation but also sustained engagement throughout their lifespan. However, these motives are subjective, individualistic, and contingent upon each person's unique circumstances, originating from either internal or external stimuli.

2.1.2 The Importance of Learning Motivation

Learning motivation plays a pivotal role in academic learning and achievement from childhood through adolescence (Elliot, 1988; Elliott & Dweck, 1988). Promoting the inherent inclination of learners to acquire knowledge remains a primary focal point in all educational settings. Numerous research studies have consistently indicated a decrease in both learning motivation and academic performance among a significant portion of students during the transition from elementary school to middle school (Midgley et al., 1989). It has traditionally been assumed that this decline is primarily linked to physiological and psychological changes associated with adolescence and thus considered somewhat inevitable. However, recent studies challenge this assumption by illustrating how the nature of motivational change upon entering middle school depends on specific characteristics within the learning environment where students are situated (Midgley, 1993)."

Motivation to learn plays a pivotal role in academic pursuits, as it serves as the impetus behind students' unwavering determination and unwavering dedication towards every task undertaken. Saeed & Zynger (2012) emphasize that learning motivation is seen as a prerequisite and element of student participation in learning, where this type of learning is not only an end, but also a means for students to achieve good academic outcomes (Saeed & Asghar, 2012). Hence, it is crucial for educators to possess knowledge about the level of motivation among students when it comes to acquiring English language skills, in order to ensure the effectiveness and efficiency of the teaching and learning process.

The learner's motivation in engaging with learning activities enables them to focus on their tasks and experience a sense of fulfillment. Consistent motivation is crucial for maintaining learners' concentration during lessons. When individuals are motivated, they naturally feel satisfied, which contributes to their personal growth. Moreover, motivation plays a pivotal role in shaping learners' objectives and influencing the decisions they make. For instance, it influences whether students choose to join an art club or a science group, participate in a school singing contest during the week, or complete an English assignment due the following day.

Learning motivation holds significant influence within educational settings, impacting the success of students' acquisition of knowledge. Whether learners possess motivation determines their level of accomplishment during the process of acquiring new information. This crucial element extends beyond academia into various aspects and stages throughout our lives; it serves as a fundamental driving force behind human endeavors. Often referred to as the core essence that fuels education's progression, learning motivation acts as both a pathway towards enlightenment and a catalyst for growth (Suryani & Widhiyanto, 2023).

Learning motivation holds immense significance in all aspects of life and various stages of endeavors. Our accomplishments and triumphs are contingent upon motivation. It consistently exists, in one way or another, as the foundation for all human undertakings. Motivation has emerged as a pivotal concept in both educational and

psychological research, playing a crucial role in numerous theories concerning human development and learning.

In the field of education, the level of motivation for learning is influenced by individuals' goal-setting tendencies, which in turn impact their willingness to exert effort towards achieving those goals. When motivation is lacking, learners may encounter difficulties in acquiring new knowledge and skills due to a perceived lack of necessity (Filgona et al., 2020). Consequently, learning motivation plays a pivotal role in providing learners with the necessary drive and determination to successfully accomplish tasks. It helps cultivate an optimal mindset for acquiring knowledge and directs one's focus and energy towards the specific activity or subject matter at hand. Ultimately, learning motivation determines whether students approach tasks – even challenging ones – with enthusiasm or apathy. On a final note, In the teaching and learning process, students' learning motivation is a key factor for success in education and future life but is often overlooked by educators. The variable of motivation has a subtle effect on student learning. If a large number of students are not motivated to learn, then efforts to improve teacher quality and effectiveness are ultimately unlikely to improve students achievement. Therefore, understanding how the goals, types, and dimensions of each type of motivation affects learning will enable teachers and educators to better assist and support students who struggle with learning over time. The role of teachers in motivating students to learn cannot be overemphasized.

2.1.3 The Classification and Components of Learning Motivation

2.1.3.1 The Classification of Learning Motivation

As for the diversity of definitions of learning motivation, different scholars have different perspectives on the classification of motivation: (1) Instrumental motivation and integrative motivation; (2) Intrinsic motivation and extrinsic motivation; (3) Surface motivation and deep motivation.

Based on the information provided by Gardner and Lambert, learning motivation can be categorized into two types: instrumental motivation and integrative motivation (Gardner & Lambert, 1972). Instrumental motivation emphasizes the

importance of achieving specific goals in acquiring foreign language knowledge, such as enhancing future employment prospects and pursuing further studies through language learning. This type of motivational approach is characterized by selectiveness rather than persistence. For integrative motivation, the learning goal of students is able to effectively integrate into the foreign language community system, expect to have effective communication with other members, and strive to become a member of the community. Both integrative motivation and instrumental motivation have an important impact on foreign language learning.

Based on the Self-determination Theory (SDT) introduced by Deci and Ryan, there are two classifications of learning motivation: intrinsic motivation and extrinsic motivation (Deci & Ryan, 1985). Intrinsic motivation pertains to participating in activities purely for the pleasure derived from the activity itself, without any evident external incentives. On the other hand, extrinsic motivation involves seeking rewards or incentives from outside sources. Santrock also mentioned that extrinsic motivation is often influenced by external factors such as rewards and punishments, serving as a means to achieve goals (Santrock, 2007). Students who are extrinsically motivated tend to put in minimal effort required to obtain maximum rewards (Afzal et al., 2010). To enhance students' intrinsic interest, providing them with options and opportunities for personal responsibility in their own learning can be beneficial. When students have a strong inherent drive towards a particular activity, external factors can complement their intrinsic motivation effectively. According to M. K. U. REHMAN, S. SHAHZAD and S. KHAN, motivating students can potentially enhance their learning outcomes (REHMAN et al., 2016). The distinction between intrinsic and extrinsic motivation has played a significant role in motivation studies, with researchers utilizing these concepts to explain variations in motivation among different learners. In terms of drive theories, VanLier (1996) defined intrinsic motivation as certain inherent psychological needs within individuals (Van Lier, 1996). Intrinsic motivation refers to the desire to engage in an activity for its own sake (Eggen & Kauchak, 2004). It is worth noting that it is the learning process itself that fosters intrinsic motivation. These perspectives offer encouragement

to language instructors, especially when faced with students who lack inherent internal motivation in the classroom environment. As educators of language, our goal is to maximize the stimulation of students' inner drive while utilizing external rewards to tap into the productive forces of intrinsic motivation. The use of external incentives may potentially steer students towards adopting a surface-level approach (Watkins et al., 2002). This occurs when students prioritize their performance and the perceived worth or importance attached to the final outcome.

According to Eggen and Kauchak, extrinsic motivation refers to engaging in an activity with the intention of attaining a desired outcome (Eggen & Kauchak, 2004). In this context, students who are extrinsically motivated perform tasks in order to obtain rewards such as graduation or passing exams, or to avoid penalties like failing grades. Extrinsic motivation is not driven by the process itself but rather by the potential benefits derived from completing an action. Simultaneously, both intrinsic and extrinsic motivations influence learning motivation among junior middle school students; however, extrinsic motivation tends to exert a more pronounced impact. Key forms of intrinsic motivation include curiosity, thirst for knowledge, interest, and competition; while key forms of extrinsic motivation encompass immediate incentives, reinforcement attraction, yearning for peer recognition and admiration. Motivation was classified into deep motivation and surface motivation as well by Newstead & Hoskins (Newstead & Hoskins, 2003) based on the stimulus response theory in the field of behaviorism psychology. The former means motivation induced by deep non-material stimuli, while the latter means motivation induced by superficial material stimuli. The latter is less persistent than the former, which is due to the short-term effect of superficial material stimuli. If such stimuli are stopped, the corresponding motivation cannot exist.

In conclusion, learning motivation is the most important driving force in the learning process, which affects the efficiency of learning, helps learners to realize their goals, and generates positive learning enthusiasm and continuous motivation. Learning motivation can improve the speed of learners to achieve their goals, guide learners to a suitable learning path, and establish a good learning attitude. In foreign

language teaching, teachers should try to mobilize students' intrinsic motivation so as to fundamentally change their intrinsic motivation, which will also become an effective guarantee for long-term English learning activities. It can also stimulate the potential of learners and encourage students to persevere and strive for it. With learning motivation, students will actively accept lessons, carefully study the material, and persist in using learning strategies to gain more knowledge and acquisition.

2.1.3.2 The Components of Learning Motivation

According to the proposal by Harlen and Deakin-Crick, the motivation to acquire knowledge encompasses various aspects, including exertion, objective direction, perception of control, belief in one's abilities, self-perception as a learner, confidence in oneself, self-control, and curiosity (Harlen et al., 2002). Effort can be defined as the level of determination one exhibits in persisting with a task. According to the research conducted by Meece, Blumenfeld, and Hoyle, goal orientation pertains to the behavioral intentions that impact students' approach and involvement in educational tasks (Meece et al., 1988). Wentzel defines goals as the sought-after accomplishments that students aim for in their academic or social courses (Wentzel, 1993). Locus of control pertains to the extent to which individuals feel they have control over their own learning rather than being directed by external factors such as teachers, parents, or societal pressures. It is preferable for learners to take ownership of their learning and view assessments as opportunities for growth, as suggested by Konold, Miller, and Doris (Konold et al., 2004). In other words, students should develop effective strategies to enhance their performance. While learners may receive support in developing these strategies, it is crucial for them to assume responsibility for their own learning activities. Self-efficacy involves judgments about one's ability to organize and execute actions necessary for dealing with situations that are often ambiguous, unpredictable, and stressful (Bandura & Schunk, 1981). Covington offers valuable insights on how to improve one's self-perception as a learner through intrinsic motivation (Covington, 2000). According to Covington, there are three circumstances that increase the likelihood of learners appreciating their acquired knowledge and finding pleasure in the

learning process. Self-esteem holds significant importance among various factors influencing learning motivation due to strong evidence supporting its positive correlation with academic achievement and school success among students (Nichols & Utesch, 1998). According to Marsh, higher levels of self-esteem contribute to greater academic success (Marsh et al., 2003). Additionally, enhancing learning motivation can be achieved through mechanisms like self-evaluation which fosters intrinsic motivation. When learners have control over progressing towards their next challenge, it aids in developing confidence and preventing failure (Jalongo, 2007). Covington's research in 2000 also highlights how personal interest and intrinsic motivation are interconnected; he proposes that this type of motivational drive stems from the satisfaction gained by conquering personal challenges or exploring subjects aligned with individual interests (Covington, 2000).

According to Ryan and Deci, learning motivation plays a central role in biological, cognitive, and social regulation (Ryan & Deci, 2000). They proposed that motivation encompasses the drive, orientation, endurance of engagement, as well as purpose. It implies that human behavior can be predicted by considering goals and motives, highlighting a connection between intentions, motivations, and behavior. Goals can stimulate arousal, facilitate discovery, and lead to the emergence of strategies for goal attainment (Locke & Latham, 1990). However, the intensity of activation depends on the strength of motivation. If motivation is weak or if a task is perceived as difficult or undesirable it may not translate into actual action. These inquiries give rise to three crucial aspects of motivation: initiation of action, selection-direction in pursuing goals, and readiness to respond (Perwin, 2003). The major components of learning motivation encompass activation, persistence, and intensity (Sandhu, 2020). Activation entails the decision-making process to initiate a behavior; persistence denotes the sustained effort directed towards achieving a goal, while intensity manifests as the unwavering pursuit of goals. In the past, researchers have focused on investigating learning motivation to address three main inquiries: what triggers an individual's engagement, what influences

their decision-making process between various behaviors, and why individuals exhibit diverse responses to identical motivational stimuli.

Bandura and Walters offered a perspective that combines cognition and motivation, presenting motivation as a multidimensional concept that includes choosing between different options, the level of effort exerted, and the determination to continue striving (Bandura & Walters, 1977). Schiefele and Rheinberg provided further insight into the interaction between motivation and cognition (Schiefele & Rheinberg, 1997). They argued that motivation can influence three aspects of learning: (1) the frequency and duration of learning activities; (2) the manner in which learning activities are performed; and (3) the learner's motivational and functional states during learning. These three aspects formed the framework within which we explore variables that may mediate how initial motivation impacts performance. Learning motivation influences persistence: when learners have sufficient time for learning, highly motivated individuals tend to spend more time or engage more frequently with the learning task compared to those with low levels of motivation (Atkinson & Raynor, 1974).

The learning motivation of students to persist is also influenced by their perceptions regarding the value of the content they are required to learn. While there is ongoing debate about what constitutes value, the fundamental issue remains clear: students need to recognize that the content they are expected to learn is of high quality and relevance to their current and future concerns. This recognition will justify their investment of time and effort (Tessema et al., 2012). As evidenced by Kahu, Nelson, and Picton (Kahu et al., 2017) in their study. It is only when students perceive this value that they will be motivated to actively engage with the material in ways that promote learning and persistence. Comprehending the degree of behavior's intensity is crucial in acquiring knowledge about the impact of motivation on actions. Bay and Daniel (Bay & Daniel, 2003) proposed a goal hierarchy framework, positing that variations in motivational intensity are indispensable for the successful implementation of a goal. The intensity of learning motivation can be defined as the immediate level of stimulus that drives an individual towards action. While the degree of motivational stimulus

encompasses the total amount of effort one would invest in fulfilling a goal, which may span across time, intensity signifies its magnitude at any given moment. When instrumental behavior provides means to gauge and regulate exerted efforts, it is anticipated that motivation's intensity will exhibit a direct correlation with its potential impact.

2.1.4 Measurements of Learning Motivation

There exist numerous tools for assessing students' motivation to learn, but the majority of them primarily focus on measuring learning motivation based on a singular theoretical framework.

In the field of education, just like in other aspects of life, learning motivation plays a vital role in students' performance. Vallerand and Blssonnette introduced the Academic Motivation Scale (AMS) as a tool for assessing Self Determination Theory (Vallerand & Blssonnette, 1992). This instrument was groundbreaking as it examined the three distinct components of motivation proposed by self-determination theory. The concept categorizes academic motivation into three tiers – inherent, external, and lack of motivation. The AMS has demonstrated its reliability in assessing and analyzing levels of motivation among students at the elementary, secondary, and undergraduate levels. In 1992, Vallerand developed the AMS with the aim of addressing the lack of comprehensive instruments that could be universally applied across diverse student populations.

Other measurement tools have been created in an attempt to assess internal motivation, but they have not achieved the same level of recognition as the Academic Motivation Scale. One example is Finney's version of the Achievement Goal Questionnaire (Finney et al., 2004), which builds upon Elliot and McGregor's original measure from 1999 (Elliot & McGregor, 1999). The purpose of the AGQ is to assess four different motivational processes, namely: mastery approach, avoidance of mastery, approach to performance, and avoidance of performance. Recent research conducted by McCollum and Kajs supports the validity of the AGQ, indicating that older students enrolled in an educational leadership program exhibit higher levels of internally

motivated learning through a mastery-oriented perspective (McCollum & Kajs, 2007). Similarly, other scales like Archer's Mastery, Performance, and AGQ have not garnered the same acceptance and validation as the widely recognized Academic Motivation Scale (Archer, 1994). Nonetheless, these newly developed assessment tools have significantly enhanced credibility within motivation research by providing accurate means for evaluating individuals' motivational tendencies.

The Student Motivation Scale (SMS) is a comprehensive tool that integrates multiple theoretical perspectives and assesses various dimensions of motivation to capture its multidimensional nature. The SMS evaluates six factors that enhance motivation, including self-confidence, appreciation for education, focus on learning, effective study habits, planning and monitoring skills, and perseverance. It also identifies four factors that hinder motivation: anxiety, lack of control, fear of failure, and self-sabotage/self-handicapping. Over time, the SMS has undergone refinement in terms of its psychometric properties based on initial data analysis conducted by Martin, while its conceptual framework was further elucidated in a previous publication (Martin, 2012). Additionally, an additional subscale has been incorporated into the scale while reducing and refining items within each subscale. Furthermore, data from over 2,000 additional students across a more diverse range of Australian high schools have been collected. Consequently, the examination of this data demonstrates the robustness of the SMS's psychometric properties and underscores its practical utility in identifying groups of students who may be at risk of disengagement or underachievement due to lack of interest.

The development of the Motivated Strategies for Learning Questionnaire (MSLQ) began in 1986 and has since undergone formal refinement. This questionnaire is grounded in a cognitive perspective on motivation and learning strategies, serving as a self-report tool specifically designed to evaluate the motivational orientations of college students. In our study conducted at the University of Michigan, Pintrich and Garcia utilized these initial instruments to assess the efficacy of our “Learning to Learn” course (Pintrich & Garcia, 1994). Essentially, The Motivated Strategies for Learning

Questionnaire (MSLQ) consists of two primary scales, namely motivation and learning strategies. It is further divided into six subscales comprising a total of 31 items that pertain to beliefs regarding goals, skills, and test-related anxiety. The scale assessing learning strategies is constructed based on nine subscales encompassing a total of 50 items that evaluate cognitive strategies and resource management abilities. Although MSLQ is aimed at college students, the measurement parts that contain are also important components of most learning motivation measurements. For instance, according to the Learning Motivation Scale, there are various factors that contribute to motivation: (1) components related to value (such as intrinsic goal orientation, extrinsic goal orientation, and task values); (2) components related to expectations (including control beliefs and self-efficacy for learning and performance); and (3) emotional aspects (like test anxiety). Although the MSLQ has been widely used to measure students' motivation, researchers have raised questions regarding its length and several problematic statements (Hands & Limniou, 2023). The Diversity of Strategies for Motivation in Learning (DSML) measure demonstrates strong predictive capabilities for both academically successful and unsuccessful students, making it a valuable tool for quickly monitoring students' learning motivation and study skills. While the DSML has been effective in various interventions, further examination is necessary to assess its applicability across different cultures, languages, and educational settings such as schools and colleges. In comparison to the MSLQ, the DSML questionnaire focuses on investigating student motivations with greater clarity to support blended learning initiatives (Bowden et al., 2021). It comprises six factors that evaluate self-regulation, self-efficacy, source diversity, study strategies, test anxiety, and course utility. Given the close relationship between student engagement and motivation, these six elements can be integrated into widely used frameworks for measuring cognitive, affective, and behavioral dimensions of engagement (Haverıla, 2012). This concise proposal for a questionnaire showed promise in facilitating research on the levels of student engagement and academic performance (Limniou et al., 2022). To assess the reliability, validity, and one-dimensionality of the recently proposed DSML measure, both

exploratory and confirmatory factor analyses were conducted. The findings from this study confirmed that the three dimensions encompassing six factors offer a comprehensive overview of students' thoughts, motivations, and behaviors (Limniou et al., 2022). Additionally, the inclusion of 24 items in the questionnaire yielded a dependable and valid measurement scale that effectively gauged students' learning behaviors, predicted outcomes, and guided targeted interventions for underperforming students. Rahardjo and Pertiwi researched on learning motivation, Using a simple random sampling method, 84 students were selected as the research sample (Rahardjo & Pertiwi, 2020). The authors used Likert scales and descriptive statistics via SPSS. The data analysis results show that the correspondence ratio between the learning motivation and English performance of the second-grade students of Xidu Azuo Vocational School is 0.22. Through the Pearson correlation table, it can be seen that the students' explanatory ability is low. The range of the table is 0.200 – 0.400. Based on the statistical analysis, the authors concluded that there is a significant correlation between motivation and academic performance.

The English learning motivation questionnaire compiled by Yihong Gao et al. includes seven aspects: intrinsic interest, achievement, learning situation, going abroad, social responsibility, personal development and information media motivation (Yihong et al., 2007). Their Cronbach's α coefficients were 0.854, 0.798, 0.835, 0.787, 0.728, 0.860 and 0.626, respectively. There were 29 questions in the questionnaire. Because the reliability of the information media motivation scale did not reach 0.7, the subsequent analysis did not include the information media motivation. The confirmatory factor analysis results of the aforementioned motivation scales indicated that the x2/df goodness of fit index was below 2.5, RMSEA was less than 0.08, GFI and CFI exceeded 0.9, and the standardized factor load ranged from 0.45 to 0.89 with statistical significance. This scale demonstrates maturity and exhibits strong content validity.

Rakasiwi and Muhtadi conducted a pilot test, an initial field test, and a field test using a questionnaire in order to observe the increase in learning motivation after the use of educational games (Rakasiwi & Muhtadi, 2021). In the field test,

assessments are made using student-response questionnaires and hands-on field tests. Ten questions on cube and block materials and five descriptive questions were used for the pretest and posttest to observe improvements in student learning outcomes. Once the students completed their learning activities, they were asked to fill out a questionnaire regarding their motivation to learn. The findings indicated that the use of educational games had a positive impact on the students' learning motivation.

2.1.5 Strategies to Promote Learning Motivation

Generally speaking, teachers can have much influence on increasing student motivation to learn by using strategies. Although sometimes it may seem that teachers have little control over student motivation, research has shown that teachers can influence student motivation at all ages (Anderman & Midgley, 1998).

2.1.5.1 Attention-Getting Strategies

One crucial aspect of attention is its opposite, commonly referred to as ennui (Kopp, 1982). When it comes to capturing and maintaining attention, we are dealing with human traits such as the orienting reflex, inquisitiveness, and the pursuit of sensation. Although each of these areas represents a distinct field of study, they all share a common concern for factors that influence the duration of focus. Regardless of how engaged students may initially be in a class, it is possible to induce boredom if sufficient effort is made. To prevent this state from occurring, there exist specific types of activities that can be employed and they tend to fall into three categories: perceptual stimulation; inquiry stimulation; and variability. Perceptual stimulation corresponds to one form of curiosity (Berlyne, 1962). In order to sustain attention further, a deeper level of curiosity can be triggered by creating problem scenarios that can only be resolved through knowledge-seeking behavior. Kaplan have demonstrated how curved paths disappearing behind obstacles or partially revealed objects can elicit curiosity and encourage exploratory behavior (Kaplan, 2010).

2.1.5.2 Relevance-Producing Strategies

In its broadest sense, relevance refers to the factors that we perceive as essential for meeting our needs and fulfilling personal desires, including achieving

personal objectives (Keller, 1983). A proficient educator can establish connections between the subject matter and the learner's requirements, preferences, and aspirations. This can be done by providing instances or illustrations of how the instruction is useful and by either presenting goals or allowing learners to define them. Enhance familiarity with materials and concepts by offering tangible examples and comparisons related to the learners' professional tasks. Addressing people's perceived needs, which may or may not align with their actual needs, is a fundamental principle for organizational success, as well as being crucial in learning and instructional settings (Sperber & Wilson, 1986).

2.1.5.3 Confidence-Building Strategies

The opposing forces of the fear of not succeeding and the allure of accomplishing goals greatly impact one's motivation. These factors have been extensively examined in various studies, as evident in the extensive literature on variables related to personal control and its antithesis, helplessness (Keller, 1983). The establishment of trust and positive expectations can be facilitated by elucidating the requirements and evaluation criteria for achieving success. Simultaneously, offering diverse and challenging experiences can enhance confidence in the attainment of learning objectives. Furthermore, empowering individuals with control over their own learning process and providing feedback that attributes success to personal efforts contribute to this endeavor.

2.1.5.4 Satisfaction-Generating Strategies

Employing a blend of motivational and developmental feedback, as outlined by Tosti (Tosti, 1978), yields significant efficacy. Moreover, the utilization of certificates and accolades serves to externally acknowledge achievements. In such instances, employing a combination of affirmative reinforcements and external incentives proves advantageous. The first step is to provide problem simulations or work samples, allowing students to engage in solving "real world" problems. During this process, it is essential to acknowledge and reward their success through verbal praise, tangible or symbolic incentives, as well as by encouraging them to demonstrate the

outcomes of their efforts. Ultimately, it is crucial to align performance requirements with established expectations and consistently measure tasks and achievements for all learners. The ultimate stage in the process of motivation involves generating contentment, thereby ensuring a sustained drive to acquire knowledge and encouraging individuals to recommend the course to others.

2.1.5.5 Reflective Journal Writing (RJW)

The practice of utilizing a Reflective Journal Writing (RJW) has been widely adopted in educational settings as an effective approach to fostering both intrinsic and extrinsic motivations among learners. Its implementation has been prevalent for numerous decades across the globe. The advantages of RJW are evident, particularly in terms of enhancing motivation levels in learners through its application (Young et al., 2014). A RJW serves as a diary-like tool that enables learners to regularly document their thoughts, experiences, and ideas. The primary objective of employing RJW is to establish connections between current knowledge and previously acquired knowledge while also facilitating personal engagement with the subject matter being studied. By encouraging reflective thinking habits, RJW facilitates meaningful dialogue between learners and instructors where they can jointly analyze their thought processes and engage in self-reflection. Students' written responses to reading materials serve as valuable indicators of their ability to derive meaning from texts.

He also adds that this writing process can reflect a variety of types of writing and the extent to which the indicators are related to the tasks assigned in the prompt (Chapman, 1990).

2.1.5.6 Project-based Learning (PBL)

Based on Dewey's philosophy of empiricism, project-based learning is an approach in which students learn to solve problems through activities that involve in-depth study of assigned projects. PBL is characterized by meaningful activities, learning, collaborative decision-making, and a shift in the role of the teacher(Harlen et al., 2002). In project-based learning, students work with each other to solve challenging and authentic problems, and group activities play an active role in collaborative decision

making and problem solving among members. In such a setting, teachers and students need to assume different roles from what they are used to. Project-based learning allows students to independently identify complex real-world problems, devise solutions for them, and engage in collaborative research to ultimately resolve these issues. Through project-based learning, students can utilize their technological skills not only to enhance language proficiency but also to foster teamwork and collaboration in order to achieve predetermined educational goals. Chang and Lee (Lee, 2010) argue that collaborative projects enable students to grasp fundamental concepts by applying contextual knowledge. In addition to these strategies for increasing motivation, the following additional strategies are adapted from Brophy (Brophy, 2003) for building students' motivation: (1) Generation of curiosity. Induce curiosity by using activities that create discrepancies between their beliefs and expectations, students have an inner need to reduce the inconsistency. Use the joy of discovery by giving students information and asking them to find problems and develop hypotheses. (2) Build on internal motivation. Students are motivated by both intrinsic and extrinsic motivation. Intrinsic motivation is maximized when tasks are adequately but not too challenging, and when students have real choices in what and how they learn. (3) Expectations of learning motivation. Both the anticipation of success and the significance of the task play a crucial role in forecasting student motivation. One effective approach to enhance the importance of a task is by assisting students in establishing links between what they will be learning and its relevance and personal value to them.

In conclusion, for the aforementioned strategies to be fully effective, it is crucial to ensure students' active participation right from the start. Unfortunately, many educational institutions are still hesitant to embrace this approach. Numerous educators perceive interactive classes as time-consuming and demanding, often failing to align with the curriculum design. Once again, this reinforces the notion that learner involvement should be enhanced at a higher level when it comes to syllabus or curriculum development. Students should no longer rely on teacher-driven classrooms,

but on other means, such as problem-oriented classroom activities, as a way to promote independent and diverse learning strategies.

2.1.6 Research Related to Learning Motivation

In 2016, Guo from Hangzhou Normal University conducted a study “The Effectiveness of the Problem-Based Learning one the Self-Directed Science Learning Readiness and Science Learning Motivation of Seven-Grade Students” which participation were two classes of Grade Seven in Junior High school. The purpose of this study is to explore the influence of PBL (Problem-Based Learning) teaching on 7th grade students' self-directed science learning tendency and learning motivation. The quasi-experimental study employed the design of 'unequal pre-test and post-test control group'. Additionally, the researchers utilized the Self-Directed Science Learning Readiness Scale, Science Learning Motivation Scale, and a semi-structured interview outline. The quantitative data were analyzed by statistical description, independent sample t-test and qualitative material analysis. The results show that PBL teaching has a significant effect on the improvement of 7th grade students' science self-directed learning tendency. (P=0.004). However, PBL teaching had no significant effect on the improvement of seventh grade students' science learning motivation. (P=0.147)

Adamma et al. (Adamma et al., 2018) investigated a study in the topic “Influence of Extrinsic and Intrinsic Motivation on Pupils Academic Performance in Mathematics”. The primary objective of the study was to investigate how extrinsic and intrinsic motivation impact the academic achievement of students in mathematics. To collect data, two tools were employed: the Academic Motivation Scale (AMS), which comprises 28 items, and a Mathematics Achievement Test (MAT). The results showed that there was gender difference on the variable of extrinsic and intrinsic motivation on academic performance. On the contrary, females exhibited lower levels of extrinsic motivation compared to males. One potential interpretation for these results could be that societal expectations traditionally place a greater emphasis on males as the primary earners in families(Buendía & Ortega-Martín, 2018).

In order to explore the learning motivation and behavior of Muslim junior high school students in Nongchok District, Bangkok, Thailand, Chunsuvimol et al. adopted a descriptive research method in the study "Attitude, motivation and learning Behavior of Junior High School English Learning: Thai Muslim Students in a school in Bangkok"(Chunsuvimol et al., 2021). The researchers collected data from a sample of 164 male and female students. The questionnaire was designed to elicit data on the sample's attitude, motivation, and English learning behavior. The data analysis pointed out that the sample of Thai Muslim students in junior high school at a school in Bangkok had the highest attitudes towards English in several aspects.

With the research topic "Contemporary American Literature in Online Learning: Fostering Reading Motivation and Student Engagement", a quantitative analysis was conducted by Li Gao to determine the impact of online learning courses in contemporary American literature on student motivation and engagement (Gao, 2023). The sample consisted of 126 students from Yulin High and New High School. The Reading Motivation Questionnaire (MRQ) designed was used to assess student motivation and engagement, which was divided into five parts: the motivation part includes self-esteem, extrinsic motivation, intrinsic motivation and social reasons, the fifth block describes engagement. (Eccles & Wigfield, 1995). SPSS statistical software and Microsoft Excel were used for statistical analysis and data presentation. The t-test that relied on student data was utilized to assess if there were any alterations in the reading motivation and engagement of students following the experimental class. The results indicate that while students possess a keen interest in becoming avid readers, their primary driving force is extrinsic motivation. In the wake of the COVID-19 pandemic, the learning process shifted from online to face-to-face again (Eccles & Midgley, 1989). In 2023, Langgar et al. conducted research called “The Study of Learning Motivation Analysis during COVID-19 Online Learning and Post COVID-19 Offline Learning”. A causal comparison, descriptive and quantitative research method were adopted to investigate the learning motivation of online learning and offline learning, and to compare the learning motivation of students in online learning and

offline learning. The study utilized primary and secondary data as the sources, employing motivational learning questionnaire sheets for data collection. The research employed a descriptive quantitative analysis technique. Findings indicate variations in students' learning motivation between online and offline learning approaches, with offline learning demonstrating higher levels of motivation compared to online learning. To investigate the impact of various learning strategies on learning motivation in augmented reality (AR) multimedia and traditional text-based learning, Zhao et al. conducted a study “The Influence of Different Learning Strategies on Pupils’ Learning Motivation: Is Augmented Reality Multimedia Learning Consistent With Traditional Text Learning?” (Zhao et al., 2022). The study employed an inter-subject design involving 60 third-grade primary school students. Two types of learning materials (AR materials and text materials) were combined with three different learning strategies (relearning strategies, retrieval practice strategies, and self-created drawing strategies). The questionnaire utilized was an adapted version of Jia et al.'s revised Learning Process Questionnaire based on Biggs' framework (Jia et al., 2015). Findings revealed that students in the relearning strategy group exhibited higher levels of achievement motivation compared to those in the retrieval practice strategy group (with marginal significance). Retrieval practice strategy displayed positive significance in fostering students' deep motivation. Moreover, it was noted that the utilization of diverse learning modalities and tactics influenced the level of motivation to achieve.

2.2 Problem-based Learning Model

2.2.1 Definition of Problem-based Learning Model

In 1996, Barrows, a neurology professor from the United States, introduced problem-based learning at McMaster University School of Medicine in Canada.(Barrows, 1996) The book Problem-Based Learning: An Approach to Medical Education wrote by Barrows and Tamblyn stated that the essence of PBL is learning-centered (Barrows & Tamblyn, 1980). From Collins et al. point of view, PBL is a solving process, students and teacher cooperate to solve particular problems, among which process students are the key persons to find out the solutions of the problems (Collins et al., 2018). According to

Barrows and Kelson, distinguished authorities in the field of PBL at Southern Illinois University, School of Medicine, PBL is described as a comprehensive educational approach encompassing both a process and a curriculum (Barrows & Kelson, 1993). Maudsley (1999) defines PBL is a teaching philosophy as well as a teaching method that students learn from cooperating and solving problems (Maudsley, 1999).

Professor Woods and Professor Learning thought that in PBL, the problem promotes learning which means that before students begin to meet a new knowledge point, they will meet a problem learning firstly (Woods & Learning, 2000). Hence, students can know what new knowledge they should learn before solving the problem. Many of the PBL principles are common to those of problem-based learning. The problem-oriented methods, however, appear to require the acquisition of up-to-date information and the significance of the solution may be overshadowed by the knowledge gained during its attainment (Prince & Felder, 2006). Moreover, Taylor & Miflin hold the same view who considered PBL was a teaching method that challenged students to learn and encouraged students to find a way to solve problems by cooperating in a group (Taylor & Miflin, 2008).

As stated by Cheong, PBL is an educational system that encompasses various complementary strategies and approaches to maximize and improve student-centered learning outcomes, going beyond mere acquisition of knowledge (Cheong, 2008). Just as the statements of Pepper, the reason why PBL is applied to teaching is for students' need for deeper learning (Pepper, 2009). He systematically analyzed the students' learning needs through a series of experimental studies by putting PBL into practice and concluded the students' high recognition of PBL. Stanley & Marsden held the opinion about PBL that teachers should provide an ill-structured problem before students receive education(Stanley & Marsden, 2012). In the whole learning process students would explore the problem deeply, find out the relationship related to other problems, analyze the complexity of the problems, use knowledge and form the solutions to solve the problems.

In the mid-1990s, PBL was introduced to China, and the definition of PBL in China was basically based on the foreign model with some adjustments to meet the current situation of domestic education development. W. Hung, D. H. Jonassen and R. Liu combines PBL with the domestic primary and secondary school curriculum and believes that the problems are authentic problems designed on the basis of the overall curriculum and knowledge structure system (Hung et al., 2008). These problems that students may face in their daily lives should be in line with the life of the times and the needs of society. Zhang et al. (Zhang et al., 2015) believes that PBL is based on modern teaching theories such as multiple intelligence and constructivism, etc. In PBL, under the guidance of the teacher, the learner is the learning subject, and the problem is the center; the main line is to ask questions, analyze and solve problems; the main learning method are self-exploration and cooperation. It is a new teaching model with the goal of effectively promoting the development of students' problem awareness, teamwork ability and thinking ability. Yew and Goh hold that PBL is a learner-center pedagogical approach that has been widely applied in multiple educational contexts to help students improve their problem-solving skills (Yew & Goh, 2016).

According to the definitions listed, PBL is an effective approach to promoting the simultaneous acquisition of language, content and skills. It involved are complex tasks, driven by tough questions or problems, that engage students in designing, decision making, exploring and problem-solving, give them chances to work both autonomously and collaboratively overextended periods of time, and expect them to turnout their artifacts. All in all, Within the PBL model, learners themselves select topics, reading materials and the way they embark on exploring. They have to put forward original but feasible solutions to these real-world problems, which helps with their creative thinking skills and problem-solving abilities. Evaluation of learning outcomes is made by the teacher, individual students, or groups, which can be teacher-directed or student-determined.

2.2.2 The Characteristics and Essentials of the Problem-based Learning Model

According to Barrows, learners are advised to thoroughly analyze all aspects of the PBL process in order to gain a better understanding of their knowledge, learning outcomes, and performance (Barrows, 1988). Engel outlines the fundamental features of a problem-based curriculum as follows: it should be cumulative, integrated, progressive, and consistent (Engel et al., 1992). The core model of PBL developed by Barrows has been widely applied across various disciplines and comprises seven key characteristics: (1) Students must take responsibility for their own learning; (2) PBL requires the use of ill-structured problem simulations that encourage free inquiry; (3) Collaboration is crucial; (4) A comprehensive examination of the knowledge acquired through addressing the issue and active engagement in discussions pertaining to the assimilated concepts and principles is imperative; (5) Self-evaluation and peer evaluation should be conducted following the resolution of each problem, as well as upon completion of every curricular unit; (6) The activities carried out in PBL should align with real-world values; (7) Student evaluations should measure progress towards PBL goals. Each essential characteristic has been briefly expanded upon to provide additional information and resources (Barrows, 1996).

In order to ensure that students are effectively benefiting from the Problem-Based Learning (PBL) approach as intended, it is imperative to regularly assess them on both dimensions. Bransfor & Cocking also acknowledge the paramount importance of transferring skills acquired through PBL to real-world situations (Bransford et al., 2000). Students bear responsibility for comprehending and articulating their knowledge and learning by actively engaging with problems in the curriculum. Savin-Baden proposes six dimensions of PBL, emphasizing how knowledge, learning, and student roles are conceptualized and manifested in the curriculum (Savin-Baden, 2000). According to this argument, 'the problem' and 'the information gained' serve as key variables in PBL. Silver defines PBL as an instructional method where students learn by solving complex problems without a single correct answer under facilitation (Hmelo-Silver, 2004). Collaborative groups enable students to identify their learning needs,

engage in self-directed learning, apply new knowledge to solve problems, reflect on their learning process, and evaluate the effectiveness of employed strategies.

In China, Y. Zhang, L. Zhou, X. Liu, L. Liu, Y. Wu, Z. Zhao, et al. summarizes the characteristics of PBL as follows: Firstly, it emphasizes the learners' construction of knowledge, cultivates the ability to find and solve problems, and enhances the strategies and abilities of independent learning (Zhang et al., 2015). Secondly, it integrates theoretical knowledge of books and problems from real situation to enhance the quality of learners' thinking and personality. Thirdly, the learner-centered classroom changes the role of traditional classroom teachers, who becomes the organizer and evaluator of activities and the facilitator of student learning. Kuo (2021) believes that PBL has four main features (Kuo et al., 2021). In the first place, learner-centered and autonomic learning is the foundation of PBL implementation. In the second place, problem-solving is the core and source of PBL. In the third place, collaborative and situational learning are the main patterns of PBL. At last, multi-evaluation and dynamic teaching is the basis of PBL.

The challenge many teachers face in adopting PBL pedagogy in our teaching is how to move from being a knowledge mover to a mentor who is a learning manager and facilitator. PBL instruction is not as simple as presenting a "problem" to learners. The fact remains that students who are initially exposed to the PBL approach require substantial instructional support in order to foster the growth of problem-solving abilities, self-directed learning capabilities, and collaborative skills. Problem-based learning should serve as the fundamental educational framework rather than being merely integrated into a traditional curriculum. Finally, PBL refers to the procedure in which students actively construct knowledge, with each individual forming their own understanding by reevaluating and assimilating fresh information based on their existing knowledge and personal experiences. Throughout this process, the learner's initial knowledge is modified and transformed through the absorption of new knowledge, resulting in a cognitive restructuring driven by the conflict between prior and novel experiences.

PBL classrooms exhibit features such as collaborative learning, introspection, and the incorporation of contemporary proficiencies like critical thinking, digital literacy, diplomacy, and effective communication in students' everyday tasks (Hmelo-Silver, 2004). Within this basic framework, students and teachers can adapt activities to showcase and evaluate understanding. To Grant (2002), the key elements for PBL include: an introduction; defining a learning task; investigation procedures; resources; collaboration; scaffolding and reflection (Grant, 2002). Newman reaffirmed the statement made by Barrows, who proposed a set of fundamental principles or guidelines for designing PBL (Newman, 2005). He offers a more practical perspective that can be beneficial for teachers and curriculum development teams. In terms of implementing PBL, there are three crucial components: a case or prompt with a flexible structure that includes relevant links to desired learning content; an emphasis on student-centered learning; and the incorporation of small group cooperative learning.

Arrive at a conclusion, PBL is a student-centered instructional methodology that is being implemented in educational settings, along with other methodologies. Unlike traditional teaching methods, PBL does not prioritize learning the "basic" concepts separately and in an artificial manner; instead, it focuses on integrating basic content within the context of solving real-world problems. It is important for practitioners to have a solid understanding of the foundational principles behind PBL, such as constructivism and situated cognition, in order to effectively design, implement, and enhance PBL environments.

2.2.3 Theoretical Foundations for Problem-based Learning Model

2.2.3.1 Cognitive Theory

As Crookes and Schmidt pointed out, current discussions of learning motivation in second language learning lack validity (Crookes & Schmidt, 1991). This is because it is not rooted in the real context of a second language classroom. Nor is it linked to other educational research." The international student population gains significant advantages by avoiding the restriction to a narrow set of motivational factors, as highlighted in the research conducted by Oxford (Oxford, 1996). This is particularly

crucial in light of extensive research across various fields, which underscores motivation as a complex, diverse, and significant concept. In fact, many cognitive concepts of motivation have been shown to be reasonable and appropriate in general education and in solving educational problems, but unfortunately were not noticed and applied by the Institute of Second Language Learning until the early 1990s. To cognitive theorists, human behavior is primarily determined by thinking. What makes people respond is not external events but their interpretation of these happenings (Woolfolk, 1998). In the cognitive perspective of motivation, students' thoughts orient their motives, which may lead to behavior. Their goals, expectancy, self-efficacy, attribution, and their self-confidence of having control over the environment can explain why they behave the way they do. The point of view fits well with the idea of White, who said that people behave, not because what they do meets biological needs, but because an intrinsic motivation encourages them to effectively interact with the environment (White, 2001). Also, the point of view has led to an instructional shift from teacher-oriented, teacher-assigned modeling with an emphasis on comprehension, to student-initiated, goal-driven, and independent modeling with its emphasis on knowledge building (Scardamalia & Bereiter, 1991).

Stemming from social learning theory formulated by Miller and Dollard, social cognitive theory holds that people learn by observing others, with environment, behavior, and cognition, working as the chief factors to influence development (Dollard & Miller, 2013). These three factors are neither static nor independent; instead, they are all reciprocal. When it comes to Project-Based Learning (PBL), extensive research has been conducted on the impact of contextual factors on cognition, focusing on key aspects such as autonomy, collaboration, scaffolding, and authenticity. Situated cognition studies suggest that learning is most effective when the learning environment closely resembles real-life situations where the acquired knowledge will be applied. Furthermore, investigations into contextual factors have resulted in recommendations for students to actively apply their learned concepts in decision-making and problem-solving scenarios. Instructional approaches should therefore prioritize problem-solving

contexts to enhance retention and practical application of knowledge. This type of learning is also considered more adaptable compared to inert knowledge gained through traditional teaching methods(Boaler, 1998). In this aspect, such PBL's features as exploration, integrativeness, accumulativeness and reflection are highlighted.

2.2.3.2 Constructivism Theory

The most important theoretical foundation for PBL is constructivism, which was originally proposed by Piaget, a Swiss psychologist. Constructivists place their attention on the process of knowledge construction, which involves utilizing previous experiences, mental frameworks, and information. They highlight the active, social, and contextual aspects of learning. According to Piaget's cognitive constructivist approach, learners engage in transforming, organizing, and reorganizing their existing knowledge and information as they construct new understanding (Piaget, 1969). Cole emphasized that cognitive skills have their roots in social relations and students construct knowledge by interacting with others (Vygotsky & Cole, 1978). Constructivism-based learning relates closely to the nature of knowledge, truth and human interaction. Perkins (Perkins, 1991) claimed that individuals actively construct their own understanding and knowledge of the world by interacting with the environments around them, experiencing things and reflecting upon those events. Savery & Duffy believed that the concept of PBL is based upon a constructivist model of human cognition which contends that true knowledge lies in our interactions with the environment, rather than in isolated or decontextualized facts (Savery & Duffy, 1995).

The research was guided by the social constructivism theory, which emphasizes that knowledge is constructed through interaction among individuals. This theory was established by Vygotsky in 1978, suggesting that people develop their understanding of the world through engaging with others. Collaboration and cooperation are key aspects of this theory, as learners have the opportunity to acquire knowledge from their peers. The rationale behind this theory lies in the fact that individuals possess diverse perspectives on the world due to their unique backgrounds. In relation to our study, this theory is suitable because problem-based learning (PBL) necessitates

collaborative group discussions for solving identified issues. According to our findings, PBL requires teaching and learning materials that serve as central resources for problem-solving. Additionally, when implementing PBL, assessment is conducted collaboratively between students themselves and their instructor.

Piaget argued that educators should offer assistance to students in their exploration and comprehension development, while Vygotsky stressed the importance of teachers creating numerous chances for students to learn alongside both the teacher and more proficient peers in knowledge construction (Kozulin, 2000). The social constructivist theory is preferred in this study because it involves a shift from individualism to collaboration and social interaction when transitioning from Piaget to Vygotsky. In essence, the focus of this approach lies in recognizing the importance of social contexts in learning and acknowledging that knowledge is co-constructed through mutual efforts (Bearison & Dorval, 2001). In other words, learners' prior knowledge and experiences are crucial to what they'll learn and how they are able to use it. In one word, constructivism embraces a shift from the transmission model of learning to the experiential model (Nunan, 1988).

To sum up, PBL is a teaching method that is very consistent with constructivist learning theory. There are some similarities between PBL and constructivism. Firstly, both of PBL and constructivism are student-centered. Students have to solve problems through cooperation and analyze problems in group. These problems are put forward and solved by students. Secondly, teacher plays a role of instructor, guider and promoter both in PBL and constructivism theory. Thirdly, both of them stress the process of getting knowledge through participating in problem solving. Teacher should help students develop the habit of solving problems with other group members, connecting their existing knowledge with new knowledge. W. Hung, D. H. Jonassen and R. Liu held as the builders of their own knowledge, learners took the initiative to complete tasks in real problem situations and actively discussed with other members of the group (Hung et al., 2008). Students actively asked questions and thought creatively in the process of completing tasks, constantly building their

knowledge. Therefore, in PBL, the teaching process well reflected the theory of constructivism and its views on knowledge, learning, and teachers and students.

2.2.3.3 Cooperative Learning Theory

Another prominent theoretical basis of PBL is Cooperative Learning Theory, which was first proposed by William Glasser in the 1960s and developed by Slavin and Johnsons in America in the 1970s (Slavin, 1989). Slavin holds that cooperative learning is a system of teaching theories and strategies. A group of students of varying abilities is formed to engage in learning activities in a cooperative supportive manner, working together to accomplish group learning objectives. It improves the overall performance of the group while promoting each individual's learning level. Cooperative learning is a highly effective instructional theory and strategy which is effective in improving the psychosocial climate within the classroom, facilitating students' academic performance on a large scale, and promoting the development of non-cognitive qualities. For students, through cooperative learning, individuals are integrated into the collective, and everything is based on collective interests.

Corden thinks that all kinds of group discussion not only can cultivate students' self-regulation and self-determination, but also can keep their motivation for insistence on the tasks (Corden, 2001). In the teaching, the teacher creates problem situation for students to work in group, which motivates them to change from passive learning to active participation. According to the above description and the previous research on PBL, it is found that group cooperation learning is a major part of the PBL teaching model. In PBL classroom teaching, the teacher group students according to their ability levels and team members in the same group have different ability levels, which is helpful for them to learn from others' strong points and close the gap. In the PBL learning model, students communicate and collect information through group cooperative learning, which makes students move from passive recipients of knowledge to active discoverers of knowledge. Obviously, this stimulates students' interest in learning, enhances students' awareness of problem solving and learning motivation.

In PBL teaching process, the first step is to divide students into some groups. In the teaching process, students are required to discuss with group members, asking and solving problems, which reflects the theory of cooperative learning. Group cooperative learning can promote teaching environment and improve students' learning interest. cooperative theory is one of the most significant theories in PBL teaching. In the process of settling the problems, students' ability of communication and cooperation can be cultivated. Meanwhile, teacher should not only encourage students to discuss, but also give guidance to students during the group collaboration.

2.2.4 The Basic Process of Problem-based Learning Model

Many scholars have proposed different PBL teaching models, such as Barrows' PBL classic teaching model, Schmidt's seven-step teaching method and Eden's cyclic teaching model. Barrows systematically summarized the PBL teaching model: (1) Students should adhere to the main position in teaching, and with the help of teachers, get their own interest in the content, to solve real problems by themselves. (2) Each group has 5-9 students. (3) The teacher is also a guide in teaching and can point out the direction for blind students. (4) The creation and solution of problems are also the motivation for learning. (5) Problems are the carrier for students to master knowledge, learn to consult information, and find solutions to problems in the process of analysis and discussion. (6) Students will take the initiative to learn new content in problem situations and consolidate knowledge through group communication (Barrows, 1996).

Norman and Schmidt summarized the seven-step PBL teaching method through the analysis of his teaching experience: (1) Describe the problem; (2) Clarify the problem and make an accurate definition of the problem; (3) Analyze the problem, encourage students to activate their existing knowledge and experience, and deeply understand the problem; (4) An objective explanation of the problem; (5) Construct learning goals; (6) Collect relevant information through independent learning; (7) Solve problems (Norman & Schmidt, 1992).

Ding Houyin (2023) divides this process into five steps in the integration of PBL and action research. First, divide up groups. Then, start working on the new problem, and from problem solving, the group members should have a common goal. Second, students conduct independent inquiry tasks. Third, in the new problem-solving phase, the team members get together again to exchange and share results and give timely evaluations. Fourth, report learning results. This can not only deepen students' understanding of knowledge, but also provide evidence for teachers. Fifth, reflection and summary, let students summarize what they have learned and share their harvest (Shunsheng & Houyin, 2023).

Qiao Yuling and Guo Liping described the implementation process of PBL in English reading (Yuling & Liping, 2011). The first step is to ask questions. Teachers should possess a clear objective and a strong inclination to present students with self-designed inquiries, enabling them to acquire knowledge through exploration, which is crucial for achieving favorable teaching outcomes. The subsequent stage involves information assimilation. Students gather pertinent data and employ diverse resources outside of class to resolve problems. Each study group should establish distinct roles, with the teacher offering assistance when necessary. Subsequently, it is time for collaborative communication. Group members individually express their progress and comprehension of the issue at hand while being guided by the teacher. Following this, teachers ought to motivate students to continue scrutinizing and exploring in order to enhance their reservoir of knowledge. Lastly, engaging in discussions constitutes the fourth step.

Each group is requested to designate a representative who will deliver a concluding statement regarding the topics examined. At this juncture, it is crucial for the instructor to highlight the essential points of knowledge. The final stage involves assessing students' performance, summarizing the instructional content, and fostering their cognitive framework. It is imperative to commend both groups and individuals who actively engage in classroom activities; teachers should not hesitate to acknowledge students' efforts as this plays a pivotal role in enhancing their enthusiasm for learning.

These sequential actions constitute an extensive PBL cycle that encompasses formulating pertinent learning inquiries up until evaluating comprehensive summaries. Furthermore, through group or class discussions, students identify novel areas of interest which they subsequently explore and deliberate upon, thereby establishing a smaller PBL cycle. This approach effectively stimulates students' thirst for knowledge while bolstering their aptitude for acquiring new information.

Sun Ling and Xu Wenbin (2020) divided the whole teaching process of PBL into five steps: finding problems and determining problem situations; Clarify the issue; Analyze the cause of the problem from multiple angles; Develop problem-solving strategies; Evaluate the problem-solving process. These five steps are both independent of each other and restrictive, forming a balance. They progress step by step in a logical order, and finally form a problem-solving cycle. The PBL teaching experiment was carried out according to the implementation process of Sun Ling, Xu Wenbin, Qiao Yuling and Guo Liping. The reasons are: First, it has strong operability. Second, it conforms to the concept of improving students' thinking quality and learning ability in the new curriculum standards. Therefore, the PBL teaching process in this study consists of five steps. (1) Establish the problem situation; (2) Asking questions; (3) Discuss in groups to form strategies to solve problems; (4) Present results and discuss them in class; (5) Evaluation and summary(Yuling & Liping, 2011).

2.2.5 Advantages and Limitations of Using Problem-based Learning Model

Over time, PBL has expanded its application beyond medical schools to encompass a broader range of practices, subjects, and grade levels (Walker & Leary, 2009). It has been proven to be equally effective as traditional instructional approaches and in numerous studies even demonstrated superiority. For applied linguistics, research on PBL delivers an overall message that the activity in which students and teachers get involved is simultaneously linguistic, cognitive, affective, and social. For instance, studies on suitable PBL design have consistently emphasized the importance of striking a balance between the cognitive complexity and linguistic requirements of tasks involving language learners (Kagan & McGroarty, 1993) as well as prioritizing the

affective and social aspects of classroom interaction ((Dörnyei, 1998). According to Railsback, benefits of PBL include: (1) Teachers often witness increased motivation through higher levels of attendance, participation, and assignment; (2) Learners have more opportunities to construct knowledge collaboratively; (3) Learners use individual learning strengths and various learning approaches; (4) It improves social and communicative skills, especially problem-solving skills; (5) It offers real-world experiences to learn and prepares learners for their future work by cultivating such skills as collaboration, planning, decision making and time management (Railsback, 2002).

When it comes to education, the potential benefits of PBL are substantial. PBL creates “a self-consciously active and reflective learning environment”, which allows learners to choose their own path through a menu of resources and opportunities (Schauble, 1996). With such a model, teachers and students change their old mindset and as a result shun acquiring fragments of knowledge and skills. According to Zumbach et al. (Zumbach et al., 2004), students engaged in a PBL activity acquire not only declarative knowledge but also procedural knowledge. Furthermore, PBL is an authentic form of learning, which prepares students to settle real-world problems in their future workplaces.

In general, problem-based learning has been found to have both advantages and disadvantages according to various studies. Different perspectives may arise among educators and students when considering these pros and cons. For example, while some researchers focus solely on either the teacher's or student's viewpoint (Cheong, 2008), others present their findings separately for each party involved (Utecht, 2003). PBL empowers learners to take ownership of their own education, fostering teamwork skills development (Cheong, 2008). PBL helps develop working skills and problem-solving skills within group and build a positive manner and motivation as well. (TATAR et al., 2009)

PBL may present challenges for teachers as they adapt to new teaching styles. Additionally, students might require more time to solve complex issues that arise during the process. It is also possible that groups or individuals may finish their work

earlier or later than originally planned. Another consideration is that PBL often requires access to ample research resources and studies, which could pose difficulties in less well-funded schools (Sindelar, 2010). Furthermore, it should be noted that not all classes may be suitable for implementing PBL due to various factors. Lastly, the dimensions of learning might need to be defined differently and with greater depth in each unique case.

To sum up, in the process of PBL implementation, some students will be unaccustomed to it and cause them to be afraid to boldly express their own ideas; In class, the teacher habitually explains a lot, and the students just keep listening, taking notes and doing boring exercises; group cooperative learning often appear jammed phenomenon, and so on. Therefore, teachers should play the role of a good guide and give necessary guidance to students during group discussions. It is suggested that the application of PBL at the junior high school level can start from the 8th grade students, because PBL can be better applied only when certain specific basic competencies are available.

2.2.6 Research Related to Problem-based Learning Model

The research on applying PBL in class teaching began in 1980 and has received much attention in recent years. Researchers and educators are engaged in examining its effectiveness and much research have been carried out. The concept of Problem-Based Learning originated from overseas, thus it has a rich history and extensive research associated with its implementation. Numerous scholars hold diverse perspectives on this approach. Wijnen et al. (Wijnen et al., 2018) used mixed research methods to carry out a study called " Is problem-based learning associated with students' motivation? A quantitative and qualitative study ", the main purpose of which was to investigate the association between the problem-based learning (PBL) method and students' motivation. The participants completed the Self-Regulation Questionnaire and a modified version of the Work-related Basic Need Satisfaction Scale to assess their levels of autonomous and controlled motivation, as well as their perceived autonomy, competence, and relatedness. To compare two groups, MANOVAs were employed, but

the results indicated no significant differences in terms of autonomous and controlled motivation or feelings of autonomy and competence. The study showed students in both educational forms were highly autonomously motivated and experienced feelings of autonomy and competence in their learning environment.

"In order to investigate students' perspectives on problem-based learning (PBL) and assess its impact on the development of their language skills, Azman & Shin (Azman & Shin, 2012) conducted a quasi-experimental study titled "Students' Perspectives on Problem-Based Learning in an English as a Second Language Classroom." The study involved 57 participants from two out of thirteen classes enrolled in the Foundation English Language Course. Two research instruments were utilized: a Self-Assessment Test and a Program Evaluation Questionnaire. The results indicate that students hold positive perceptions regarding problem-based language learning, and PBL has demonstrated a beneficial influence on their language skills, particularly in speaking proficiency."

In Indonesia, a study conducted by Aulia et al. explored the impact of Problem-Based Learning on the reading comprehension skills of senior high school students in English (Aulia et al., 2023). The research involved 30 participants from English classes at a Senior High School. Following Kemmis and McTaggart's Classroom Action Research model (Stephen Kemmis & Robin McTaggart, 2014), which includes planning, acting, observing, and reflecting components in a cycle proposed by Aulia & Ulwiyah, it was found that Problem-Based Learning had a positive effect on students' reading comprehension abilities (Aulia et al., 2023). However, successful implementation required teachers to possess an understanding of students' characteristics and effective classroom management for smooth and efficient teaching. In 2022, Munawaroh conducted a study titled “The Impact of Electronic-Problem-Based Learning (E-PBL) on Students Motivation and Academic Performance during the Covid 19 pandemic”. The research employed a quantitative approach to analyze the effects of E-Problem Based Learning on students' interest, motivation, and achievement. Various instruments were utilized including questionnaires for assessing students' motivation

and learning interest, as well as an E-PBL questionnaire. Additionally, a problem-based test was administered using the Google Form application. Data collection involved observation, interviews, and questionnaires while Path Analysis was employed for data analysis. The results and subsequent discussion indicated that incorporating E-problem-based learning (E-PBL) into courses had a positive influence on students' learning preferences, interests, and academic performance.

In 2017, a classroom action study “Improving Learning Activity and Students’ Problem-Solving Skill through Problem Based Learning (PBL) in Junior High School” was carried out by Simamora et al. in Indonesia. The whole research process required two cycles, and the data collection was completed through testing and observation. The objective of this study was to investigate whether the utilization of the Problem-based learning (PBL) approach could enhance the engagement in learning activities and problem-solving proficiency among a group of 30 seventh-grade students in mathematics class at Junior High School (Simamora et al., 2017). Based on previous research findings, it can be inferred that implementing the problem-based learning (PBL) model has the potential to enhance students' motivation for learning and their ability to solve problems. In order to explore the role of PBL in promoting students’ English reading motivation, Azman and Shine (Azman & Shin, 2012) conducted two quasi-experimental studies in Malaysia to investigate the perceptions of university students towards problem-based learning (PBL). The results revealed that PBL enhanced both motivation and self-confidence among participants, leading to increased interest in acquiring language skills and content knowledge. Shah and Othman (Othman & Shah, 2013) conducted a study on the implementation of the PBL teaching model in an English course, aiming to assess participants' acquisition of course content and language proficiency. The findings indicated that both the PBL group and non-PBL group demonstrated improvements in language proficiency related to content courses; however, the PBL group exhibited greater progress compared to the non-PBL group.

However, there are a few studies about the application of PBL teaching model in secondary school English teaching. Lin (2017) applied PBL in an English

reading course to investigate that foreign language learners' reading comprehension ability, strategy use, and their learning attitudes (Lin, 2017). The results indicated that the ability of students who participated in the PBL teaching experiment in English reading comprehension, extracting details and learning attitude are better than those who did not. And Hung-Lung et al., (Hung-Lung et al., 2023) adopted the PBL teaching model in senior high school English reading teaching for about 12 weeks to investigate the effects of this model on students' interest in English reading. The results of the experiment showed that this teaching model significantly improved students' interest in learning English and enhanced their awareness of group cooperation and independent ability.

M. Yahya, A. Hasyim and A. Liana (2021) explored the reading abilities of prospective Arabic language teachers or practitioners, as well as core competencies in the field of study they are learning. The purpose of this study was to examine the effectiveness of the student-centered seven-step approach in improving Arabic reading ability (Yahya et al., 2021). There were 50 Arabic language learners as the study sample. Data were analyzed by significance test before and after treatment. The results show that before and after the implementation of this learning method, there are differences in the advanced reading level of the subject. Hasyim's study was conducted in Arabic, while the researcher in this experiment used problem-based learning.

In conclusion, several studies have examined the learning motivation associated with the PBL. The results demonstrate that this method can effectively provide students with required knowledge and enhance their motivation more effective. By engaging in PBL, students develop the ability to actively participate in both teaching and learning activities. They assume ownership of their own education, effectively collaborate within a team setting, adapt to unfamiliar and evolving situations, and cultivate skills that promote lifelong learning. Extensive studies have been conducted on PBL, yielding significant contributions to its application by revisiting previous research and analysis. However, the integration of relevant research into junior middle school English teaching remains scarce. Therefore, this study aims to investigate the potential

of PBL in enhancing students' learning motivation within the context of junior middle school English classrooms.

CHAPTER 3
METHODOLOGY

This study evaluates the changes in A Development the Problem Based Learning Model for Enhancing Learning Motivation in English Reading of Junior High School Students. In order to verify whether the application of PBL in English reading can promote the learning motivation of junior high school students, this study aims to:

1. To study the definition, components of learning motivation for students in junior high school.

2. To develop the Problem-based Learning model for enhancing students' learning motivation in junior high school.

3. To evaluate the effectiveness of the problem-based learning model for enhancing students' learning motivation in junior high school.

This chapter provides a detailed description of the methods used for conducting research, which includes the following three phases:

Phase 1: Study the definition and components of learning motivation for students in junior high school

3.1.1 Research Related Literature

3.1.2 Interviews with Experts

3.1.3 Questionnaire on Learning Motivation for Junior High School Students

Phase 2: Develop a Problom-based Learning model for enhancing Junior high school students' learning motivation

Phase 3: Evaluate the effectiveness of the Problem-based Learning model for enhancing learning motivation of Junior high school students

3.3.1 Research Design

3.3.2 Population and sample

3.3.3 Implementation of Problem-based Learning Model

3.3.4 Data Collection and Analysis

Phase 1: Study the definition and components of learning motivation for students in junior high school

This stage mainly provides basic information for the research project by consulting relevant literature and interviewing expert teachers.

3.1.1 Research Related Literature

Researcher has conducted research on the following theories, laying the foundation for the smooth development of this study:

First, by studying the English Curriculum Standards for Compulsory Education issued in April 2022, which helped us to analyze the main problems existing in junior middle school English courses and specified the teaching needs and learning goals. It will also promote the transition of foreign language teaching to foreign language education and implement the new curriculum standards.

The second is to study the theory of learning motivation, further clarify the formation and definition of learning motivation for junior high students, master the characteristics and components of learning motivation, and realize the importance of learning motivation to learners from the relevant studies at home and abroad.

Thirdly, studies the origin and definition of PBL, and gain a clear understanding of the characteristics and construction of learning models. After analyzing the advantages and limitations of PBL learning model applied in practice, relevant research at home and abroad are listed for reference and comparing.

Fourthly, through the research of theoretical framework, we realize that Problem-based Learning model is mainly based on cognitive theory and constructivism theory. The pedagogy employed is student-centered, with a focus on heuristic instruction and the enhancement of students' intrinsic motivation for learning.

3.1.2 Interviews with experts

In order to comprehensively understand expert' views on the current situation of junior high school students' learning motivation, the researcher conducted in-depth interviews with two English teaching experts in Thailand and three municipal excellent teachers and in China. Collecting the views of teachers working in this field is

extremely important for constructing learning models that enhance students' learning motivation. The interviewees in this study have rich teaching experience, have been engaged in front-line English teaching work for a long time, and have won many professional teaching quality class awards and skills competition awards. The two experts have been responsible for the preparation and evaluation of key exams in Thailand for nearly a decade. The two Chinese university professors interviewed have been conducting extensive research in the field of psychology and continue to actively teach in this area. A middle school teacher, who was interviewed in China, has dedicated 18 years to frontline education and specifically specializes in teaching English at the junior middle school level. Furthermore, this teacher has received recognition as a renowned educator and subject leader.

To sum up, the relevant data obtained in this interview are reliable and have high research reference value.

TABLE 1 Interviewed Experts Information

Teacher code	Gender	Age	Major	Length of teaching	Academic Degrees	Professional title
A	Male	46	Educational Psychology	16	PHD	Associate Professor
B	Male	47	Educational Psychology	23	PHD	Associate Professor
C	Male	46	Applied Psychology	23	PHD	Professor
D	Female	43	Social Psychology	19	Master	Lecturer
E	Female	41	Pedagogy	18	Master	Associate Professor

The interview is implemented before the application of PBL. Five experts are interviewed, including those who implement PBL and other teachers who take part in the PBL courses. The interview is semi-structured and has three specific questions. In the real interview, according to the response of the interviewees, sometimes the researcher timely changes the order of the questions. After that, the contents of dialogue are converts the audio files into text records.

The interview mainly revolves around the following questions:

1) What's the definition and components of Learning Motivation for students in junior high school?

2) How to develop Problem-based Learning Model for enhancing students' Learning Motivation in junior high school?

3) How to develop research measurement instruments to evaluate Learning Motivation among junior high school students in China?

The part of Semi-Structured Interview Questionnaire for interviewing Eligible Respondents are as follows:

Semi-Structured Interview Questionnaire for Interviewing Eligible Respondents

STATEMENT: This semi-structured interview questionnaire is a tool used to interview respondents for the following purposes.

Purpose of the Interview:

1. To define the definition and components of Learning Motivation for students in junior high school.
2. To gain the guidelines for developing a problem-based learning model to enhance students' Learning Motivation in junior high school.
3. To gain the guidelines for developing research measurement instruments to evaluate the Learning Motivation in junior high school students.

Section 1: General Information

Name of Expert_ _

Educational Background_ _

Work Experience_ _

Position_ _

FIGURE 2 This Semi-Structured Interview went through the following process:

1) At the beginning, the researcher explains the intention of the interview, contact them through different channels first.

2) Before the formal interview, researcher informs interviewees in advance that the dialogue needs to be recorded by audio and communicate the main content of the interview with the interviewees through social media platforms.

3) In the process of formal interview, researcher should do a good job of data collection and integration in time. Use a recording pen to record, but also write down key information by hand. The interview lasts about 45 minutes.

4) After the interview, the voice part of the recorder is converted to text in time, and the converted Word manuscript is saved to the folder in time.

3.1.3 Questionnaire on Learning Motivation for Junior High School Students

In order to improve the practicability and effectiveness of the questionnaire, the researcher asked the sample group to fill in the questionnaire of students' learning motivation by using quantitative research methods. The detailed information is as follows:

Population

The population used in the study was a sample for the analysis of learning motivation of junior high school students. According to the relevant data released by Wuhan Bureau of Statistics in February 2023, and the current number of junior high school students in Grade 8 in Wuhan is about 2067.

Sample

In the selection of schools and grades, the researcher used a multi-stage random sampling method. In the first stage, multi-stage random sampling was used to select the city of Wuhan from the nine prominent first-tier cities in Hubei Province; in the second stage, Steel City No.2 Middle School was extracted from Wuhan City by using simple random sampling; in the third stage, 199 students in Grade eight of Steel City No.2 Middle School was selected by simple random method; and in the fourth stage, the researcher selected two parallel classes in which 66 students were randomly selected.

In order to improve the practicability and effectiveness of the questionnaire, the data prediction of the original questionnaire was carried out before the formal distribution. The subjects of data pre-test were all the students in grade 8 of No. 2 Middle School of Qingshan District, Wuhan, a total of 199 students.

The instrument used for the study was the questionnaire of students' innovative thinking, which included the following steps:

1.By studying relevant academic literature, books and domestic and foreign studies, on the basis of the English learning motivation questionnaire compiled from The Experimental Research on Internalization of Extrinsic Learning Motivation of Students at Junior High School which was written by Bao Zhanguang (2006) and Questionnaire of English Language Reading Motivation in Junior High School (Sun et al., 2017). The questionnaire consists of two parts. The first part is the general information of the participants such as gender, age, grade and so on. The purpose of this part is to obtain some basic information about students. The second part is the main part, and it is made up of 33 questions. The questions can be divided into 3 categories: activation, persistent and intensity.

2.Questions in Learning Motivation Questionnaire for Junior High School Students were designed to have an open-ended structure, consistent with professional terminology and practical definitions. To facilitate the collection and analysis of the data, the questionnaire is designed according to the Likert Scale. There are five degrees of answers under each statement: strong disagreement, partial disagreement, neither agree nor disagree, partial agreement, strong agreement. This method allows the students to make a choice according to their actual ideas and their actual situations. Different degrees of answers are respectively numbered 1, 2, 3, 4, 5 (1 means strong disagreement, 2 means partial disagreement, 3 means neither agree nor disagree, 4 means partial agreement, 5 means strong agreement). The full marks of each item are 5 points.

3.Submit the Learning Motivation Questionnaire for Junior High School Students to three experts. These three experts are lecturers who consider academic qualifications and fields related to students' education. A minimum of 5 years of employment.

4.Combined with the opinions of three experts, the Index of Consistency (IOC) of Learning Motivation Questionnaire for Junior High School Students was

calculated, and the range value was between 0.67 and 1.00, which met the standards of the questions.

5.The revised questionnaire of Learning Motivation Questionnaire for Junior High School Students will be tested. Used to test students who are in Grade eight, the number is 199. Cronbach's Alpha coefficient was calculated to evaluate the reliability of the questionnaire. The results showed that the overall reliability of the questionnaire was 0.929, validity was 0.903, its detailed in Appendix E.

Data collection

The researcher obtained the data collection permission of the sample students by contacting Steel City No.2 Middle School. After obtaining permission, the researcher conducted the data collection through the questionnaire Star. Researcher sent out questionnaires and collected 369 copies. Invalid questionnaires that took less than 100 seconds to fill were eliminated, and the same options were selected continuously. The final valid questionnaires were 217.

Data analysis

1) Qualitative data analysis: The researcher conducted content analysis through the data obtained by interviewing experts to determine the definition and components of the learning motivation questionnaire and used it as a guide for the follow-up research tool.

2) Quantitative data analysis: researcher conducted basic statistical analysis on quantitative data of the learning motivation questionnaire and calculated the reliability of the questionnaire.

Phase 2: Develop a Problom-based Learning model for enhancing Junior high school students' learning motivation

This second phase of research covered research objective two, which was to develop a Problem-based Learning model to enhance the learning motivation of junior high school students. Therefore, this research phase consists of the following steps:

1)Supported by pedagogical theories such as cognitive theory, constructivism theory and cooperative learning theory, this study constructs problem-based learning as the main line, takes students' learning motivation as the focus of design research. Through the implementation and explanation of the problem-based learning model, which is formed to promote the learning motivation of junior middle school students in the English classroom, and gradually and effectively improve the learning motivation of junior middle school students. The development process of this learning model is as follows:

Step 1: Literature review for analyzing the variables of research, the information and the theories related to the variables, and preliminary design of the learning model.

Step 2: To thoroughly implement the requirements of the Notice of the Ministry of Education on the issuance of Compulsory Education Curriculum plans and curriculum Standards, implement curriculum reform and deepen actions, cultivate students' creative problem-solving ability, and determine the curriculum objectives based on the current situation of junior high school students' learning motivation.

Step 3: The researcher determines the content and implementation cycle of the curriculum according to the compulsory education stage, the curriculum arrangement of junior high school English and the learning needs of the research objects.

Step 4: Take cognitive theory, constructivism theory, and cooperative learning theory as the main theoretical framework and write the first draft of the learning model. The first draft of the learning model constructed in this study consists of six steps: creating the learning situation, presenting the problem, analyzing the problem in a group, collecting the information to discuss the problem, solving the problem, and evaluating the summary.

Step 5: Organize non-experimental class students to test the learning model. Through classroom simulation and communication with students after class, the first draft was revised into six steps: creating learning situations, group exploration,

presenting problems, collecting data and analyzing problems, comprehensive assessment, and teacher and student summary.

Step 6: Verify the efficiency of the learning model. The researcher invited three experts to test the efficiency of the learning model, and the experts considered rationality and consistency, and made some suggestions.

Step7: Determine your learning pattern. According to expert suggestions and modifications, the model is mainly divided into five steps: Problem posing, Task allocation, Information collection, Group presentation and Comprehensive evaluation. The teacher as a facilitator who runs through these five steps, as shown in the following figure:

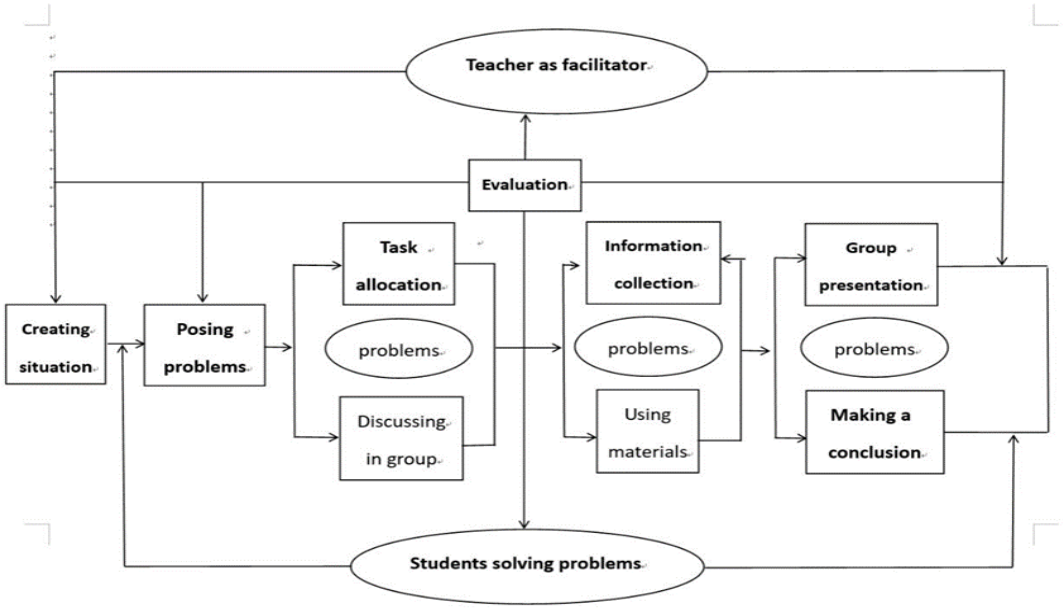


FIGURE 3 Problem-based Learning Model in Reading Class

2) The researcher used five experts (Appendix A) in a formative way to develop the Problem-based Learning model to improve the learning motivation of Junior high school students. These experts include one professor, two Associate Professors. Taking into account the opinions and suggestions of the experts, the researcher analyzed the content and the activity execution steps of the Problom-based Learning model to ensure the validity of the content.

3) The researcher analyzed the scores of three experts on the Problem-based Learning model and evaluated its consistency through Consistency Index (IOC) of Learning Motivation Assessment Tools for Junior High School Students, which was between 0.67 and 1.00.

4) The researcher conducted a field test of the Problem-based Learning model adjusted by experts' advice, and this model was applied to the teaching activities of 33 students in Grade eight in Steel City No.2 Middle School. The purpose of this trial was to examine the relevance of the content, the activity execution steps as well as the activity time.

Phase 3: Evaluate the effectiveness of the Problem-based Learning model for enhancing learning motivation of Junior high school students

In the third phase of the study, the researcher will focus on the impact of the Problem-based Learning model on Junior high school students to improve students' learning motivation. The study utilized a Quasi-Experiment (QE) design that included experimental and control groups using a two-group research design and a pre and post-test (Control Group Pre-test, Post-test Design). This is a widely used experimental design that helps to assess the effectiveness of a learning model. The experiment was designed as follows.

3.3.1 Research Design

The quasi-experimental design that included an experimental and control group. The "R" next to each group (E and C) stands for "Random Assignment". Random assignment is a critical methodological step in experimental research. It involves randomly assigning participants to different experimental conditions or groups. The purpose of random assignment is to help ensure that the experimental and control groups are equivalent on all relevant variables at the beginning of the study. This is shown in the figure below:

Table 2 Repeated Measures Design

Group	Pre-test	Treatment	Post-test	Follow up
E R	T1	X	T2	T3
C R	T1	__	T2	T3

The meaning of the symbols is as follows:

E Experiment group

C Control group

R Random assignment

T1 Pre-test

T2 Post-test

T3 Follow up

X Treatment

__ no intervention experiments

Strategically designed using a Problem-based Learning model designed to enhance learning motivation.

The teaching experiment was carried out from September to December in 2023, lasting about 6 weeks, which can be roughly divided into three stages: pre-experiment, while-experiment and post-experiment. First of all, in the first week, the researcher provided pre-questionnaire and pre-test for students in the CC and EC respectively. In the experiment, PBL teaching model was adopted to replace the traditional teaching model in the EC. Finally, in the 14th week, the post-questionnaire, post-test and some interviews were conducted in two classes.

Through the comparison of the tests before and after, it is verified whether PBL teaching mode can effectively improve the learning motivation of junior high school students in English reading class. In order to verify the effectiveness of the model, in addition to the quantitative analysis of the questionnaire survey, the feedback and

optimization suggestions of teachers and students on course teaching and learning are also added to form a feasible teaching process and improve the learning model.

3.3.2 Population and sample

Population: This population was used to evaluate trials using Problem-based Learning models to improve learning motivation among Junior high school students. The students were in the Grade eight, with a total of 199 students. Most of them were at the age of 13-14 at the time of experiment, who had the similar educational experience. In order to reduce the error of experimental results and avoid the difference of learning effect caused by different teaching styles of different teachers, the teaching experiment is conducted by the same teacher. None of students had received training in PBL teaching model before the experiment.

Sample: This sample population was used to evaluate the use of Problem-based Learning models to improve learning motivation among Junior high school students. A 14-week experiment was conducted in Steel City No. 2 Junior Middle School. Two parallel classes were sampled from 6 classes of Grade 8, with Class 4 as the experimental class (EC), and Class 5 as the controlled class (CC). 66 students from the two classes were treated as the subjects.

3.3.3 Implementation of Problem-based Learning Model

The researcher conducted the experiment according to the above experimental plan, which was divided into four stages, as follows:

3.3.3.1 Pre - test

Before the experiment starts, randomly assign participants to the experimental group (E) and control group (C). Researcher carried the pre-test to assess the level of learning motivation in the experimental group and control group. The researcher then arranged a meeting to elaborate the details of participating in the 14 learning activities to the sample group.

3.3.3.2 Treatment

The researcher conducted the experimental treatment and implemented the Problem-based Learning model for the experimental group (E). Ensure

that treatment (X) is standardized and delivered consistently to all participants in the experimental group. According to the prescribed schedule, combined with the teaching material, the Problem-based Learning model that has passed the quality inspection and test was applied to the experimental group for 14 times, each time 60-90 minutes, lasting 6 weeks. The control group (C) did not receive the Problem-based Learning model treatment during this phase. They can continue to use traditional teaching methods. Table 3 Problem-based Learning model teaching plan is shown in the following table.

TABLE 3 Lesson plan of Problem-based Learning model

Time	Time of week	Lesson plan
1	Week 1	Orientation—Learning Model and Students' Learning Motivation
2	Week 2	Activation—Where did you go on vacation?
3	Week 2	Activation—What's your favorite subject?
4	Week 2	Activation—I'm more outgoing than my sister
5	Week 3	Activation—I am going to study Computer science
6	Week 3	Persistence—How often do you exercise?
7	Week 3	Persistence—The Storm Brought People Together
8	Week 4	Persistence—Do You Know When Basketball Was Invented?
9	Week 4	Persistence—Trouble Is a Friend
10	Week 4	Intensity——How I Learned to Learn English
11	Week 5	Intensity—— A 22-year-old computer programmer
12	Week 5	Intensity——From Problems to Solutions
13	Week 6	Intensity—— A Beautiful Earth
14	Week 6	Reflection and conclusion

The steps of Implementing the Problem-based Learning Model: this step is to introduce the constructed learning model into real classrooms, and the researcher used a modified learning mode to teach 33 students who participated in the experiment. The implementation steps are as follows:

Before the implementation, a reward and punishment mechanisms are established after the students are grouped. The researcher explained the PBL teaching process to the students. Students play a leading role in the teaching process, and researcher play the role of guides and promoters in the teaching process. Students are divided into five groups, teams of five or six students, each with their own role to play. Students fill out forms to understand their role in each group. Then the researcher introduced the reward and punishment mechanism to the students. Researcher asked the students to write down the reward they would want if they were the winner. For example, students in the failing group must sing an English song at the beginning of the next class. The competition mechanism can stimulate students' interest and is the driving force to stimulate students' better performance in teaching activities.

1. Problem Posing

In this step, researcher should create a relaxing situation in class. A meaningful situation which related to students' real-life was necessary for students. Therefore, researcher needed to create an authentic and real situation for students. In pre-reading stage, researcher used various ways to create a real situation related to the reading materials to stimulate students' learning interests. What's more, in this real situation, the problems were presented in many ways, such as pictures, videos and games. Through these problems, students' existing knowledge could have a connection with the new knowledge in their cognitive structure. During the process, problem was related to students' real life. In this way, students could solve the problem more easily and practically.

2. Task Allocation

One of the characteristics of PBL was cooperative learning. Students had to discuss and explore problems with other members. Each member in the group

had own roles. According to the standard, students' cooperative learning and discovery learning ability should be cultivated. Therefore, after the problems having been presented, students worked in groups to discuss the final answer and produced new problems. During discussion, group members expressed different ideas, opinions or views based on their different experiences and learning background. Students became the group leader who organized the discussion and tasks. And researcher played the role as a guide and promoter. Students worked in groups to discuss with their group members and share their own ideas with each other.

3. Information Collection

The fourth step was collecting and integrating materials to make a conclusion. In PBL teaching method, each member in group had different roles. The leader put forward the problem, while the informant collected information from other books or extra reading materials. Meanwhile, the recorder wrote down the group's views and opinions and the reporter showed the final results to the whole class. While students discussing the problems, they collected related information from textbook or extra reading resources. The major task in this step was cultivating students' autonomous learning ability and cooperative learning ability. During the discussion, researcher walked around the class to monitor whether students needed help. The simple problems which students got the answer easily did not need researcher to explain further. While, for the difficult problems, researcher paid more attention to those key points which students were easy to make errors or mistakes. In this step, students were guided to cooperate with other group members in order to finish their own task.

4. Group Presentation

Each group showed their discussion results to the whole class after analyzing the problems. The presenting group expressed their answers about the questions and also put forward other questions. The other groups were required to take notes and expressed their different views about the reading materials. In addition, the other groups also asked new problems to the whole class. In this way, students got new understanding from other groups, which was helpful to improve learning efficiency.

Students who played the roles of reporter were invited to share their groups' opinions in front of class and the rest of groups could give their ideas.

5. Comprehensive Evaluation

As a matter of fact, the purpose of reading was not for remembering the author's opinions, but for helping students integrate knowledge they had learned. The evaluation included three forms: self-evaluation, peer-evaluation, and researcher-evaluation. Researcher guided students to do self-evaluation and peer-evaluation. Specifically, the criteria of evaluation focused on the learning process instead of the learning results. In addition, researcher offered advice and suggestions for students according to their shortcomings.

3.3.3.3 post-test

After the completion of the Problem-based Learning model treatment, researcher the post-test to measure learning motivation in the experimental group (ER). Assess the immediate impact of the Problem-based Learning model. Researcher carried the post-test to measure learning motivation in the control group (CR). Establish the baseline for comparison with the experimental group.

3.3.3.4 Follow up

After one month, researcher conducted a follow-up assessment of learning motivation in the experimental group (ER) and control group (CR) by administering the follow-up test.

3.3.4 Data Collection and Analysis

Researcher used quantitative analysis methods to process data and conduct data analysis to answer the research purpose, which specifically includes:

1)This study collected data through questionnaires, tests, and interviews before and after the experiment. It investigates the influence of PBL teaching model on students' learning motivation in junior middle school English reading teaching through questionnaires and tests. Perform preliminary data analysis through basic statistical analyses such as means, standard deviations, and differences between means. After the preliminary results were obtained from the questionnaire data, some

interviews were conducted with the students. The students were asked to discuss the effectiveness of PBL on their learning motivation in English reading teaching and give some suggestions.

2)It investigated the effects of PBL learning model on students' learning motivation in junior middle school through questionnaires and tests. The data collected during the questionnaire survey and test were input into the computer and analyzed by using appropriate statistical analysis (ANOVA) to compare pre-test, post-test, and follow-up results between the experimental and control groups. Independent sample t-test was used to examine the differences in learning motivation before and after the experiment, the data collected from the interviews were used for qualitative analysis.

CHAPTER 4
RESEARCH RESULTS

The aim of this study A Development the Problem Based Learning Model for Enhancing Learning Motivation in English Reading of Junior High School Students is to investigate the components of junior high school students' learning motivation in English reading class, to develop and evaluate students' problem Based Learning model. In order to improve the cognitive needs and reach a consensus, the researcher defined symbols and acronyms for data analysis and presentation of results, respectively. The researcher defined symbols and abbreviations for the results of data analysis:

n	Sample size
M	mean
S.D.	Standard deviation
p	Level of statistical significance
t	t-test
df	degree of freedom
PBL	Problem Based Learning
SS	Sum of Squared deviation
MS	Mean Squared deviation

Based on this, the researcher presented three data collections. The details are as follows:

The first part, the definition and components of learning motivation for students in junior high school.

The second part, the development of the problem-based learning model to enhance students' learning motivation in junior high school.

The third part, evaluate the effectiveness of the problem-based learning model for enhancing students' learning motivation in junior high school.

Phase 1 Study the definition and components of learning motivation for students in junior high school

Through literature review on the definition and components of junior high school students' learning motivation, the researcher came up with the following definitions and components were also based on the experts' interview, specifically as follows:

4.1.1 Definition of learning motivation

After reviewing the literature of this definition, it is found that the definition of junior high school students' learning motivation is consistent. Junior high school students' learning motivation refers to a dynamic tendency to stimulate and maintain students' learning activities, which makes students move towards a certain learning goal, and is also an internal process for students to complete their learning tasks and improve their learning enthusiasm.

According to Gardner, language learning motivation encompasses the willingness to learn, the effort exerted, and a positive attitude towards learning. It is considered as a non-intelligence factor that serves as an internal driving force for students' learning (Gardner et al., 1985). C. A. Wolters, L. Y. Shirley and P. R. Pintrich describe learning motivation as a process involving goals, physical and mental activities, which both initiates and sustains it (Wolters et al., 1996). Coledefines learning motivation as an internal state that stimulates, guides, and maintains behavior (Cole, 2007). Garavan et al. suggest that learning motivation reflects a student's desire to participate in training activities and acquire knowledge from them (Garavan et al., 2010). Similarly, Schunk viewed learning motivation as a process where goal-directed learning activities are initiated and sustained (Schunk, 2014).

Additionally, the viewpoints of five experts were sought regarding the characterization of learning motivation in relation to the specific circumstances encountered by students at the junior high school level. Experts agreed that learning motivation is the term refers to an internal drive that actively facilitates students' learning, actively stimulating, sustaining, and directing their behavior towards specific learning objectives.

"Learning motivation is the force that pushes you to learn and progress. Learning motivation has three dimensions: learning motivation, learning goal and

learning experience, including internal motivation and external motivation. Learning motivation is the internal part of learning motivation, which can be understood as "what I am learning for". Learning goal is the external part of learning motivation. This kind of external goal is meaningful only when it is combined with the internal motivation. Learning experience is the learner's personal subjective feelings in the process of learning. With a good learning experience, there is a stronger learning motivation and the pursuit of goals." (Expert C)

"As an important theory in the intersection of pedagogy and psychology, the definition and connotation of learning dynamics cover many levels. In a broad sense, learning motivation refers to the sum of various forces and factors that push individuals to learn. It includes both internal motivation, such as interest, curiosity, thirst for knowledge, etc., and external motivation, such as family expectations, social recognition, and career needs. These dynamic factors interact with each other, and together constitute the rich connotation of the theory of learning motivation. Learning motivation mainly refers to the motivation tendency that guides and maintains learners' learning behavior and directs it to a certain academic goal. Learning motivation has external motivation and internal motivation, which mainly includes learning needs, learning emotions and learning interests. It is reflected in learning goals, such as learning to get good grades, to get the love of parents or to experience the fun and achievement of learning itself." (Expert D)

"Learning motivation is a kind of motivation tendency that guides and maintains students' learning behavior and directs it to a certain academic goal. It consists of two components: learning needs and learning expectations, which can be divided into different categories according to different standards. Students' learning is influenced by many factors, which are mainly dominated by learning motivation, but also closely related to students' learning interests, learning needs, personal values, students' attitudes, students' ambition level and external encouragement. The role of motivation in learning activities is complex. For the majority of teachers, understanding and mastering

the types and characteristics of students' learning motivation is conducive to effective teaching.” (Expert E)

After Literature review and conducting interviews with five experts, it was discovered that the consensus among them is that Learning motivation of Junior high school students refers to a kind of internal state that promotes and maintains learner' learning activities, including personal intention, desire, psychological impulse or the goal that they attempt to achieve. Based on the background of junior high school English class, the learning motivation first comes from the students’ needs, and external incentives are used as conditions to motivate students to actively perform in English class, independently complete learning tasks after class, and conscientiously complete relevant English learning activities which are oriented towards certain learning goals.

4.1.2 Components of learning motivation

Based on the review and comparison of the literature, we have reached some consensus on the components of learning motivation. The researcher draws a conclusion through literature review on the components of learning motivation. It includes both intrinsic motivations like interest, curiosity, thirst for knowledge, etc., as well as extrinsic motivations such as familial expectations, social recognition, and career aspirations.

In 1997, Schiefele and Rheinberg proposed that learning motivation encompasses three elements: (1) the frequency and continuity of engaging in learning activities; (2) the manner in which these activities are performed; (3) the learner's motivational and functional states during the process. Ryan and Deci asserted that learning motivation involves the vigor, direction, persistence, as well as intentionality of engagement (Schiefele & Rheinberg, 1997). These perspectives give rise to three crucial aspects of motivation: activation, selection-orientation, and readiness for response (Perwin, 2003). Sandhu highlighted that activation, persistence, and intensity constitute the primary components of learning motivation (Sandhu, 2020).

While, through the expert interview, it is found that the interviewed experts agreed that these three components can help educators, parents, and policymakers to

foster positive learning environment to enhance student's learning motivation. Through expert interviews, some researchers have a definition of the components of learning motivation. It can be categorized into three dimensions: internal motivation, external motivation, and learning goals.

"Learning motivation consists of the following three components: activation, persistence and intensity. Activation refers to a decision of students to take the initiative in learning activities. Persistence refers to a striving from students can continue to solve problems and complete learning goals or tasks for a long period of time even if they are unable to do some study problems or have too much homework in the learning process. Intensity refers to an automatic response to a learning situation. He also addressed that participating in discussions is beneficial, and it's useful to encourage students to seek out additional resources related to their interest. Collaborative learning through active peer and social support and allowing students to choose projects or topics of interest can increase their learning motivation." (Expert C)

"Learning motivation encompasses the internal and external factors that drive individuals to participate in and persist with learning activities. It involves the inclination, curiosity, and eagerness to acquire knowledge, as well as the dedication and resolve to achieve educational objectives. Teachers play a crucial role in fostering students' motivation within the teaching-learning dynamic." (Expert D)

"Learning motivation includes both intrinsic motivations like interest, curiosity, thirst for knowledge, etc., as well as extrinsic motivations such as familial expectations, social recognition, and career aspirations. These dynamic factors interact with one another to form a comprehensive understanding of the theory of learning motivation. Learning motivation primarily pertains to learners' motivational tendencies guiding their academic pursuits while aiming for specific goals. It comprises both external motivators (e.g., academic achievement) and internal motivators (e.g., emotional engagement or personal interests)." (Expert E)

Thus, through the above literature review and expert interviews, the definition of Junior high school students' learning motivation can be summarized as a

dynamic tendency to stimulate and maintain students' learning activities, which makes students move towards a certain learning goal, and is also an internal process for students to complete their learning tasks and improve their learning enthusiasm. It consists of the following three components: activation, persistence and intensity. Activation refers to a decision of students to take the initiative in learning activities. Persistence refers to a striving from students can continue to solve problems and complete learning goals or tasks for a long period of time even if they are unable to do some study problems or have too much homework in the learning process. Intensity refers to an automatic response to a learning situation.

Phase 2 Develop a Problom-based Learning model for enhancing Junior high school students' learning motivation

The researcher conducted a thorough literature review to gather information on PBL. Problem-based Learning refers to a teaching approach based on problem-solving entails the utilization of questions to present textbook knowledge to students, facilitating their acquisition of knowledge, enhancement of intellectual capacities, and development of problem-solving skills through teaching activities that emphasize thinking-oriented engagement in seeking and exploring solutions. Ultimately, this method nurtures students' ability to identify and resolve problems independently.

According to Maudsley (1999), PBL is a teaching philosophy and method that encourages students to collaborate in solving problems. Similarly, Taylor & Miflin (2008) share the view that PBL prompts students to work together in groups for finding solutions. Cheong (2008) highlights the diverse strategies and approaches encompassed by PBL, aimed at enhancing student-centered learning outcomes beyond mere acquisition of knowledge. Yew and Goh (2016) define PBL as a pedagogical approach centered around learners, widely implemented across various educational contexts to improve students' problem-solving skills.

By consulting with three experts, the researchers received guidance on developing the Problem-based Learning model that seamlessly align with educational implementation.

“Problem-based learning is an instructional approach or teaching method that highlights the incorporation of learning in relevant, contextual, and meaningful problem scenarios. By enabling learners to form teams and collaborate in resolving real-life problems, they can acquire scientific knowledge related to these issues, foster critical thinking abilities, develop skills for independent and collaborative learning, and effectively address challenges. When designing learner interactions, it is possible to employ incentive-based and inquiry-based learning techniques centered around identifying problems, analyzing them, and finding solutions. Learners' activities can be designed as follows: 1) General discussion; 2) Group organization; 3) Start the question; 4) Gather information and reason about the questions; 5) Coordinate the data and determine the initial method; 6) Determine methods and draw conclusions: extract knowledge and make relevant conclusions, such as forming definitions, listing diagrams, obtaining concepts, drawing principles, etc.; 7) Report on group learning activities; 8) Evaluation of learning; 9) Revise the method and form the general theory.” (Expert A)

“Problem-based learning aims to construct knowledge and experience by asking students to propose and solve problems. Problem-based learning generally includes the following links: 1) Organize groups; 2) Start a new question; 3) Follow-up; 4) Activity debrief; 5) Reflection after the question. Experts emphasize the importance of students engaging in deliberate reflection on the problem-solving process to enhance their understanding. This involves analyzing both the similarities and differences between the current problem and previous ones they have encountered, enabling them to generalize and grasp the contextual application of new knowledge. Additionally, when students assess their own performance as well as that of others, they are actively reflecting on self-directed learning and collaborative problem-solving activities, which play a crucial role in fostering advanced cognitive skills development.” (Expert B)

Problem-based learning is an effective instructional approach that fosters independent learning, collaboration, and exploration among students while enhancing their enthusiasm for learning. For instance, within the existing classroom learning groups, the group initiates a proposal (preparation by study group) addressing

key and challenging aspects of the subject matter. Subsequently, the teacher gathers information on these questions to design the lesson plan (teacher's preparation). Then, through round table discussions and brainstorming sessions guided by the teacher, students engage in democratic, equitable, and organized problem-solving activities. Each participant actively contributes their thoughts while receiving guidance from the teacher who also reviews their study notes." (Expert C)

Drawing from the existing PBL literature and expert recommendations during interviews, the researchers present several pertinent perspectives. The researcher developed a problem-based learning model to promote learning motivation of junior high school students. In order to make students as the center of the class, let students form teams to work together, and solve the scientific problem; learners acquire self-directed and collaborative learning skills, and do the problem solving efficiently. This is also an important feature of problem-based learning.

For improving the junior high school students' learning motivation, this study includes two important parts: 1. The concepts and principles of problem-based learning model; 2. Problem-based Learning model to enhance the learning motivation of junior high school students.

4.2.1 The concepts and principles of problem-based learning model

First, researcher clarified definition and components of junior high school students' learning motivation. In first phase of the research, the researcher studied the literature related to the learning motivation. Thus, researcher combined the ideas of Ryan and Deci and the concepts of Sandhu to conclude: Junior high school students' learning motivation consists of these following three components: activation, persistence and intensity (Sandhu, 2020). So as to strengthen the learning motivation of junior high school students, various measures can be taken, such as: training, behavior adjustment, learning model, and so on.

In this study, researcher proposed a problem-based learning model. From Collins et al. point of view, PBL is a solving process, students and teacher cooperate to solve particular problems, among which students are the key persons to find out the

solutions of the problems (Collins, 1989). According to Engel, the fundamental attributes of a curriculum based on problem-solving can be outlined as follows: it is cumulative, integrated, progressive, and consistent (Engel et al., 1992). PBL has been developed and applied the core model of PBL (Barrows, 1996) in a wide range of disciplines, which is composed of the following seven characteristics: (1) Students should take responsibility for their own learning; (2) The problem simulations utilized in PBL should be complex and encourage independent exploration; (3) Collaboration plays a crucial role; (4) It is essential to analyze what has been learned from working on the problem and discuss the concepts and principles acquired; (5) Self-evaluation and peer assessment should be conducted upon completion of each problem as well as at the end of every curricular unit; (6) The activities carried out in PBL must align with real-world values; (7) Student examinations should assess progress towards PBL goals. Newman's study in 2005 reaffirmed Barrows' statement, proposing a set of "essentials" or principles for designing PBL. A PBL approach consists of three key elements: a loosely structured case or prompt integrated with links to desired learning content, student-centered learning, and small group cooperative learning (Newman, 2005). These concepts and characteristics are consistent with the basic theory of improving students' motivation to learn.

In the first phase of the study, the researcher interviewed five experts to discuss ways to improve the learning motivation of junior high school students, and the qualified people presented a consensus and reached the following conclusions:

Problem-based Learning Model refers to a kind of method that utilizes "problems" as stimuli encourages students to develop a desire to seek knowledge to solve those problems, empowering students to make decisions. In junior high school, problem-based learning model should focus on a deep understanding of content through active engagement with real-world problems, promoting collaboration, communication skills, critical thinking and problem-solving abilities among students.

For developing a problem-based learning model to enhance Learning Motivation among junior high school students in China, it should consist of four components:

1) Select real-world problems that are relevant to the lives, interests, and cultural context of junior high school students in China. Ensure the problems are challenging enough to stimulate curiosity and critical thinking.

2) Integrate Problem-based Learning with the existing curriculum.

3) Promote positive and inclusive learning environment by encourage students to explore, question, and investigate the problem. Sharing of ideas with constructive feedback and provide opportunities for students to present their ideas to support environment.

4) At the end of the activity, there must be a summary presented in the classroom.

5) Evaluate the process of learning (collaboration, communication skills, problem-solving skills) not only the final result.

While developing problem-based learning models to strengthen junior high school students' motivation to learn, expert teachers recommend the use of various educational activities or techniques.

1) Allow students to select topics that relevant to their live and align with their interests can foster their motivation and also regular constructive feedback.

2) Encourage students to set personalized learning goals within the Problem-based learning framework.

3) Facilitate opportunities to support each other can enhance motivation.

4) Integrate technology tool, technology can add an excitement to the learning process.

For teaching methods or activities to foster learning motivation, activities must be diverse and interesting, avoiding boredom. For example, posing problems for students to solve. The problem should be intriguing, allowing students to think and seek answers on their own. Therefore, various activities that students engage in can be used

at each stage of problem-based learning, such as using case studies, Mind-map, Guessing Game, brainstorming (think-pair-share), or other forms of active learning. On the basis of relevant literature research and interviews with experts, the implementation of PBL learning model, activation, persistence, and intensity of junior high school students' learning motivation will be promoted under the educational background of China.

4.2.2 Problem-based Learning model to enhance the learning motivation of junior high school students

In the process of promoting the learning motivation of junior high school students, researcher used the constructivist theory of Piaget and the cognitive theory of Vygotsky, expert interviews and curriculum outline as the guide for designing learning activities (Piaget, 1969; Vygotsky & Cole, 1978). Through a series of classroom-based instructional activities, researcher was able to train students in the three main components of motivation: activation, persistence and intensity. These activities encourage students to engage in rich, challenging and novel thinking, including role-playing, brainstorming, mind-mapping and group activities. Students build their knowledge through practice and simulation. Communicate with peers to learn and use advanced thinking methods. Students play an important role in their learning and are free to express their thoughts and feelings in a friendly learning atmosphere or activity. More importantly, students participate in activities that are open to demonstrating their abilities, self-confidence, and more.

1. Purpose of developing a Problem-based Learning Model

In this study, the problem-based learning model was designed and developed by the researcher as a series of learning activities in order to strengthen students' motivation to learn. So as to enhance the learning motivation of middle school students who participated in the activities, the field covered three elements. Its purpose is as follows:

To activate the desire of students fully engaging in learning and to set goals that are appropriate for their learning; continuing to move forward toward each

learning goal even if there are some obstacles, finding the resources to overcome fatigue, stress, and other distractions, and ultimately persisting in achieving the learning goals; control and moderate the intensity of engaging in learning, not too strong or too weak, just moderate.

In order to increase students' learning motivation, the researcher developed 14 learning programs that used student-focused learning strategies and psychological techniques.

2. Steps for Problem-based Learning Model Implementation

1)Problem Posing

In this step, researcher should create a relaxing situation in class. A meaningful situation which related to students' real-life was necessary for students. Therefore, researcher needed to create an authentic and real situation for students. In pre-reading stage, researcher used various ways to create a real situation related to the reading materials to stimulate students' learning interests. What's more, in this real situation, the problems were presented in many ways, such as pictures, videos and games. Through these problems, students' existing knowledge could have a connection with the new knowledge in their cognitive structure. During the process, problem was related to students' real life. In this way, students could solve the problem more easily and practically.

2)Task Allocation

One of the characteristics of PBL was cooperative learning. Students had to discuss and explore problems with other members. Each member in the group had own roles. According to the standard, students' cooperative learning and discovery learning ability should be cultivated. Therefore, after the problems having been presented, students worked in groups to discuss the final answer and produced new problems. During discussion, group members expressed different ideas, opinions or views based on their different experiences and learning background. Students became the group leader who organized the discussion and tasks. And researcher played the

role as a guide and promoter. Students worked in groups to discuss with their group members and share their own ideas with each other.

3)Information Collection

The fourth step was collecting and integrating materials to make a conclusion. In PBL teaching method, each member in group had different roles. The leader put forward the problem, while the informant collected information from other books or extra reading materials. Meanwhile, the recorder wrote down the group's views and opinions and the reporter showed the final results to the whole class. While students discussing the problems, they collected related information from textbook or extra reading resources. The major task in this step was cultivating students' autonomous learning ability and cooperative learning ability. During the discussion, researcher walked around the class to monitor whether students needed help. The simple problems which students got the answer easily did not need researcher to explain further. While, for the difficult problems, researcher paid more attention to those key points which students were easy to make errors or mistakes. In this step, students were guided to cooperate with other group members in order to finish their own task.

4)Group Presentation

Each group showed their discussion results to the whole class after analyzing the problems. The presenting group expressed their answers about the questions and also put forward other questions. The other groups were required to take notes and expressed their different views about the reading materials. In addition, the other groups also asked new problems to the whole class. In this way, students got new understanding from other groups, which was helpful to improve learning efficiency. Students who played the roles of reporter were invited to share their groups' opinions in front of class and the rest of groups could give their ideas.

5)Comprehensive Evaluation

As a matter of fact, the purpose of reading was not for remembering the author's opinions, but for helping students integrate knowledge they had learned. The evaluation included three forms: self-evaluation, peer-evaluation, and researcher-

evaluation. Researcher guided students to do self-evaluation and peer-evaluation. Specifically, the criteria of evaluation focused on the learning process instead of the learning results. In addition, researcher offered advice and suggestions for students according to their shortcomings.

3. The content of the activities

Based on these studies, the researcher proposed a problem-based learning model to promote learning motivation in junior high school students. Here, the researcher presents the key questions for each learning program separately:

Lesson 1 Orientation

For the first time, orientation is an important process that begins the relationship between professional students, faculty and researcher, and students. It is an atmosphere of learning and friendly activities. Warm, happy and fun to study, in such a learning environment, students can relax and dare to show themselves. During the freshman orientation process, participants are free to express their abilities, opinions and feelings, explaining to students the purpose, conditions, details and benefits of participating in all activities. This is an important piece of content to help students understand the activities they will participate in next.

Lesson 2 Activation

According to Lu Ziwen (2010), the starting point of the problem-based learning is to induce students to discover problems, and its ending point is to solve problems, with the main goal of enhancing students' autonomy in learning and inducing them to actively ask questions. Researcher creates real problem situations for students in the classroom to stimulate their desire for knowledge, guide them to think actively, learn to analyze problems and find solutions in the process of constantly asking questions, so as to further enhance their problem-solving ability and overall literacy while improving their knowledge.

Lesson 3 Activation

Activation is the decision to initiate a behavior. Motivation means drive and interest toward or away from something, but activation is what gets you there.

Activating to a task is starting the work that you need to do to achieve what motivates you. Motivation is necessary but insufficient activation is the secret sauce. Motivation plays a pivotal role in influencing students' actions and achievements. When students are motivated, they demonstrate an enhanced sense of positivity and enthusiasm within the classroom environment, as well as towards their educational pursuits. This heightened motivation encourages students to actively engage in their learning process and persevere through challenging content, errors, or tasks. Problem Based Learning and constructivism are student-centered. Students have to solve problems through cooperation and analyze problems in group. These problems are put forward and solved by students. Researcher should help students develop the habit of solving problems with other group members, connecting their existing knowledge with new knowledge. Students actively asked questions and thought creatively in the process of completing tasks, constantly building their knowledge. Both of them stress the process of getting knowledge through participating in problem solving.

Lesson 4 Activation

In the PBL model, the setting of driving questions is particularly important. Driving questions are directly related to the direction of students' thinking. In the opinion of Torp and Sara (2004), when using the guided approach, the questions posed must be complex and poorly structured. Only such questions can attract students' attention more quickly, increase their motivation to explore, and motivate them to think more deeply about the problem so that it can be solved. Learning encompasses both extrinsic and intrinsic rewards, with inquisitiveness playing a pivotal role in the knowledge acquisition process. Students demonstrate heightened dedication to their studies when motivated by specific objectives. Active learning empowers students to assume responsibility for their education, fostering motivation and enabling them to initiate actions based on self-determined goals and developed metacognitive skills. The implementation of activating strategies serves as an inspirational catalyst for learners and is indispensable in instructional design. A well-crafted hook should not only pique students' interest but also establish connections with their prior knowledge or be skillfully

crafted by the teacher. If the hook delves deeper into the subject matter, it can serve as a potent tool for cultivating Higher Order Thinking Skills.

Lesson 5 Activation

PBL (Problem-Based Learning) is "problem-oriented learning" or "problem-based learning", which is a teaching method that guides students to learn actively. Students analyze and solve problems by themselves or through teamwork; teachers no longer purely teach and present all knowledge to students but take problems as the beginning of teaching and lead them to think actively with problems, thus stimulating their interest and motivation in learning. For younger students, the act of making predictions involves utilizing information from a written piece (including headings, visuals, and illustrations) as well as their own personal experiences to anticipate upcoming content or subsequent sections. Engaging in prediction activities encourages students to concentrate on the current text while consistently contemplating future developments. Additionally, this approach aids in establishing connections between prior knowledge and the presented material. Active learning strategies have been shown to have a positive impact on student achievement. Implementing active learning strategies in the classroom can enhance students' motivation, attitudes, aptitudes, and skills. These strategies promote student engagement and participation, leading to better learning outcomes. Therefore, this course creates a multi-modal real situation that can arouse students' emotional resonance and improves students' comprehensive language application ability while training students' language skills.

Lesson 6 Persistence

Persistence refers to the continuous exertion of effort and determination, even when faced with obstacles, opposition, or setbacks. It is characterized by a strong commitment to persevere and overcome challenges. In the context of students, persistence serves as a driving force that empowers them to achieve both their academic and personal goals. The ability to persist despite adversity is often linked to having high levels of motivation. Research has demonstrated that students who possess a firm belief in their own capabilities are more likely to endure

through academic difficulties for extended periods. Educators play a vital role in nurturing persistence and fostering effective effort among students. They can cultivate an understanding that intelligence can be developed over time, provide regular and specific feedback on students' academic progress, and encourage self-reflection on past experiences of overcoming challenges and attaining success. It helps to develop students' learning skills. High-quality PBL is characterized by clear reading literacy goals, driving questions, sustained inquiry and full assessment. In the process of students' learning, teachers guide them in the right way to think actively in authentic contexts and dig deeper into the reading text, so as to further improve their higher order thinking skills and language literacy.

Lesson 7 Persistence

Persistence, also known as grit, refers to the ability of learners to persist in learning tasks until they achieve mastery of the relevant skills (Cloninger et al., 1993). Additionally, empirical research highlights the significance of cultivating persistence as it empowers learners to overcome obstacles and effectively engage with complex material (Bandura et al., 1999). Nevertheless, it is important to note that persistence does not always guarantee successful outcomes. In cases where a learner repeatedly attempts a task without achieving success, their subsequent efforts can become unproductive, leading to a phenomenon commonly referred to as wheel-spinning. In the 1960s, Barrows created the PBL self-directed learning model, which advocates setting learning in complex and meaningful problem situations. In addition to the course curriculum, problem-based learning (PBL) can facilitate enhancement of critical thinking abilities, problem-solving skills, and communication proficiencies (Barrows, 1986). It also offers opportunities for collaborative work, research material exploration and evaluation, as well as fostering a lifelong commitment to learning (Duch et al., 2001). By engaging in cooperative problem-solving approaches, PBL empowers learners to develop their capacity for self-directed and continuous learning (Yahya et al., 2021).

Lesson 8 Persistence

Persistence is crucial because it enables individuals to overcome any obstacles they may encounter. Numerous accomplished individuals have experienced failures and setbacks throughout their journey, but they refused to let those setbacks define them. Instead, they viewed their failures as opportunities for growth and learning. The ability to persist, while also recognizing when persistence is no longer beneficial, plays a vital role in our self-regulation skills and allows us to achieve personal goals while maintaining well-being (Brandstätter & Bernecker, 2022). Without persistence, our personal growth and learning would be severely limited. Motivational persistence is considered a stable characteristic of the conative system - an individual's inclination to persist with effort in order to achieve personal goals by utilizing internal resources to overcome encountered obstacles (Constantin 2008). Problem-based learning (PBL) is an instructional approach that involves collaborative group work where students identify what they need to learn through facilitated problem-solving activities. Implementing PBL can be quite challenging due to the extensive planning and hard work required.

Lesson 9 Persistence

It is not too difficult for a student to be motivated; a whim is difficult to sustain; external motivation to achieve a goal or receive a reward is short-lived and will return once satisfied. What is difficult is to have a strong and sustained motivation to learn. The willingness to learn from the heart is persistent and proactive. The source of junior high school students' motivation to learn is more from the "external drive" rather than "internal drive". In order to maintain a strong and sustained motivation to study, it is necessary to start from the heart. We need to examine why we want to learn? What is the meaning of learning? To form an understanding, firm confidence, stimulate their own inner vitality, you have a heartfelt motivation to learn, so that you can have a stronger and more sustainable learning power. Problem-Based Learning (PBL) specifically encourages students to engage in critical thinking by involving them in activities that revolve around questioning, discussing problems, and devising solutions related to the

subject matter. Collaboratively working in groups, students identify the knowledge they need to acquire in order to solve a problem. They then independently pursue self-directed learning (SDL), applying their newfound knowledge to address the problem at hand and reflecting on both their learnings and the effectiveness of their chosen strategies. In PBL, rather than simply imparting knowledge, instructors assume the role of guides who facilitate and challenge the learning process while students actively construct knowledge through teamwork. Aligned with constructivist theory, PBL fosters a lifelong commitment to inquiry-based learning.

Lesson 10 Intensity

Learning is a lasting thing, the only way to make progress is to be persistent. Some students love to learn, but do not devote enough time to study every day, or, in other words, the intensity of learning is not enough, just looking for a kind of psychological comfort, or psychological massage, in fact, the intensity is far from enough, resulting in low learning effect. In the end, not feel the preset learning goals. In learning, it is necessary to be persistent, but also to maintain a certain intensity, so as to ensure that the learning effect, to achieve the purpose of learning. If the battle line is stretched too far and a certain intensity is not maintained, the learning effect will be greatly reduced. PBL is an educational approach rooted in constructivism that revolves around the organization of curriculum and instruction through the utilization of carefully designed "ill-structured" problems (Barrows, 1988). The emphasis on Problem-based Learning aligns with Dewey's methodology, encouraging students to apply their knowledge towards resolving real-world issues. This fosters a deeper comprehension of the subject matter while empowering students to actively engage in their own learning process and seek solutions independently. PBL serves as a catalyst for developing critical thinking skills, problem-solving abilities, creativity, and all essential competencies in the modern era that greatly enrich individuals' lives.

Lesson 11 Intensity

The field of motivation explores the internal processes that propel behavior, encompassing its vigor, direction, and perseverance. Motivational strength

denotes the extent of inclination towards approaching positive situations or events while avoiding negative ones. Variations in motivation give rise to variations in behavior. The principle of intensity posits that learners acquire more knowledge through authentic experiences rather than substitutes. Similarly, learners attain a deeper comprehension of tasks by actively engaging in them instead of solely reading about them. “Intensity” in the realm of behavior analysis refers to the severity or forcefulness of a behavior. It's about gauging how extreme the behavior is and whether it's disproportionate to the situation at hand. Your exercise intensity must generally be at a moderate or vigorous level for the most benefit. The determination of exercise intensity plays a crucial role in influencing the nature and extent of physiological adaptations resulting from training. Equally significant are the factors of exercise frequency and duration, as they collectively contribute to determining the overall training volume.

Lesson 12 Intensity

Intensities, also known as Overexcitabilities, offer a valuable tool for content analysis as they resonate with numerous learners, especially those who are gifted. Encouraging students to identify themselves within the content enhances comprehension and serves as motivation for more robust analysis. Intensity refers to the number of physical quantities emitted by a source, such as sound and light. It denotes the magnitude or strength of a specific physical quantity at a particular location in space. Depending on the nature of the physical quantity, intensity can be measured using various methods. Affect intensity pertains to individual variations in the strength or intensity of individuals' emotional experiences (Larsen & Diener, 1987). Problem-based learning (PBL) represents the primary approach employed to foster students' problem-solving skills. 2022 version of the standard also repeatedly emphasizes the need to cultivate students' ability to analyze and solve problems, to integrate language learning and content learning, and to guide students to learn to learn to use. The students should be guided to learn to learn and learn to use one. Reading, as an input cognitive activity of acquiring information and communicating ideas through words, is both a necessary condition and an urgent need to improve problem-solving ability. William Gray, the

former first president of the World Reading Institute, put forward the concept of three levels of endeavor: Read the lines, read between the lines, Read beyond the lines. This requires teachers to dig deep into the text, reading for thinking, reading for problem solving, and reading for problem solving. This requires teachers to dig deeper into the text, to have the awareness of reading for thinking and reading for problem-solving.

Lesson 13 Intensity

The concept of persistence can be traced back to the ancient Greek philosopher Plato, who, in his renowned work Timaeus, characterized pain not as an individual sensation but rather as an "emotion" that arises when the stimulus is both strong and enduring. Exercise and physical activity are typically classified into three distinct levels of intensity: low, moderate, and high (also known as "vigorous"). As Geen's perspective, motivation pertains to the commencement, orientation, magnitude, and continuity of human conduct (Geen, 2019). Based on a constructivism view of learning, new knowledge is closely linked to the learner's prior knowledge and experience. Therefore, Problem-based learning (PBL) created a real situation and set up the questions which were related to students' lives to stimulate students' prior knowledge and encourage them to answer questions more actively. Cooperative learning theory provides a strong underlying theoretical support for the PBL method. The group discussion and learning not only give full play to each individual's ability, but also promote the development of students' thinking skills and cooperation awareness. In the ages of quality-oriented education, the application of PBL method in junior high school English reading class should connect real - life problems with students to create real situations and cultivate students' practical ability to solve problems. The concept of motivation refers to the internal factors that influence a student's voluntary actions in terms of their direction, intensity, and duration. Motivated students demonstrate a willingness to exert a specific level of effort (intensity) consistently over an extended period (persistence) towards achieving a particular objective (direction).

Lesson 14 Reflection and conclusion

Learning motivation research is very important in foreign language teaching. Without understanding the motivation of students, it is impossible for teachers to effectively mobilize the enthusiasm of students and stimulate their enthusiasm for learning foreign languages. Teaching without the participation of students is only teaching failure. Teachers can enhance their teaching effectiveness and achieve better results with less effort by gaining a deep understanding of students' psychological aspects, recognizing their internal and external requirements, and reinforcing rational and efficient elements. Problem-based Learning embodies the idea of constructivism, it emphasizes the subjectivity of students, and it conforms to the process of integrating students' independent inquiry into the process of knowledge construction. By guiding students to acquire knowledge with problems, PBL is also strongly supported by the constructivism theory. Cooperative learning theory follows the law of students' cognitive development, which promotes the good interpersonal relationship between students, and it greatly mobilizes the enthusiasm of students to participate in learning. In cooperative learning, learning tasks are assigned and shared by all students, so the problems will be easily to solve. It combines students' knowledge and experience, promote their mutual help and common progress in learning, enhance the learning motivation among students, and then improve the teaching quality and good teaching atmosphere of the whole class. Group cooperative learning plays an important role in improving the efficiency of classroom teaching, and it acts on cultivating student' emotional communication, mutual cooperation and common improvement. Table 4 summarizes how problem-based learning model promotes students' learning motivation from three main aspects: learning activities, learning objectives and teaching strategies.

TABLE 4 Problem-based learning model to enhance junior high students' learning motivation

Lessons	Learning Activities	Objectives	Technologies / Strategies
1	Orientation—Learning Model and Students' Learning Motivation	1.To introduce the concept and significance of Students' Learning Motivation. 2.To establish good teacher-student and student-student relationships for subsequent courses. 3.To introduce the Problem Based Learning Model and course planning.	1. Introduce 2. Lecture 3. Group discussions and question. 4. Games playing 5. Reflection
2	Activation—Where did you go on vacation?	1.To stimulate students' interest in learning and background knowledge 2.To understand the students' completion and the gap between each group 3.To develop students' awareness of problem solving	1. Lecture 2. Teamwork 3. Group discussion. 4. Individual reflection
3	Activation—What's your favorite subject?	1.To recognize how to arrange their time appropriately in certain time or in the week and write a letter to describe their own time schedule. 2.To develop their self-directed learning ability and cooperative ability by completing group work activities. 3.To stimulate the students' learning interest and cultivate their cooperative ability by participating the learning activities.	1. Discussions 2. Game playing 3. Practice and Exercises 4. Sharing 5. Self-exploration

TABLE 4 (CONTINUE)

Lessons	Learning Activities	Objectives	Technologies / Strategies
4	Activation—I'm more outgoing than my sister	1. To stimulate students' interest in learning about theme topics by combining reading texts with real life 2. To activate students to participate in classroom activities willingly by discussing with their group members. 3. To reconstruct the pattern of deep thinking by comparing the content of the text with their own daily situation.	1. Video 2. Quick question 3. Role Reversal 4. Teamwork 5. Exercise 6. Summary
5	Activation—I am going to study Computer science	1. To pronounce the new words and expressions and know their meanings. 2. To use the target sentences to "be going to" and "want to be" to talk about their future. 3. To make their study plan and get them to know they should do lots of thing to make their dreams come true. 4. To get the meanings of resolutions and decide to make their own resolutions.	1. Free talk 2. Discussion 3. Role-playing 4. Self-reflection
6	Persistence—How often do you exercise?	1. To stimulate students' interest by their interests. 2. To mobilize the background knowledge of the students and guide the topic. 3. To develop the students to find the problems under the help of their group members.	1. Perspective Drawing 2. Diary Reflection 3. Presentation 4. Feedback and discuss

TABLE 4 (CONTINUE)

Lessons	Learning Activities	Objectives	Technologies / Strategies
7	Persistence—The Storm Brought People Together	1. To develop students' resilience and problem-solving sense when encountering difficulties 2. To enhance students' language literacy and higher-order thinking skills 3. To cultivate students' deeper comprehension and critical thinking ability	1. Quick question 2. Video 3. Emotion Journal 4. Role-Playing 5. Goal Setting 6. Summary
8	Persistence—Do You Know When Basketball Was Invented?	1. To deal with some words and expressions related to the invention and development of basketball. 2. To perceive the importance of persistence and perseverance in learning from the characters in the reading material 3. To solve the problems within the group and present their own opinions after they had a heated discussion with group members.	1. Presentation 2. Reflection exercises 3. Role-playing 4. Case study 5. Summary
9	Persistence—Trouble Is a Friend	1. To activate background knowledge and be familiar with the related reading topics. 2. To learn to analyze and solve problems in the target language. 3. To use the strategy of skimming, summarize the general idea of the article and form a mind map.	1. Presentation 2. Video 3. Role-playing 4. Teamwork 5. Summary

TABLE 4 (CONTINUE)

Lessons	Learning Activities	Objectives	Technologies / Strategies
10	Intensity——How I Learned to Learn English	1. To develop a correct attitude to learning and a clear motivation for learning. 2. To comment appropriately on the methods and intensity of learning. 3. To plan balance the studies with their hobbies and interests and learn to find ways to solve problems positively when they encounter difficulties.	1. Video 2. Discussion and sharing 3. Game playing 4. Reflection and feedback 5. Summary
11	Intensity——A 22-year-old computer programmer	1. To stimulate students' interest and motivation to participate in classroom activities by the introduction of theme songs and the novelty of detective stories 2. To cultivate students' cooperative spirit and critical thinking through group cooperative thinking and reporting 3. To make students get the benefits of continuous learning and thinking by setting and completion of self-learning goals	1. Game playing 2. Discussion 3. Exercise 4. Case Analysis 5. Group task
12	Intensity——From Problems to Solutions	1. To foster students' divergent and critical thinking by connecting the reading of texts to personal experience. 2. To utilize a question chain format that leads students to continually think, analyze, and solve problems through constant questioning, follow-up questions, etc.	1. Video 2. Quick question 3. Discussion and sharing 4. Brainstorm 5. think-pair-share 6. Reflection

TABLE 4 (CONTINUE)

Lessons	Learning Activities	Objectives	Technologies / Strategies
13	Intensity——A Beautiful Earth	1. To enjoy the natural scenery of the world and attach much importance to protecting the Earth. 2. To strengthen the students' sense of a community with a shared future for mankind via discussing the measures of protecting the Earth. 3. To infer the relationship of the possible reasons of pollution and viable solutions to this problem 4. To develop a critical thinking and express themselves creatively when discussing the topic of environmental protection in groups.	1. Presentation 2. Review 3. Discuss 4. Exercise 5. Summary
14	Reflection and conclusion	1. To review and summarize relevant definitions of learning motivation and problem-based learning 2. To deep discussion and thinking about problem-based teaching efficiently 3. To rethink of learning and also the problems existing in the course	1. Presentation 2. Review 3. Reflection 4. Group Sharing and Discussion 5. Personal Reflection Exercise 6. Goal Setting 7. Testing

Phase 3 Evaluate the effectiveness of the Problem-based Learning model for enhancing learning motivation of Junior high school students

This phase includes two hypotheses to be tested, as follows:

1. After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

2. After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

4.3.1 The effectiveness of the problem-based learning model

1) After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

In order to investigate whether junior high school students' motivation to learn English reading changed significantly after participating in the PBL learning model, we conducted a paired-sample t-test on the total mean scores before and after the English reading learning motivation questionnaire, as shown in Table 5.

From the Table 5, it shows that problem-based learning model strengthens students' learning motivation and continues to sustain it in the follow-up phase. Students in the experimental class were more motivated in the follow-up stage (M=115.88, SD=16.021) than in the pre-test (M=79.55, SD=17.681), and, less motivated than in the post-test (M=143.82, SD=14.123).

TABLE 5 Junior High Students' Learning Motivation in Pre-, Post-, and Follow-up (n=33)

Experimental Stage	Group	*M*	*SD*
Pre-test	Experimental group	79.55	17.681
	Control group	79.54	17.723
Post- test	Experimental group	143.82	14.123
	Control group	79.65	17.421
Follow-up	Experimental group	115.88	16.021
	Control group	79.68	17.324

From the Table 6, the three components of problem-based learning are activation, persistence and intensity, what have been enhanced separately. Experimental students' activation were more motivated in the follow-up stage (M=34.79, SD=4.853) than in the pre-test (M=31, SD=4.555), and, less motivated than in the post-test (M=37.94, SD=5.018). Experimental students' persistence were more motivated in the follow-up stage (M=35.01, SD=4.684) than in the pre-test (M=28.58, SD=3.857), and, less motivated than in the post-test (M=37.18, SD=5.359). Experimental students' intensity were more motivated in the follow-up stage (M=30, SD=4.854) than in the pre-test (M=29.18, SD=4.959), and, less motivated than in the post-test (M=32.58, SD=3.905).

TABLE 6 Compare the Components of Learning Motivation in Pre-, Post-, and Follow-up Periods (n=33)

Components	Stage	Group	*M*	*SD*
Activation	pre	Experimental group	31	4.555
		Control group	31.06	4.623
	post	Experimental group	37.94	5.018
		Control group	31.07	4.582
	follow-up	Experimental group	34.79	4.853
		Control group	31.09	4.714
Persistence	pre	Experimental group	28.58	3.857
		Control group	28.34	3.903
	post	Experimental group	37.18	5.359
		Control group	28.36	3.906
	follow-up	Experimental group	35.01	4.684
		Control group	28.41	3.901
Intensity	pre	Experimental group	29.18	4.959
		Control group	29.24	4.961
	post	Experimental group	32.58	3.905
		Control group	29.26	4.896
	follow-up	Experimental group	30	4.854
		Control group	29.25	4.918

2) After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

As shown in Table 7, the between-subject effects of time and grouping are displayed. The corresponding p-value for time is <0.001, indicating that the differences in English reading motivation levels of junior school students measured before, after, and one month later are statistically significant. The p-value for time*group is also <0.001, indicating an interaction between time and grouping. This suggests that the English reading motivation levels of junior school students measured at different times (pre-test, post-test, and one month later) vary depending on the group (experimental and control). For Time: F= 66.887, p < 0.001, partial η^2 = 0.411, For Time*Grouping: F= 41.278, p < 0.001, partial η^2 = 0.301.

Table 7 Test for Between-Subjects Effects

Variation source	SS	df	MS	F	P	Partial η^2
group	46938.624	1	46938.624	145.052	.001	.430
Error	62130.981	192	323.599			
time	43289.022	2	21644.511	66.887	.001	.411
Error	62130.981	192	323.599			
Time*group	26715.329	2	13357.664	41.278	.001	.301
Error	62130.981	192	323.599			

4.3.2 The feedback from learning activity

During these learning activities, researcher has developed 14 sections for enhancing students' learning motivation, and also receive their learning logs, as Table 8 described.

TABLE 8 Feedback received by junior high students during each learning activity (obtained from learning logs).

Activities	What I learned/applied
1. Orientation	1. We have a preliminary understanding of the content of this course and realize the importance of learning motivation for our junior high school students. 2. The general idea of the course plan and main goal. 3. Have a mutual understanding between team members, the task of learning division of labor is necessary.
2. Activation	1. The topic is very interesting, let me know other classmates' hobbies. 2. The process of communication, willing to express themselves more, and group together to solve problems in reading, including guess words meaning, summed up the effect, etc. 3. The learned in the text to find more topics and the classmates together to share our point of views. 4. Summarize and paraphrased other teammates' point of view and let us think more clearly.

TABLE 8 (CONTINUE)

Activities	What I learned/applied
3. Activation	1. We discussed our favorite themes and reasons, have gained a more rational understanding of our preferences. 2. We discussed the problems in the study of chapters and gave rationalized suggestions in connection with the reality. 3. We felt that every subject is interesting and has its own significance and expressed our intention to try more class activities.
4. Persistence	1. Understand the learning state of ourselves, whether we are able to maintain the enthusiastic of a subject for a sustained period of time. 2.Members of the group shared our own learning experiences, including the length of time their learning lasted, analyzed the reasons and provided suggestions to help each other. 3. Summarize and report on the reasons for not being able to sustain their learning, set up goals and plans suitable for us to overcome learning shortcomings.
5. Persistence	1. Practiced the process of self-management, observing whether one's own behavior is consistent with the goal and discovering the existing problem. 2. Discussed each other's problematic issues with small groups of classmates and worked together to find out the causes. 3. Studied the successful cases in the reading text together and summarized their effective methods and strategies. 4. Develop our own daily planning according to their own specific situation and share it with the group members.

TABLE 8 (CONTINUE)

Activities	What I learned/applied
6. Tensity	1. Compared the differences between our own situations and the other classmates about the intensity of learning. 2. Discussing the impact of intensity on our learning and life. 3. We need to increase the intensity of our study if we want to make faster progress and get better results. 4. When we study, on the one hand, we should not be in a hurry, and on the other hand, we should try to ensure a certain amount of time for study every day. 5. Learning motivation, perseverance and ability can determine how far we can go on the road of learning.
7.Tensity	1. If the learning period is stretched too far and a certain concentration of intensity is not maintained, the learning effect will be greatly reduced. 2. In learning, it is necessary to be persistent and maintain a certain intensity, so as to ensure the effectiveness of learning and achieve the learning objectives.
8. Summary	1. In order to achieve the set goals, we must know the real problems and solve them step by step. 2. Learning is more than just self-learning; we need to learn to share our learning experiences and exchange ideas with others. We can join study groups, participate in online and offline study exchange activities, and learn and grow with like-minded people. 3. We can start from learning our favorite subjects, and gradually transition to the interest of learning other subjects. 4. Through effective time management, we can avoid procrastination improve our learning efficiency and keep our learning continuous and stable. 5. Problem-based teaching focuses on our students learning to identify problems by ourselves, solving them with our classmates, and, of course, learning to be creative.

CHAPTER 5
CONCLUSION AND DISCUSSION

This chapter is made a summary, discussion and given some suggestion, which mainly based on the study A Development the Problem Based Learning Model for Enhancing Learning Motivation in English Reading of Junior High School Students.

5.1 Research Objectives

5.1.1 To study the definition, components of learning motivation for students in junior high school.

5.1.2 To develop the problem-based learning model for enhancing the students' learning motivation in junior high school.

5.1.3 To evaluate the effectiveness of the problem-based learning model for enhancing students' learning motivation in junior high school.

5.2 Research Hypotheses

For the study, the researcher used the following assumptions:

The researcher evaluated the problem-based learning model to enhance junior high school students' learning motivation. It covered two hypotheses:

5.2.1 After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

5.2.2 After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

5.3 Research Scope

Researcher divided this study into two phases:

Phase 1: Study the definition and components of junior high school students' learning motivation.

In this phase of the study, the literature and research related to learning motivation are studied, as well as interviews with relevant experts in educational psychology. On the basis of this, the term definition and constituent elements of junior high school students' learning motivation are put forward, and a method of measuring learning motivation is proposed. The content consistency check is used to evaluate the learning motivation of junior high school students, and the data is collected into the sample.

Phase 2: Develop the problem-based learning model to promote learning motivation in junior high school students

The research in this phase covers the second research objective, and the researcher develops a problem-based learning model. Through the review of Collins et al., Engel and Barrows on the concept, theory and literature of PBL, as well as the interview data of authoritative experts, we can understand the viewpoint theory and literature about PBL furtherly. In the Chinese social environment, problem-based learning model includes five steps: Problem Posing, Task Allocation, Information Collection, Group Presentation, Comprehensive Evaluation. The researcher developed 14 learning programs that used student-centered learning strategies and psychological techniques.

Phase 3: Evaluate the effectiveness of the Problem-based Learning model for enhancing learning motivation of Junior high school students

The research in this phase covers a third research objective, which is the experimental evaluation of problem-based learning model. The improved problem-based learning model was applied to the sample designed for the pre-test and post-test of the experimental group. There were three phases: the pre-experimental phase, the post-test phase, and the follow-up phase. During the one-month experiment, the sample was junior high students in Grade eight. In December 2023, the first semester of the school year, two parallel classes participated in this experiment, each one includes 33 students, with a more equal distribution of male and female students. Among them, the

experimental group received the problem-based learning model, while the control group did not receive any learning model during this period.

5.4 Research Conclusion

5.4.1 Conclusion of Phase 1: study the definition and components of learning motivation in junior high school students

The results of the study found that the definition of Junior high school students' learning motivation can be summarized as a dynamic tendency to stimulate and maintain students' learning activities, which makes students move towards a certain learning goal, and is also an internal process for students to complete their learning tasks and improve their learning enthusiasm. It consists of the following three components: activation, persistence and intensity. Activation refers to a decision of students to take the initiative in learning activities. Persistence refers to a striving from students can continue to solve problems and complete learning goals or tasks for a long period of time even if they are unable to do some study problems or have too much homework in the learning process. Intensity refers to an automatic response to a learning situation.

5.4.2 Conclusion of Phase 2: develop the problem-based learning model for enhancing the learning motivation of junior high school students in English reading

Problem-based Learning model is mainly developed on the basis of cognitive theory, constructivism theory and cooperative learning theory.

In the cognitive perspective of learning motivation, students' thoughts influence their motives, which in turn affect their behavior. Their objectives, expectations, belief in their own abilities, attributions, and confidence in controlling the environment can elucidate the reasons behind their actions. Stemming from social learning theory, cognitive theory posits that individuals acquire knowledge by observing others while considering the interplay between environment, behavior, and cognition (Dollard et al., 2013). These three factors are dynamic and interconnected rather than static or independent. Extensive research had been conducted on contextual factors' impact on cognition within Problem-Based Learning (PBL), with a focus on autonomy,

collaboration, scaffolding, and authenticity. Situated cognition studies propose that learning is most effective when it closely mirrors real-life situations where acquired knowledge will be applied. Therefore, instructional approaches should prioritize problem-solving contexts to enhance retention and practical application of knowledge.

Constructivism theory highly emphasized the importance of students' previous experience, knowledge construction, learning by doing and cooperating. The theory of constructivism places great emphasis on the significance of students' prior experiences, their ability to construct knowledge, learning through practical application, and collaboration. These aspects provide substantial and robust theoretical support for problem-based learning (PBL). In PBL, the questions posed are situated in real-life scenarios, allowing students to fully leverage their past experiences when tackling problems. Additionally, group work is a fundamental component of PBL. By creating an optimal group environment that facilitates efficient knowledge construction and processing, this approach fosters students' cooperative awareness and encourages them to develop effective strategies for overcoming challenges encountered in everyday life.

Cooperative learning is an instructional method that integrates theories and strategies to facilitate collaborative and supportive learning among a diverse group of students. By collectively striving towards shared educational objectives, the overall performance of the group is enhanced while simultaneously promoting individual growth. Through cooperative learning, students become part of a collective entity where everything revolves around common interests. They engage in teaching and learning from one another, exchanging knowledge in the process. These interactions contribute to fostering team spirit and communication skills among students. Various forms of group discussions not only cultivate self-regulation and determination but also sustain their learning motivation to persist with tasks. In this teaching approach, teachers create problem scenarios for students to work on as a group, thereby motivating them to transition from passive learners to active participants.

According to the second objective of this study, the researcher developed a problem-based learning model to improve the learning motivation of junior high school students. Through the review of Collins et al., Engel and Barrows on the concept, theory and literature of PBL, as well as the interview data of authoritative experts, we can understand the viewpoint theory and literature about PBL furtherly. In the Chinese social environment, problem-based learning model includes five steps: Problem Posing, Task Allocation, Information Collection, Group Presentation, Comprehensive Evaluation.

1) Problem Posing. In the pre-reading stage, teacher used various ways to create a real situation related to the reading materials to stimulate students' learning interests. Through these problems, students' existing knowledge could have a connection with the new knowledge in their cognitive structure.

2) Task Allocation. Students had to discuss and explore problems with other members. After the problems having been presented, students worked in groups to discuss the final answer and produced new problems. During discussion, students became the group leader who organized the discussion and tasks. And teacher played the role as a guide and promoter.

3) Information Collection. The leader in the groups put forward the problem, while the informant collected information from other books or extra reading materials. Meanwhile, the recorder wrote down the group's views and opinions and the reporter showed the final results to the whole class. Students were guided to cooperate with other group members in order to finish their own task.

4) Group Presentation. Each group showed their discussion results to the whole class after analyzing the problems. The presenting group expressed their answers about the questions and also put forward other questions. The other groups were required to take notes and expressed their different views about the reading materials. In addition, the other groups also asked new problems to the whole class.

5) Comprehensive Evaluation. The evaluation included three forms: self-evaluation, peer-evaluation, and teacher-evaluation. Teacher guided students to do self-evaluation and peer-evaluation. Specifically, the criteria of evaluation focused on the

learning process instead of the learning results. In addition, teacher offered advice and suggestions for students according to their shortcomings.

The researcher developed 14 learning programs that used student-centered learning strategies and psychological techniques. Therefore, the consistency index of the purpose and design activity of the analysis of the problem-based learning model is between 0.67 and 1.00.

5.4.3 Conclusion of Phase 3: Evaluate the effectiveness of the Problem-based Learning model for enhancing learning motivation of Junior high school students

In line with the third objective of this study, the researcher evaluated the problem-based learning model to enhance middle school students' learning motivation. It covered two hypotheses, and the following results were obtained:

(2.1) Research hypothesis: After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

Through the collection and analysis of junior high school students' learning motivation questionnaire data, after the experiment, the mean value of experimental group before PBL learning model is 79.55, and the standard deviation is 17.681. The mean value of experimental group after PBL learning mode is 143.82, and the standard deviation is 14.123. The mean value of the difference between before and after is -64.273, and the standard deviation is 23.199, and the difference is statistically significant: t (32) = -15.915, p=000<.05. The result of the study shows that PBL learning model has a positive effect on students' motivation to learn English reading.

After conducting data analysis and closely observing the three components that drive learning motivation, the researchers have arrived at the following findings. The data of the experiment showed that the pre-test mean of Activation is 31, with a standard deviation of 4.555, and the post-test mean is 37.94, with a standard deviation of 5.018, t(32) =-6.264, p=.00<.05. The pre-test mean of Persistence is 28.58, with a standard deviation of 3.857, and the post-test mean is 37.18, with a standard

deviation was 5.359, t(32)=-7.438,p=.00<.05. The pre-test mean of Intensity was 29.18 with a standard deviation of 4.959, and the post-test mean was 32.58 with a standard deviation of 3.905, t(32)=-3.433,p=.002<.05. The study results shows that the PBL learning model has an effect on students' motivation to learn English reading. Activation, Persistence, and Intensity have positive effects on all three aspects.

We can also get the point that the correlation between Persistence's mean rank and Activation's mean rank. As shown from the data analysis, the average grade of Persistent was statistically correlated with the average grade of Activation, r = .884 (p < .01). The higher the student's Activation, the higher the Persistent. The average grade of Persistent was statistically correlated with the average grade of Intensity, r = .616 (p < .01). The higher the student's Intensity, the higher the Persistent. The result of the study shows that among the three components of learning motivation in English reading, both activation and intensity have a positive effect on persistence.

The three components of problem-based learning are activation, persistence and intensity, what have been enhanced separately. Experimental students' activation was more motivated in the follow-up stage (M=34.79, SD=4.853) than in the pre-test (M=31, SD=4.555), and, less motivated than in the post-test (M=37.94, SD=5.018). Experimental students' persistence was more motivated in the follow-up stage (M=35.01, SD=4.684) than in the pre-test (M=28.58, SD=3.857), and, less motivated than in the post-test (M=37.18, SD=5.359). Experimental students' intensity was more motivated in the follow-up stage (M=30, SD=4.854) than in the pre-test (M=29.18, SD=4.959), and, less motivated than in the post-test (M=32.58, SD=3.905). On the whole, Students in the experimental class were more motivated in the follow-up stage (M=115.88, SD=16.021) than in the pre-test (M=79.55, SD=17.681), and, less motivated than in the post-test (M=143.82, SD=14.123).

As a result, the problem-based learning model strengthens students' learning motivation and continues to sustain it in the follow-up phase. It indicated that after the experiment and at the end of the follow-up period, junior high school students

in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

(2.2) Research hypothesis: After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

As shown from the data, the results indicate significant effects of time and grouping on English reading learning motivation levels among junior school students. The p-value associated with time is less than 0.001, indicating a statistically significant difference in motivation levels when measured before, after, and one month later. This suggests that the students' motivation to read in English varied significantly over time.

Furthermore, the p-value for time*grouping is also less than 0.001, suggesting an interaction between time and grouping. This means that the impact of time on English reading motivation levels differed depending on whether the students were part of the experimental or control group. In other words, their motivation to read in English was influenced by both the measurement times (pre-test, post-test, and one month later) as well as their group assignment. The statistical analysis further supports these findings. For Time: F=66.887, p<0.001, partial η^2 = 0 .411; this indicates a large effect size (partial η^2 = 0 .411), demonstrating that time has a substantial influence on English reading motivation levels among junior school students. Similarly, for Time*Grouping: F=41.278, p<0 .001, partial η^2 = 0 .301; this shows another large effect size (partial η^2 = 0 .301), indicating that there is a considerable interaction between time and grouping when it comes to influencing English reading motivation levels.

Overall, these findings highlight the importance of considering both timing and group dynamics when studying English reading motivation among junior school students. It suggests that interventions aimed at improving their motivation

should take into account not only individual differences but also how these may change over different measurement periods within specific groups or contexts.

5.5 Research Discussion

5.5.1 Discussion of Objective 1: To study the definition, components of learning motivation for students in junior high school.

The first phase of the study aims to define and outline the components of junior high school students' learning motivation through literature review and expert interviews. The discussion results are as follows:

1)Definition of learning motivation

After conducting a comprehensive review of the existing literature on learning motivation, learning motivation as described by Pintrich, Schunk and Don, is a multifaceted process encompassing goals, physical and mental engagement, and both initiation and sustenance (Pintrich et al., 1987). It can be inferred that motivation plays a significant role in determining the success of learners. Cole defines learning motivation as an internal state that prompts, guides, and perpetuates behavior (Cole, 2007). Learning motivation primarily focuses on cognitive responses such as students' inclination to engage in meaningful academic activities with the intention of deriving benefits from them (Brophy, 2004). It serves as a driving force that energizes, maintains momentum for, and directs students' behavior towards achieving specific objectives (Eggen & Kauchak, 2004). Students who possess learning motivation exhibit attentive participation during lessons while actively reading materials to comprehend their content through various supported learning strategies. Additionally, they demonstrate curiosity by seeking out relevant sources to enhance their understanding of specific topics and diligently completing assigned tasks. However, learning motivation can be comprehended as the act of encouraging students to willingly dedicate their time actively towards specific activities, fostering not only initiation but also sustained engagement throughout their lifespan.

Expert A emphasized the importance of learning motivation as a key driver for individuals to acquire knowledge and enhance their skills. It serves as an

internal impetus that fuels one's eagerness to learn and make progress in various aspects of life. This intrinsic motivation can stem from diverse sources, such as personal interests, curiosity, or the pursuit of goals. Expert B argued that learning motivation is the underlying force behind one's aspiration to gain knowledge and make advancements. Expert C defined learning motivation as a motivational inclination that guides and sustains students' learning behavior towards specific academic objectives. It is closely linked to students' enthusiasm for learning, educational requirements, personal values, attitude, ambition level, and external support. According to Expert D's perspective, learning motivation represents a significant theory at the intersection of pedagogy and psychology encompassing multiple levels of definition and connotation. During an interview with Expert E on this topic, they highlighted that learning motivation pertains to the internal drive directly stimulating or inhibiting learning activities based on individual needs.

2)Components of learning motivation

According to Bandura, the components of learning motivation are seen as a complex phenomenon that involves selecting activities from various options, putting in intense effort, and maintaining perseverance (Bandura, 1997). Schiefele and Rheinberg (1997) provide a more detailed description of how motivation and cognition interact with each other. Their argument suggests that learning motivation encompasses three dimensions related to the frequency and continuity of engaging in educational tasks, the methods employed for these tasks, as well as the learner's emotional state during the process. Within this framework, we sought to identify factors that could potentially influence how initial motivation impacts performance. According to Ryan and Deci, learning motivation is considered the central aspect of biological, cognitive, and social regulation (Ryan & Deci, 2000). They argue that learning motivation encompasses the energy, direction, persistence of activation, as well as intention. These inquiries give rise to three crucial elements of learning motivation: activation, selection-direction, and response preparedness (Perwin, 2003). Sandhu further emphasized that key

components of learning motivation include activation, perseverance, and intensity (Sandhu, 2020).

At the same time, it is found that the interviewed experts agreed that these three components can help educators, parents, and policymakers to foster positive learning environment to enhance student's learning motivation. Expert A emphasized that these three components are essential according to learning motivation theory. In the activation component, what needs to be considered are the students' attitudes and their desire to participate in activities. In addition, since the attitudes and desires of students can significantly influence internal motivation, they are particularly important. Professor B pointed that individual interest can also influence motivations. Cultural and social influence can play important role and also learning goals can affect student's learning motivation. Expert C addressed that participating in discussions is beneficial, and it's useful to encourage students to seek out additional resources related to their interest. Collaborative learning through active peer and social support and allowing students to choose projects or topics of interest can increase their learning motivation. Expert D mentioned that learning motivation encompasses both intrinsic factors, such as personal interest, curiosity, and a thirst for knowledge, as well as extrinsic factors like societal recognition, familial expectations, and career aspirations. These dynamic elements interact with one another to form the comprehensive essence of the theory of learning motivation. Expert E emphasized that learning motivation primarily refers to the inclination that guides and sustains learners' engagement in educational activities while directing them towards specific academic objectives. It comprises both external incentives and internal drives encompassing learning needs, emotions associated with learning experiences, and individual interests. This is manifested through various learning goals such as striving for academic excellence, seeking parental approval or affectionate support, or deriving pleasure and a sense of accomplishment from the act of acquiring knowledge itself.

Hence, the definition of Junior high school students' learning motivation can be summarized as a dynamic tendency to stimulate and maintain

students' learning activities, which makes students move towards a certain learning goal, and is also an internal process for students to complete their learning tasks and improve their learning enthusiasm. It consists of the following three components: activation, persistence and intensity.

5.5.2 Discussion of Objective 2: To develop the problem-based learning model for enhancing students' learning motivation in junior high school.

The second phase of this study aimed at developing and evaluating the experiment using the problem-based learning model to promote learning motivation in junior high students and the findings are discussed below:

This is a series of learning activities, including: (1) Problem Posing, (2) Task Allocation, (3) Information Collection, (4) Group Presentation, (5) Comprehensive Evaluation. Savery & Duffy argue that the foundation of PBL is rooted in a constructivist perspective on human cognition, which suggests that genuine knowledge is acquired through our interactions with the surrounding environment rather than through isolated or decontextualized facts (Savery & Duffy, 1995).

According to Piaget's cognitive constructivist approach, learners actively build their understanding by transforming, organizing, and reorganizing their existing knowledge and information. Vygotsky and Cole emphasized that cognitive skills have their roots in social relations and students construct knowledge by interacting with others (Vygotsky & Cole, 1978). Constructivism-based learning relates closely to the nature of knowledge, truth and human interaction. The PBL approach has been extensively utilized across various fields, employing the fundamental model proposed by Barrows (1996). Students are entrusted with the responsibility of their own learning, while collaboration within groups is crucial. It is recommended to conduct self and peer assessments upon completion of each problem and at the conclusion of every curricular unit. According to Hmelo-Silver (2004), students collaborate in groups to identify their learning needs for problem-solving, engage in self-directed learning, and apply newly acquired knowledge to address the problem at hand (Hmelo-Silver, 2004).

The second objective of the study was to develop a problem-based learning model as a means of promoting motivation in Junior high school students. With this in mind, the results of this phase of provided with a Problem-based Learning Model, which consists of 14 lesson planning. Each plan consists of five steps: Problem Posing, Task Allocation, Information Collection, Group Presentation, Comprehensive Evaluation. Each activity takes 60 minutes. The criterion for passing and eligibility for use is considered to be a satisfactory index value of 0.50 or above. In this study, the problem-based learning model was through three experts and tested with a professional measurement tool, the results showed that the range of Consistency Index's range is (0.67-1.00). Consequently, it can be used to promote learning motivation in junior high school students.

5.5.3 Discussion of Objective 3: To evaluate the effectiveness of the problem-based learning model for enhancing students' learning motivation in junior high school.

The third objective of the study was to evaluate the effectiveness of the problem-based learning model for enhancing learning motivation among junior secondary school students. It covered two hypotheses, and the following discussion were provided:

(2.1) Research hypothesis: After the experiment and at the end of the follow-up period, junior high school students in the experimental class who accepted the problem-based learning model had improved their learning motivation compared with that before the experiment.

It was found that there is a difference in the average academic learning motivation values of junior high students. For the experimental class, the mean score of learning motivation after the experiment was higher than that before the experiment. According to the first hypothesis, learning model in this research can enhance students' learning motivation and persist in follow-up stage. After analyzing the test results, a two-indicator assessment of students' learning motivation in the pre-experiment, post-experiment, and follow-up phases revealed that the post-experiment learning motivation was higher than the pre-experiment average. The results of the experiment show that it

strengthens students' motivation and continues to sustain it in the follow-up phase. This can be explained by the fact that students participated in an open-ended learning activity that demonstrated their ability and effort, which are important for their learning motivation development. Practicing activities that required clear objectives, practicing the process of focusing on learning without distractions, and receiving positive support and reinforcement from the researcher and fellow students. This gave the students the motivation to overcome difficulties, such as strength, indomitability, and sustained pressure in the face of difficulties.

For instance, in the ninth section of learning activities, which is about persistence that one component of the learning motivations. In order to maintain a strong and sustained motivation to study, it is necessary to start from the heart. Students need to examine why they want to learn? What is the meaning of learning? To form an understanding, firm confidence, stimulate their own inner vitality. Problem-Based Learning specifically promotes critical thinking in students by providing activities that involve questioning, discussing problems, and developing solutions related to the course topic. Collaborative groups are formed where students identify their learning needs in order to effectively solve a problem. They engage in self-directed learning and subsequently apply their newfound knowledge to address the problem at hand. Reflection on what has been learned and the effectiveness of employed strategies is an integral part of this process. This lesson was in the form of a letter, and the introduction of a theme-related song reached a match with the psychological characteristics and the psychological problems faced by students of this age group. It allowed students to build bridges of communication and trust with the researcher and with their classmates. A question-and-answer exchange allowed us to understand the students' real thoughts when they encountered problems and the differences in each student's point of view. Eventually, through mutual help among peers, students consulted and reported to the researcher. Different education and guidance were given to each student on the solution to the question of "whether or not they can persevere when encountering learning

problems" according to the differences in their individual situations. Most of the students were convinced of the significance of learning and their belief in learning.

In addition, according to the information recorded in the learning/activity log of the students after they participated in the activity, most students saw the benefits of this activity. Student A wrote a note: “When we study, on the one hand, we should not be in a hurry, and on the other hand, we should try to ensure a certain amount of time for study every day.” Student B mentioned in her study journal: “In learning, it is necessary to be persistent and maintain a certain intensity, so as to ensure the effectiveness of learning and achieve the learning objectives.” Student C notes that learning is more than just self-learning. we need to learn to share our learning experiences and exchange ideas with others.” Student D recognized that they can join study groups, participate in online and offline study exchange activities, and learn and grow with like-minded people, and so on. Therefore, when students receive the problem-based learning model, they can clearly see their goals and know how to achieve them, thus achieving their learning goals well.

From the above elaboration, we can draw the conclusion that experimental group’s students who has received PBL performed very well in learning motivation. At the end of the experiment and in the follow-up stage, the students' learning motivation in English reading was also enhanced.

Combined with the review of literature and expert interviews, the researcher defined the learning motivation of junior high school students in this study as including the following three aspects: activation, persistence and intensity.

According to Ryan and Deci, motivation encompasses the mobilization of energy, determination of direction, persistence in action, as well as intention (Ryan & Deci, 2000). Activation involves making deliberate decisions to initiate a behavior; persistence refers to the sustained effort towards achieving a goal, while intensity can be observed in the unwavering pursuit of goals. Traditionally, researcher has explored learning motivation with the aim of addressing three primary questions: what triggers an individual's motivation, what influences their selection among different behaviors, and

why people respond differently to similar motivational stimuli. Kahu et al. demonstrated that students' interest plays a pivotal role in driving engagement; only when students are genuinely interested will they be motivated to actively participate in activities that facilitate learning and subsequently exhibit persistent behavior (Kahu et al., 2017). Intensity represents the level of concentration and vigor invested in pursuing a goal. For instance, one student may exert minimal effort into their studies (low intensity), whereas another student consistently engages in studying, actively participates in class discussions, and takes advantage of additional research opportunities outside of class (high intensity).

From the data study, Activation, Persistence, and Intensity have positive effects on all three aspects. The pre-test mean of Activation is 31, with a standard deviation of 4.555, and the post-test mean is 37.94, with a standard deviation of 5.018, $t(32)=-6.264, p=.00<.05$. The pre-test mean of Persistence is 28.58, with a standard deviation of 3.857, and the post-test mean is 37.18, with a standard deviation was 5.359, $t(32)=-7.438, p=.00<.05$. The pre-test mean of Intensity was 29.18 with a standard deviation of 4.959, and the post-test mean was 32.58 with a standard deviation of 3.905, $t(32)=-3.433, p=.002<.05$. It shows that the PBL learning model has an effect on students' motivation to learn English reading. It represents the correlation between Persistence's mean rank and Activation's mean rank. The average grade of Persistent was statistically correlated with the average grade of Activation, $r = .884$ ($p < .01$). The higher the student's Activation, the higher the Persistent. Focus on the correlation between Persistence's mean rank and Intensity's mean rank, the average grade of Persistent was statistically correlated with the average grade of Intensity, $r = .616$ ($p < .01$). The higher the student's Intensity, the higher the Persistent.

To sum up, from the three aspects of activation, persistence and intensity, students' learning motivation in English study is promoted after practicing the experiment. Furthermore, based on the evidence and existing research, it can be observed that regulating students' interest and level of engagement in learning has a beneficial effect on their continued commitment to acquiring knowledge.

The experiment has enhanced the students' learning motivation through 14-lesson activity of PBL model in the eighth grade for three months. According to the data displayed, this strengthens students' learning motivation and continues to sustain it in the follow-up phase. Students in the experimental class were more motivated in the follow-up stage (M=115.88, SD=16.021) than in the pre-test (M=79.55, SD=17.681), and, less motivated than in the post-test (M=143.82, SD=14.123). The three components of problem-based learning are activation, persistence and intensity, what have been enhanced separately. Experimental students' activation was more motivated in the follow-up stage (M=34.79, SD=4.853) than in the pre-test (M=31, SD=4.555), and, less motivated than in the post-test (M=37.94, SD=5.018). Experimental students' persistence was more motivated in the follow-up stage (M=35.01, SD=4.684) than in the pre-test (M=28.58, SD=3.857), and, less motivated than in the post-test (M=37.18, SD=5.359). Experimental students' intensity was more motivated in the follow-up stage (M=30, SD=4.854) than in the pre-test (M=29.18, SD=4.959), and, less motivated than in the post-test (M=32.58, SD=3.905).

In China, the adoption of a Problem Based Learning approach plays a crucial role in addressing the requirements of educational advancement and transforming conventional instructional approaches. In English language teaching, educators may choose more semi-structured problems, which generally provide students with a base for thinking and can easily make them spread their wings of thinking. Guided and driven by such questions, students tend to independently and actively mobilize their prior knowledge and experience to experience the problem situation, rather than just searching for the "only answer" in a certain sense. There is no fixed answer to the question of which mode of teaching should be used, and the main purpose of any teaching method or mode is to better achieve the teaching goals. The use of teaching methods based on problem solving found that, on the one hand, it can make the classroom lively and interesting, can effectively attract the attention of students, so that they can acquire knowledge in colorful activities; on the other hand, the students can independently choose the learning content of interest according to their

own life experience after the class in order to solve the questions left behind in the classroom, so as to improve the efficiency of independent learning and the ability to learn independently.

(2.2) Research hypothesis: After the experiment and at the end of the follow-up period, the level of learning motivation of junior high school students in the experimental class who received the problem-based learning model intervention was higher than that of the control group.

Based on the data, it is evident that time and grouping have significant effects on the motivation levels of junior school students in English reading. The p-value associated with time is below 0.001, indicating a statistically significant difference in motivation levels when measured before, after, and one month later. This suggests that there was a notable variation in students' motivation to read in English over time. Additionally, the p-value for time*grouping is also less than 0.001, suggesting an interaction between time and grouping. This implies that the impact of time on English reading motivation levels differed depending on whether students were part of the experimental or control group.

In other words, their motivation to read in English was influenced by both the measurement times (pre-test, post-test, and one month later) as well as their group assignment. The statistical analysis further supports these findings: For Time: F=66.887, p<0 .001, partial η^2 = 0 .411; this indicates a large effect size (partial η^2 = 0 .411), demonstrating that time has a substantial influence on English reading motivation levels among junior school students. Similarly, for Time*Grouping=41 .278, p<0 .001, partial η^2 = 0 .301; this shows another large effect size (partial η^2 = 0 .301), indicating that there is a considerable interaction between time and grouping when it comes to influencing English reading motivation levels. In conclusion, these findings emphasize the significance of considering timing and group dynamics while studying English reading motivation among junior school students. It suggests that interventions aimed at enhancing their motivation should take into account not only individual differences but

also how these may change over different measurement periods within specific groups or contexts.

On the basis of this research, learning motivation is an important factor in studying, because this desire pushes students to make strong effort in each activity done and plays an important role for academic learning. Therefore, a teacher or lecturer should know if students have high or low motivation in learning English so that teaching and learning process becomes effective and efficient.

5.6 Research Suggestions

5.6.1 Practical Suggestion

This study, based on the cognitive and constructivism theory, applied mixed method with a view to locating the motivational factors of the PBL model, finding out the relationship between PBL and learning motivation, and setting up a problem-based learning model for junior high school students. The future prospects for enhancing this research are substantial.

Firstly, it is imperative to enhance the scope of subjects involved in this study. The current sample size of 66 students lacks adequacy for drawing general conclusions. Secondly, future research should aim at broadening and diversifying teachers' perspectives and team dynamics. Given that these factors can significantly impact students' motivation to learn, there exist numerous other variables worth considering. Hence, it is crucial to augment both the sample size and participants from various disciplines and educational institutions in order to adopt a more effective experimental design. Assisting learners in acquiring and practicing relevant techniques is crucial for maintaining their motivation. Further research on motivational strategies and their applicability to learners would be beneficial. Additionally, exploring the secondary motivational factors identified by this study could yield valuable insights. Researcher may even elevate a secondary factor to a primary one through the implementation of motivational strategies in treatment studies, leading to inspiring conclusions. Comparative studies could then be conducted with more reliable and generalizable results.

5.6.2 Applicational Suggestion

According to the research on the definition and components of junior high school students' learning motivation, as well as the findings of the Problem-based Learning Model, relevant educators should integrate the Problem-based Learning Model into the development planning of junior high school students' English reading courses as a way to enhance their learning motivation. Because the junior high education stage is an important period for adolescent, the English reading program is likewise an important way to improve English literacy in junior high school. It has a mission to make junior high school students have stronger learning motivation so as to meet the syllabus of compulsory education and social needs. Learning motivation is regarded as one of the powers and essential elements for junior high school students to carry out learning activities. In the process of daily teaching and research, researcher could implement the following strategies:

1) The impact of the problem-based learning model on the academic motivation of junior high school students at different grade levels.

2) Evaluate the impact of the problem-based learning model on junior high school students' motivation at regular intervals, e.g., every three or six months.

REFERENCES

Adamma, O. N., Ekwutosim, O. P., & Unamba, E. C. (2018). Influence of extrinsic and intrinsic motivation on pupils academic performance in mathematics. *Online Submission*, *2*(2), 52-59.

Amirkhanova, K. M., Ageeva, A. V., & Fakhretdinov, R. M. (2016). Enhancing students' learning motivation through reflective journal writing. *The European Proceedings of Social and Behavioural Sciences Ep-SBS*.

Anderman, L. H., & Midgley, C. (1998). Motivation and middle school students. *perspective*, *26*(3/4), 325-346.

Archer, J. (1994). Achievement goals as a measure of motivation in university students. *Contemporary educational psychology*, *19*(4), 430-446.

Atkinson, J. W., & Raynor, J. O. (1974). Motivation and achievement. *(No Title)*.

Aulia, H. R., Laeli, A. F., & Ulwiyah, S. (2023). Problem-Based Learning As A Method To Improve Senior High School Student's Reading Comprehension In English. *ELTR Journal*, *7*(2), 77-85.

Awan, R.-U.-N., Noureen, G., & Naz, A. (2011). A Study of Relationship between Achievement Motivation, Self Concept and Achievement in English and Mathematics at Secondary Level. *International education studies*, *4*(3), 72-79.

Azman, N., & Shin, L. K. (2012). Problem-based Learning in English for a Second Language Classroom: Students' Perspectives. *International Journal of Learning*, *18*(6).

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Bandura, A., Pastorelli, C., Barbaranelli, C., & Caprara, G. V. (1999). Self-efficacy pathways to childhood depression. *Journal of personality and social psychology*, *76*(2), 258.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of personality and social psychology*, *41*(3), 586.

Bandura, A., & Walters, R. H. (1977). *Social learning theory* (Vol. 1). Prentice hall Englewood Cliffs, NJ.

Barrows, H. S. (1983). Problem-based, self-directed learning. *Jama*, *250*(22), 3077-3080.

Barrows, H. S. (1986). A taxonomy of problem-based learning methods. *Medical education*, *20*(6), 481-486.

Barrows, H. S. (1988). *The tutorial process*. Southern Illinois University, School of medicine.

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New directions for teaching and learning*, *1996*(68), 3-12.

Barrows, H. S., & Kelson, A. M. (1993). Problem-based learning: A total approach to education. *Monograph. Southern Illinois University School of Medicine, Springfield, Illinois*.

Barrows, H. S., & Tamblyn, R. M. (1980). *Problem-based learning: An approach to medical education* (Vol. 1). Springer Publishing Company.

Batson, L., & Feinberg, S. (2006). Game designs that enhance motivation and learning for teenagers. *Electronic Journal for the integration of Technology in Education*, *5*(1), 34-43.

Bay, D., & Daniel, H. (2003). The theory of trying and goal-directed behavior: The effect of moving up the hierarchy of goals. *Psychology & Marketing*, *20*(8), 669-684.

Bearison, D. J., & Dorval, B. (2001). *Collaborative cognition: Children negotiating ways of knowing*. Bloomsbury Publishing USA.

Berlyne, D. E. (1962). Motivational problems raised by exploratory and epistemic behavior.

Boaler, J. (1998). Alternative approaches to teaching, learning and assessing mathematics. *Evaluation and Program Planning*, *21*(2), 129-141.

Bowden, J. L.-H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: a holistic measurement approach. *Studies in Higher Education*, *46*(6), 1207-1224.

Brandstätter, V., & Bernecker, K. (2022). Persistence and disengagement in personal goal pursuit. *Annual Review of Psychology*, *73*(1), 271-299.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn* (Vol. 11). Washington, DC: National academy press.

Brophy, J. (2003). *Teaching problem students*. Guilford Press.

Brophy, J. (2004). *Motivating students to learn*. Routledge.

Buendía, C. J. M., & Ortega-Martín, J. L. (2018). Motivation: A key issue in the EFL classroom. *International Journal of Diversity in Organizations, Communities, and Nations*, *17*(1), 27.

Chapman, C. (1990). Authentic writing assessment. *Practical Assessment, Research, and Evaluation*, *2*(1).

Cheong, F. (2008). Using a problem-based learning approach to teach an intelligent systems course. *Journal of Information Technology Education: Research*, *7*(1), 47-60.

Chunsuvimol, B., Jiraro, P., Jiraro, S., & Sarowat, S. (2021). Attitude, Motivation, and Learning Behaviour of English Learning of Junior High School, Muslim Thai Students of a School in Bangkok. *St. Theresa Journal of Humanities and Social Sciences*, *7*(1), 81-90.

Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. *Archives of general psychiatry*, *50*(12), 975-990.

Cole, J. S. (2007). *Motivation to do well on low-stakes tests* University of Missouri-Columbia].

Collins, A. (1989). Cognitive apprenticeship and instructional technology. *Center for the Study of Reading Technical Report; no. 474*.

Collins, A., Brown, J. S., & Newman, S. E. (2018). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In *Knowing, learning, and instruction* (pp. 453-494). Routledge.

Corden, R. (2001). Group discussion and the importance of a shared perspective: Learning from collaborative research. *Qualitative Research*, *1*(3), 347-367.

Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual Review of Psychology*, *51*(1), 171-200.

Crookes, G., & Schmidt, R. W. (1991). Motivation: Reopening the research agenda. *Language learning*, *41*(4), 469-512.

Deci, E., & Ryan, R. (1985). Motivation and self-determination in human behavior. NY. In: Plenum Publishing Co.

Dollard, J., & Miller, N. E. (2013). *Social learning and imitation*. Routledge.

Dollard, J., Miller, N. E., Doob, L. W., Mowrer, O. H., Sears, R. R., Ford, C. S., Hovland, C. I., & Sollenberger, R. T. (2013). *Frustration and aggression*. Routledge.

Dörnyei, Z. (1998). Motivation in second and foreign language learning. *Language teaching*, *31*(3), 117-135.

Duch, B. J., Groh, S. E., & Allen, D. E. (2001). The power of problem-based learning: a practical" how to" for teaching undergraduate courses in any discipline. *(No Title)*.

Eccles, J. S., & Midgley, C. (1989). Stage-environment fit: Developmentally appropriate classrooms for young adolescents. *Research on motivation in education*, *3*(1), 139-186.

Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related beliefs. *Personality and social psychology bulletin*, *21*(3), 215-225.

Eggen, P. D., & Kauchak, D. P. (2004). Educational psychology: Windows on classrooms. *(No Title)*.

Elliot, A. J., & Dweck, C. S. (2005). Competence and motivation. *Handbook of competence and motivation*, 3-12.

Elliot, A. J., & McGregor, H. A. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of personality and social psychology*, *76*(4), 628.

Elliot, D. H. (1988). *Tectonic setting and evolution of the James Ross Basin, northern Antarctic Peninsula* (Vol. 169). Geological Society of America.

Elliott, E. S., & Dweck, C. S. (1988). Goals: an approach to motivation and achievement. *Journal of personality and social psychology*, *54*(1), 5.

Engel, C., Browne, E., Nyarango, P., Akor, S., Khwaja, A., Karim, A., & Towle, A. (1992).

Problem-based learning in distance education: a first exploration in continuing medical education. *Medical education*, *26*(5), 389-401.

Filgona, J., Sakiyo, J., Gwany, D., & Okoronka, A. (2020). Motivation in learning. *Asian Journal of Education and social studies*, *10*(4), 16-37.

Finney, S. J., Pieper, S. L., & Barron, K. E. (2004). Examining the psychometric properties of the achievement goal questionnaire in a general academic context. *Educational and Psychological Measurement*, *64*(2), 365-382.

Gao, L. (2023). Contemporary American literature in online learning: Fostering reading motivation and student engagement. *Education and Information Technologies*, *28*(4), 4725-4740.

Garavan, T. N., Carbery, R., O'Malley, G., & O'Donnell, D. (2010). Understanding participation in e-learning in organizations: a large-scale empirical study of employees. *International journal of training and development*, *14*(3), 155-168.

Gardner, R. C., Lalonde, R. N., & Moorcroft, R. (1985). The role of attitudes and motivation in second language learning: Correlational and experimental considerations. *Language learning*, *35*(2), 207-227.

Gardner, R. C., & Lambert, W. E. (1972). Attitudes and motivation in second-language learning.

Geen, R. G. (2019). Social motivation. *Companion encyclopedia of psychology*, 522-541.

Grant, M. M. (2002). Getting a grip on project-based learning: Theory, cases and recommendations. *Meridian: A middle school computer technologies journal*, *5*(1), 83.

Hands, C., & Limniou, M. (2023). Diversity of strategies for motivation in learning (DSML)—A new measure for measuring student academic motivation. *Behavioral Sciences*, *13*(4), 301.

Harlen, W., Crick, R. D., Broadfoot, P., Daugherty, R., Gardner, J., James, M., & Stobart, G. (2002). A systematic review of the impact of summative assessment and tests on students' motivation for learning.

Harmer, J. (2015). *The practice of English language teaching (With DVD)*. pearson.

Haverıla, M. J. (2012). The Biggs and Moore model in e-learning: The role of motivation and collaboration as moderators. *Turkish Online Journal of Distance Education*, *13*(2), 169-179.

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational psychology review*, *16*, 235-266.

Hung-Lung, C., Chih-Hsuan, C., Lin, M.-H., Huang, T.-J., Lin, P.-X., Rick, J., & Tang, J.-T. (2023). Problem-Based Learning as a Practical Approach to Postgraduate Materials Science Education.

Hung, W., Jonassen, D. H., & Liu, R. (2008). Problem-based learning. In *Handbook of research on educational communications and technology* (pp. 485-506). Routledge.

Jalongo, M. R. (2007). Beyond benchmarks and scores: Reasserting the role of motivation and interest in children's academic achievement an ACEI position paper. *Childhood Education*, *83*(6), 395-407.

Jia, X., Ying, L., Zhou, X., Wu, X., & Lin, C. (2015). The effects of extraversion, social support on the posttraumatic stress disorder and posttraumatic growth of adolescent survivors of the Wenchuan earthquake. *PloS one*, *10*(3), e0121480.

Kagan, S., & McGroarty, M. (1993). Principles of cooperative learning for language and content gains. *Cooperative learning: A response to linguistic and cultural diversity*, 47-66.

Kahu, E., Nelson, K., & Picton, C. (2017). Student interest as a key driver of engagement for first year students. *Student Success*, *8*(2), 55-66.

Kaplan, R. (2010). Intrinsic and aesthetic values of urban nature: A psychological perspective. In *The Routledge handbook of urban ecology* (pp. 409-417). Routledge.

Keller, J. M. (1983). Motivational design of instruction. *Instructional Design Theories and Models: An Overview of Their Current Status (383-434)*.

Kim, K.-J., & Frick, T. W. (2011). Changes in student motivation during online learning. *Journal of Educational Computing Research*, *44*(1), 1-23.

Koff, L., & Mullis, R. (2011). P73 Nutrition Education and Technology: Can Delivering Messages via New Media Technology Effectively Modify Nutrition Behaviors of Preschoolers and Their Families? *Journal of Nutrition Education and Behavior*, *43*(4S1).

Konold, K. E., Miller, S. P., & Konold, K. B. (2004). Using teacher feedback to enhance student learning. *Teaching Exceptional Children*, *36*(6), 64-69.

Kopp, C. B. (1982). Antecedents of self-regulation: a developmental perspective. *Developmental psychology*, *18*(2), 199.

Kozulin, A. (2000). The diversity of Instrumental Enrichment applications.

Kuo, H.-C., Yang, Y.-T. C., Chen, J.-S., Hou, T.-W., & Ho, M.-T. (2021). The impact of design thinking PBL robot course on college students' learning motivation and creative thinking. *IEEE Transactions on Education*, *65*(2), 124-131.

Larsen, R. J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in personality*, *21*(1), 1-39.

Lee, C.-Y. (2010). A theory of firm growth: Learning capability, knowledge threshold, and patterns of growth. *Research Policy*, *39*(2), 278-289.

Limniou, M., Sedghi, N., Kumari, D., & Drousiotis, E. (2022). Student engagement, learning environments and the COVID-19 pandemic: A comparison between psychology and engineering undergraduate students in the UK. *Education Sciences*, *12*(10), 671.

Lin, L. (2017). The application of the problem-based learning approach to English class: Chinese-speaking learners' willingness to communicate. *International Journal of Education*, *9*(3), 1-20.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.

Madrid, D. (1999). *La investigación de los factores motivacionales en el aula de idiomas*. Grupo Editorial Universitario, Universidad de Granada.

Marsh, H. W., Craven, R. G., Hinkley, J. W., & Debus, R. L. (2003). Evaluation of the Big-Two-Factor Theory of academic motivation orientations: An evaluation of jingle-

jangle fallacies. *Multivariate Behavioral Research*, *38*(2), 189-224.

Martin, A. (2012). Motivation and engagement: Conceptual, operational, and empirical clarity. *Handbook of research on student engagement*, 303-311.

Maslow, A. (1954). 1987. Motivation and personality. In: New York: Harper Collins Publishers.

Maudsley, G. (1999). Do we all mean the same thing by "problem-based learning"? A review of the concepts and a formulation of the ground rules. *Academic medicine*, *74*(2), 178-185.

Maulida, E. (2019). Lesson of Inclusive Education Implementation in Jakarta: Availability and Accessibility Issues. *Education Quarterly Reviews*, *2*(1), 172-184.

McCollum, D. L., & Kajs, L. T. (2007). Applying goal orientation theory in an exploration of student motivations in the domain of educational leadership. *Educational Research Quarterly*, *31*(1), 45-59.

Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of educational Psychology*, *80*(4), 514.

Melovitz-Vasan, C., Gentile, M., Huff, S., & Vasan, N. (2018). Student perception of active learning group in a problem-based learning curricular environment. *Medical science educator*, *28*(1), 195-201.

Midgley, C. (1993). Motivation and middle level schools. *Advances in motivation and achievement*, *8*, 217-274.

Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Change in teacher efficacy and student self-and task-related beliefs in mathematics during the transition to junior high school. *Journal of educational Psychology*, *81*(2), 247.

Newman, M. J. (2005). Problem based learning: an introduction and overview of the key features of the approach. *Journal of Veterinary Medical Education*, *32*(1), 12-20.

Newstead, S. E., & Hoskins, S. (2003). Encouraging student motivation. In *A handbook for teaching and learning in higher education* (pp. 68-78). Routledge.

Nichols, J. D., & Utesch, W. E. (1998). An alternative learning program: Effects on student

motivation and self-esteem. *The Journal of Educational Research*, *91*(5), 272-278.

Norman, G. R., & Schmidt, H. G. (1992). The psychological basis of problem-based learning: A review of the evidence. *Academic medicine*, *67*(9), 557-565.

Nunan, D. (1988). The learner-centred curriculum: A study in second language teaching. *(No Title)*.

Ortega Martín, J. L. (2002). Introducción a la motivación en el aula de idiomas [Introduction to motivation in the language classroom]. *Granada, ES: Grupo Editorial Universitario*.

Othman, N., & Shah, M. I. A. (2013). Problem-Based Learning in the English Language Classroom. *English Language Teaching*, *6*(3), 125-134.

Oxford, R. L. (1996). *Language learning strategies around the world: Cross-cultural perspectives*. Natl Foreign Lg Resource Ctr.

Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary educational psychology*, *8*(3), 293-316.

Pepper, C. (2009). Problem based learning in science. *Issues in Educational Research*, *19*(2), 128.

Perkins, D. N. (1991). What constructivism demands of the learner. *Educational technology*, *31*(9), 19-21.

Perwin, L. A. (2003). Teori Komunikasi. In: Jakarta: Surya Setyanegara.

Piaget, J. (1969). The mechanisms of perception. London: Rutledge & Kegan Paul. Piaget, J. & Inhelder, B.(1969). Psychology of the child. In: Boston, MA: McGraw-Hill. Quinn, DW, & Quinn, NW (2001). PLATO evaluation ….

Pintrich, P. R., & Garcia, T. (1994). Self-regulated learning in college students: Knowledge, strategies, and motivation. *Student motivation, cognition, and learning: Essays in honor of Wilbert J. McKeachie*, 113-133.

Pintrich, P. R., McKeachie, W. J., & Lin, Y.-G. (1987). Teaching a course in learning to learn. *Teaching of Psychology*, *14*(2), 81-86.

Pintrich, P. R., & Schunk, D. H. (2002). Motivation in education: Theory, research, and applications. *(No Title)*.

Prince, M. J., & Felder, R. M. (2006). Inductive teaching and learning methods: Definitions, comparisons, and research bases. *Journal of engineering education*, *95*(2), 123-138.

Rahardjo, A., & Pertiwi, S. (2020). Learning motivation and students' achievement in learning English. *JELITA*, *1*(2), 56-64.

Railsback, J. (2002). Project-Based Instruction: Creating Excitement for Learning. By Request Series.

Rakasiwi, C. W., & Muhtadi, A. (2021). Developing educational games for mathematics learning to improve learning motivation and outcomes. *JTP-Jurnal Teknologi Pendidikan*, *23*(1), 49-57.

REHMAN, M. K. U., SHAHZAD, S., & KHAN, S. (2016). The impact of extrinsic and intrinsic motivation on employee's engagement: An empirical study of health care sector of Peshawar, Pakistan. *The Discourse*, *2*(1), 19-30.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67.

Saeed, M. M., & Asghar, M. A. (2012). Examining the relationship between training, motivation and employees job performance–The moderating role of person job fit. *Journal of basic and applied scientific research*, *2*(12), 12177-12183.

Sandhu, J. (2020). *The Relationship of Hedonic Motivation, Performance and Effort Expectancy, Price Value and Decisions to Purchase a Self-Driving Car* William James College].

Santrock, J. W. (2007). A topical approach to life-span development, 3E. *Ch*, *5*, 192.

Sari, Z. P., Sarofah, R., & Fadli, Y. (2022). The implementation of inclusive education in Indonesia: Challenges and achievements. *Jurnal Public Policy*, *8*(4), 264-269.

Sarwinda, D., Bustamam, A., Paradisa, R. H., Argyadiva, T., & Mangunwardoyo, W. (2020). Analysis of deep feature extraction for colorectal cancer detection. 2020 4th International Conference on Informatics and Computational Sciences (ICICoS),

Savery, J. R., & Duffy, T. M. (1995). Problem based learning: An instructional model and its constructivist framework. *Educational technology*, *35*(5), 31-38.

Savin-Baden, M. (2000). *Problem-based learning in higher education: Untold stories: Untold stories*. McGraw-Hill Education (UK).

Schauble, L. (1996). The development of scientific reasoning in knowledge-rich contexts. *Developmental psychology*, *32*(1), 102.

Schiefele, U., & Rheinberg, F. (1997). Motivation and knowledge acquisition: Searching for mediating processes. *Advances in motivation and achievement*, *10*, 251-301.

Schunk, D. H. (2014). Educational Psychology: A Century of Contributions: A Project of Division 15 (educational Psychology) of the American Psychological Society.

Shin, M.-H. (2018). Effects of Project-Based Learning on Students' Motivation and Self-Efficacy. *English teaching*, *73*(1), 95-114.

Shunsheng, Z., & Houyin, D. (2023). Huang Yuanshen's Aesthetic in Translation: A Case Study of Huang's Translated Version of The Picture of Dorian Gra. *Contemporary Foreign Languages Studies*, *23*(4), 97.

Simamora, R. E., Sidabutar, D. R., & Surya, E. (2017). Improving learning activity and students' problem solving skill through problem based learning (PBL) in junior high school. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, *33*(2), 321-331.

Sindelar, T. M. (2010). *The effectiveness of problem-based learning in the high school science classroom* Wichita State University, College of Education, Department of Curriculum and …].

Slavin, R. E. (1989). Research on cooperative learning: An international perspective. *Scandinavian Journal of Educational Research*, *33*(4), 231-243.

Sperber, D., & Wilson, D. (1986). *Relevance: Communication and cognition* (Vol. 142). Harvard University Press Cambridge, MA.

Spolsky, B. (2000). Anniversary article. Language motivation revisited. *Applied linguistics*, *21*(2), 157-169.

Stanley, T., & Marsden, S. (2012). Problem-based learning: Does accounting education need it? *Journal of Accounting Education*, *30*(3-4), 267-289.

Stephen Kemmis, S. K., & Robin McTaggart, R. M. (2014). *The action research planner:*

Doing critical participatory action research. Springer.

Sun, Y., Liu, M., & Meng, M. Q.-H. (2017). Improving RGB-D SLAM in dynamic environments: A motion removal approach. *Robotics and Autonomous Systems*, *89*, 110-122.

Suryani, L., & Widhiyanto, W. (2023). Students' Motivation in Learning English in Indonesia: A Critical Review. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, *11*(2), 1611-1619.

TATAR, E., OKTAY, M., & TÜYSÜZ, C. (2009). Advantages and disadvantages of problem based learning in chemistry education: A case study. *Journal of Education Faculty*, *11*(1), 95-110.

Taylor, D., & Miflin, B. (2008). Problem-based learning: where are we now? *Medical teacher*, *30*(8), 742-763.

Tessema, M. T., Ready, K., & Yu, W. (2012). Factors affecting college students' satisfaction with major curriculum: Evidence from nine years of data. *International Journal of Humanities and Social Science*, *2*(2), 34-44.

Tosti, D. T. (1978). Formative Feedback. *NSPI journal*, *17*(8), 19-21.

Ushioda, E. (2014). Motivation, autonomy and metacognition. *Motivation and foreign language learning: From theory to practice*, *40*, 31-49.

Utecht, J. R. (2003). Problem-based learning in the student centered classroom. *Digital Media*.

Vallerand, R. J., & Blssonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of personality*, *60*(3), 599-620.

Van Lier, L. (1996). 1996: Interaction in the language curriculum: awareness, autonomy and authenticity. London: Longman.

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Walker, A., & Leary, H. (2009). A problem based learning meta analysis: Differences across problem types, implementation types, disciplines, and assessment levels. *Interdisciplinary journal of problem-based learning*, *3*(1), 6.

Watkins, D., McInerney, D., Lee, C., Akande, A., & Regmi, M. (2002). Motivation and learning strategies: A cross-cultural perspective. *Research on sociocultural influences on motivation and learning*, *2*, 329-343.

Wentzel, K. R. (1993). Does being good make the grade? Social behavior and academic competence in middle school. *Journal of educational Psychology*, *85*(2), 357.

White, H. (2001). Problem-based learning. *Biochemistry and Molecular Biology Education*, *29*(1), 24-25.

Wijnen, M., Loyens, S. M., Wijnia, L., Smeets, G., Kroeze, M. J., & Van der Molen, H. T. (2018). Is problem-based learning associated with students' motivation? A quantitative and qualitative study. *Learning Environments Research*, *21*, 173-193.

Wolters, C. A., Shirley, L. Y., & Pintrich, P. R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and individual differences*, *8*(3), 211-238.

Woods, D. R., & Learning, P.-b. (2000). Helping your students gain the most from PBL. *Problem-based learning: Educational innovation across disciplines. Singapore: Temasek Centre for Problem-based Learning*.

Woolfolk, A. E. (1998). *Readings in educational psychology*. ERIC.

Yahya, M., Hasyim, A., & Liana, A. (2021). Persepsi Mahasiswa STKIP Pembangunan Indonesia Terhadap Kuliah Daring Selama Pandemi Covid-19. *Jurnal Studi Guru dan Pembelajaran*, *4*(3), 616-626.

Yew, E. H., & Goh, K. (2016). Problem-based learning: An overview of its process and impact on learning. *Health professions education*, *2*(2), 75-79.

Yihong, G., Yuan, Z., Ying, C., & Yan, Z. (2007). Relationship between English learning motivation types and self‐identity changes among Chinese students. *TESOL quarterly*, *41*(1), 133-155.

Young, J. Q., Van Merrienboer, J., Durning, S., & Ten Cate, O. (2014). Cognitive load theory: implications for medical education: AMEE Guide No. 86. *Medical teacher*, *36*(5), 371-384.

Yuling, Q., & Liping, G. (2011). The application of PBL teaching method in College English

reading teaching. *Educational Theory and Practice (30)*, 58-60.

Zhang, Y., Zhou, L., Liu, X., Liu, L., Wu, Y., Zhao, Z., Yi, D., & Yi, D. (2015). The effectiveness of the problem-based learning teaching model for use in introductory Chinese undergraduate medical courses: a systematic review and meta-analysis. *PloS one*, *10*(3), e0120884.

Zhao, X., Liu, M., & Liu, Y. (2022). The Influence of Different Learning Strategies on Pupils' Learning Motivation: Is Augmented Reality Multimedia Learning Consistent With Traditional Text Learning? *Frontiers in Psychology*, *13*, 810345.

Zumbach, J., Kumpf, D., & Koch, S. (2004). Using multimedia to enhance problem-based learning in elementary school. *Information technology in childhood education annual*, *2004*(1), 25-37.

APPENDIX

APPENDIX A

LIST OF INTERVIEW EXPERTS AND EXPERTS REVIEWING RESEARCH TOOLS

List of Interview Experts and Experts Reviewing Research Tools

The list of experts who carried out the definition of learning motivation and its components in the study “A Development the Problem Based Learning Model for Enhancing Learning Motivation in English Reading of Junior High School Students”.

List of experts	Resume/position
Associate Professor NANTA SOORAKSA	National Institute Development of Administration /Associate Professor
Associate Professor Dr. Chotika Thamviset	Ph.D. in Research and Development of Human Potential (Educational Psychology) Faculty of Education, Mahasarakham Rajabhat University/Associate Professor
Professor Dr. Wu Xianhua	Doctor of Educational Psychology, Dean of the College of Educational Sciences, Hubei No. 2 Normal College / Professor
Lecturer Sun Li	Doctor of Psychology, mainly research on adolescent mental health, social psychology, Hubei No. 2 Normal College /Lecturer
Associate Professor Chen Wen	Master of Educational Psychology, Director of Politics and Education, Wuhan Steel City No. 2 Middle School/Associate Professor

The list of experts for reviewing the questionnaire on junior high school students' learning motivation in the study "A Development the Problem Based Learning Model for Enhancing Learning Motivation in English Reading of Junior High School Students".

List of experts	Resume/position
Professor Dr. Wu Xianhua	Doctor of Educational Psychology, Dean of the College of Educational Sciences, Hubei No. 2 Normal College / Professor
Associate Professor Chen Wen	Master of Educational Psychology, Director of Politics and Education, Wuhan Steel City No. 2 Middle School/Associate Professor
Lecturer Sun Li	Doctor of Psychology, mainly research on adolescent mental health, social psychology, Hubei No. 2 Normal College /Lecturer

List of experts for reviewing the quality of Problem-Based Learning models

List of experts	Resume/position
Associate Professor Chen Wen	Master of Educational Psychology, Director of Politics and Education, Wuhan Steel City No. 2 Middle School/Associate Professor
Professor Dr. Wu Xianhua	Doctor of Educational Psychology, Dean of the College of Educational Sciences, Hubei No. 2 Normal College / Professor
Professor Luo Xiuzhen	Master of Education, Director of English teaching and research, Wuhan Steel City No. 2 Middle School/Lecturer

APPENDIX B

SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE FOR INTERVIEWING ELIGIBLE RESPONDENTS

Semi-Structured Interview Questionnaire for Interviewing Eligible Respondents

STATEMENT: This semi-structured interview questionnaire is a tool used to interview respondents for the following purposes.

Purpose of the Interview:

1. To define the definition and components of Learning Motivation for students in junior high school.

2. To gain the guidelines for developing a problem-based learning model to enhance students' Learning Motivation in junior high school.

3. To gain the guidelines for developing research measurement instruments to evaluate the Learning Motivation in junior high school students.

Section 1: General Information

Name of Expert…….

Educational Background……..…..

Work Experience……

Position…….……

……...

Organization……..……..

……...…

Specialized Field……...……

Date and Time of Interview……..……

Section 2: Problem Orientation

Question 1) The definitions and components of Learning Motivation for students in junior high school.

In your opinion, what is the definition of Learning Motivation for junior high school students?

……

……

……

According to the literature review, Learning Motivation has three core components (Activation, Persistence, Intensity). Do you think Learning Motivation with these three components is suitable for junior high students in China?

Learning Motivation refers to a kind of internal motivation that can activate students to take the initiative in learning activities. It refers to that students can listen carefully in class, answer questions actively, and finish homework on time after class in order to achieve the learning objectives of the course. It can explain the reasons for students' learning and their efforts.

The activation of learning refers to the decision of students to take the initiative in learning activities that engaging students with the course material through discussions, problem solving, case studies, role plays and other methods actively.

The persistence of learning refers to students can continue to solve problems and complete learning goals or strive in the face of difficulty, opposition, or failure for a long period of time.

The intensity of learning refers to how hard a student tries to achieve his or her learning goal. Students who have a strong intensity are willing to invest a lot of time and energy to complete the learning tasks persistently.

……

……

……

1.3 In addition to these three components mentioned above, do you think there are other components that reflect the Learning Motivation of junior high school students? What are they?

……

……

……

1.4 In response to if there are additional components, what should the behaviors guided by those components you mentioned look like?

……

……

……

Question 2) Guidelines to develop Problem-based Learning Model for enhancing students' Learning Motivation in junior high school.

2.1 In your opinion, what is the definition of Problem-based Learning Model for students in junior high school?

……

……

……

2.2 Could you provide me with the guidelines for developing a problem-based learning model to enhance Learning Motivation among junior high school students in China?

……

……

……

2.3 What characteristics or steps to provide the contents and activities of Problem-based Learning Model to enhance Learning Motivation among junior high school students?

……

……

……

2.4 In your opinion, are there psychological techniques or other activities that can be used to enhance Learning Motivation among junior high school students in

developing a Problem-based Learning Model? If so, what kinds of techniques or activities?

……

……

……

Question 3) Guidelines for developing research measurement instruments to evaluate Learning Motivation among junior high school students in China.

3.1 In your opinion, is it suitable to use the Learning Motivation for junior high school students questionnaire to evaluate the Learning Motivation among junior high school students in China?

……

……

……

3.2 Are there other measurements can be used to evaluate the Learning Motivation of junior high school students in China? If so, what are the measurements?

……

……

……

APPENDIX C

SUMMARIZES THE MAIN POINTS AND RECOMMENDATIONS OF THE EXPERT INTERVIEW

Summarizes the main points and recommendations of the expert interview

In the first phase of this study, the researcher interviewed five experts who had been teaching and researching in the fields of education and psychology. The Purpose of Interview are: 1. To define the definition and components of Learning Motivation for students in junior high school; 2. To gain the guidelines for developing a problem-based learning model to enhance students' Learning Motivation in junior high school; 3. To gain the guidlines for developing research measurement instruments to evaluate the Learning Motivation in junior high school students.

Experts have given their professional recommendations, summarized below:

1. Definition and components of learning motivation for students in junior high school.

a) Definition of learning motivation

The interviewed experts pointed that learning motivation mainly refers to the expectations of parents, students' wishes for the future, the mutual influence of classmates and the support of the environment in the learning process. Learning Motivation refers to a kind of internal motivation that can activate students to take the initiative in learning activities. It refers to that students can listen carefully in class, answer questions actively, and finish homework on time after class in order to achieve the learning objectives of the course. It can explain the reasons for students' learning and their efforts. And Expert Dr. Chotika added that learning motivation refers to the internal or external factors that drive individuals to engage in and persist with learning activities. It involves the desire, interest, and willingness to learn, as well as the effort and determination to achieve learning goals. Teachers are the best source of learning motivation in the teaching-learning interaction. They agreed that the learning motivation refers to an internal desire or willingness to do something, that encourages students to set goals and then to take action to study toward achieving those learning goals. Professor. Wu Xianhua stated that learning motivation is the force that pushes you to learn and progress. Learning motivation is the internal part of learning motivation, which can be understood as "what I am learning for". Learning goal is the external part of

learning motivation. This kind of external goal is meaningful only when it is combined with the internal motivation. Learning experience is the learner's personal subjective feelings in the process of learning. With a good learning experience, there is a stronger learning motivation and the pursuit of goals. Expert Sun Li said that as an important theory in the intersection of pedagogy and psychology, the definition and connotation of learning motivation covers many levels. In a broad sense, learning motivation refers to the sum of various forces and factors that push individuals to learn. It includes both internal motivation, such as interest, curiosity, thirst for knowledge, etc., and external motivation, such as family expectations, social recognition, and career needs. These dynamic factors interact with each other, and together constitute the rich connotation of the theory of learning motivation. Learning motivation mainly refers to the motivation tendency that guides and maintains learners' learning behavior and directs it to a certain academic goal. Expert Chen Wen pointed that learning motivation is a kind of motivation tendency that guides and maintains students' learning behavior and directs it to a certain academic goal.

b) Components of learning motivation

According to the literature review, Learning Motivation has three core components: Activation, Persistence, Intensity. The interviewed experts agreed that these three components can help educators, parents, and policymakers to foster positive learning environment to enhance student’s learning motivation. Expert Dr. Chotika emphasized that these three components are essential according to motivation theory. In the activation component, what needs to be considered are the students' attitudes and their desire to participate in activities. In addition, since the attitudes and desires of students can significantly influence internal motivation, they are particularly important. Professor NANTA pointed that individual interest can also influence motivations. Cultural and social influence can play important role and also learning goals can affect student’s learning motivation. Expert Wu Xianhua addressed that participating in discussions is beneficial, and it’s useful to encourage students to seek out additional resources related to their interest. Collaborative learning through active peer and social

support and allowing students to choose projects or topics of interest can increase their learning motivation.

Expert Chen Wen viewed that learning motivation consists of two components: learning needs and learning expectations, which can be divided into different categories according to different standards. Students' learning is influenced by many factors, which are mainly dominated by learning motivation, but also closely related to students' learning interests, learning needs, personal values, students' attitudes, students' ambition level and external encouragement. The role of motivation in learning activities is complex. For the majority of teachers, understanding and mastering the types and characteristics of students' learning motivation is conducive to effective teaching. Expert Sun LI mentioned that there are three components: activation, persistence and intensity, .Among these three components, the activation of learning refers to the decision of students to take the initiative in learning activities that engaging students with the course material through discussions, problem solving, case studies, role plays and other methods actively; the persistence of learning refers to students can continue to solve problems and complete learning goals or strive in the face of difficulty, opposition, or failure for a long period of time; the intensity of learning refers to how hard a student tries to achieve his or her learning goal. Students who have a strong intensity are willing to invest a lot of time and energy to complete the learning tasks persistently.

2. Developing a problem-based learning model to enhance students' learning motivation in junior high school

Expert Wu Xianhua stated that in PBL, the learner is the master of learning and bears certain responsibility for learning. When we design the interaction of learners, we can adopt the method of incentive and inquiry learning, which revolves around the clue of finding problems, analyzing problems and solving problems. Learners' activities can be designed as following nine steps:

1) General discussion: Learners first have a general discussion on the main questions (topics) formed and raised by the teacher according to the teaching content.

2) Group organization: After the general discussion, learners think that there is a problem for in-depth exploration and research. Learners with the same interest will form a research and study group for a certain problem (five to six members are preferred). Group members introduce each other and choose their respective roles (such as establishing a recorder to record the details of each activity, establishing a group leader, etc.) to create an atmosphere for problem exploration and learning.

3) Start the question: After the learners have organized the study group, they begin to study around the group's questions.

4) Gather information and reason about the questions.

a) Search for information as hypothesized or planned;

b) analyze the data;

c) group discussion and communication;

d) Raise further questions;

e) comprehensively analyze the data and test the problems;

f) Develop new learning points;

g) develop further hypotheses and gather data;

h) Forming beliefs about possible outcomes;

i) resynthesizing collected data;

j) Identify resources.

5) Coordinate the data and determine the initial method.

a) Discuss and evaluate information from different sources involved;

b) re-synthesize data by applying new knowledge;

c) test the problem again, apply what you have learned, revise your assumptions and reflect on them;

d) Identify new learning points, if necessary, and redesign decisions;

e) co-ordinate problems and data and identify initial solutions to problems.

6) Determine methods and draw conclusions: extract knowledge and make relevant conclusions, such as forming definitions, listing diagrams, obtaining concepts, drawing principles, etc.

7) Report on group learning activities. Each study group will report their own learning activities and show the relevant learning results.

8) Evaluation of learning. The group evaluates itself, and the other groups as well as the learning instructors (teachers) also evaluate each group and suggest changes.

9) Revise the method and form the general theory. Each learning group will re-think and re-examine the learning problems of its own group according to the suggestions of the learning instructor (teacher) and other groups, and then revise the problem-solving methods of the group to form correct, scientific and innovative conclusions.

Expert Sun Li pointed out that Problem-based learning aims to construct knowledge and experience by asking students to propose and solve problems. Problem-based learning generally includes the following five steps:

1. Organize groups

Before exploring problems as a group, students get to know each other, establish ground rules for cooperative learning, and create a comfortable atmosphere. The learners and facilitator (usually the teacher) introduce themselves and exchange names to create a non-judgmental atmosphere.

2. Start a new question

Provide the student with a complex problem with a small amount of information, and the problem should be as close as possible to a real-world situation that will engage the student. Students choose someone to be a notetaker. They write down the problem solving process on a whiteboard, including the factual information in the problem, the students' thoughts and assumptions, and the identified learning points and activity plans. At the beginning of problem solving, students and facilitators develop a common understanding of the goal of problem solving. The facilitator may ask the student, "What do you want to learn through this problem?" This question can trigger a shared learning goal, against which the facilitator can better monitor the group's progress, correct any deviations, or alert the students to the need to adjust their goals.

Students may ask questions to the facilitator in order to gain relevant information, or they may gain more factual information by doing their own experiments or other explorations. The facilitator may ask meta-cognitive questions to encourage reflective thinking, for example, by asking the student to explain why he thinks this approach is a good one, or why he needs information about a particular aspect in order to solve a problem. In problem solving, students identify concepts that are important to the solution that they do not fully understand and that require further study, known as learning issues. In the beginning, the teacher may lead more, for example, by asking students if they should list certain concepts in their learning issues. As the learning progresses and the students become more in charge of their learning points, the facilitator will slowly "retreat." When the students have developed an understanding of the problem, and the lack of certain knowledge seriously hinders the solution of the problem, the students will split up to explore the learning points they have identified.

3. Follow-up

Group members gather again to communicate what they have learned, generating new problem-solving hypotheses based on what they have newly learned. In sharing their learning, it is important for students to evaluate their own information as well as that of others, how it was obtained, how reliable the sources are, and so on. This is an important way to facilitate self-directed learning.

4. Activity debrief

Groups report their conclusions and the process of reaching their conclusions in a variety of formats, such as mathematical analysis, graphs, oral presentations, dramatic performances, etc. Problem-based learning emphasizes not only getting students to solve problems, but also understanding the relationships and mechanisms behind them.

5. Reflection after the question

In order to refine what they have learned, students are expected to reflect intentionally on the problem-solving process, considering the similarities and differences between the problem and previous problems they have encountered. This can help

them generalize and understand the context in which the new knowledge is applied. Moreover, as students evaluate their own and others' performance, they are also reflecting on self-directed learning and cooperative problem-solving activities, which are important for the development of higher thinking skills.

Problem-based Learning (PBL) learning model that utilizes "problems" as stimuli encourages students to develop a desire to seek knowledge to solve those problems, empowering students to make decisions. in designing learning activities using problems as a basis to enhance learning motivation, giving tasks to students or engaging them in practical activities yields clearer results than simply listening to lectures. When designing learning activities using problems as a basis, it is important to ensure that the problems are challenging or interesting and that students have never encountered them before, or that the problems are relevant to daily life in China. Teachers must clearly define the expected learning objectives and support students to express themselves fully in terms of their opinions, problem-solving ideas, and exchange of perspectives with others. Teachers may use questioning techniques to stimulate students or use methods of reflecting on success or progress to motivate students to learn, or they may use psychological techniques to encourage students to participate in collaborative learning with others. Problem-based Learning Model in junior high school should focuses on a deep understanding of content through active engagement with real-world problems, promoting collaboration, communication skills, critical thinking and problem-solving abilities among students.

3. Research measurement instruments to evaluate learning motivation among junior high school students in China.

a) Measuring learning motivation among junior high school students using a questionnaire is feasible and appropriate because it allows respondents to report their own thoughts and knowledge. Learning motivation is an internal behavior that requires indirect methods. Measurement methods can vary, such as observing student behaviors to assess engagement during learning, conducting interviews, using questionnaires, tests, or real-life assessments to gather contextually relevant data. Researcher can

collect both quantitative and qualitative data to ensure comprehensive insights. Therefore, learning motivation can be measured. They also pointed out the other ways to measure more exactly:

b) Self report: Motivated Strategies for Learning Questionnaire (MSLQ): MSLQ measures motivational and cognitive aspects of the learning process. It includes scales for intrinsic goal orientation, task value, self-efficacy, and more.

c) Teacher Rating Scales: Teachers can provide assessments of students' motivation based on their observations of behaviors, participation, and enthusiasm in the classroom.

d) School Records and Academic Performance; Student's Learning Journals or Portfolios; School Environment Surveys: Assessing students' perceptions of the overall school environment, including teacher-student relationships, peer interactions, and school culture, can provide insights into motivational factors.

Combining multiple measurement methods can provide a more comprehensive understanding of learning motivation and its determinants.

APPENDIX D

LEARNING MOTIVATION QUESTIONNAIRE FOR JUNIOR HIGH SCHOOL STUDENTS

Learning Motivation Questionnaire for Junior High School Students

Dear students,

This is a questionnaire about the Learning Motivation of Junior High School students. The purpose of the survey is to understand the basic situation of students' learning motivation, which consists of two parts. The first part of the question is to investigate your basic situation, please tick "√" in the box after the options that meet your actual situation. Each question in the second part is an example of the project of learning motivation. This is a survey conducted for scientific research. The questionnaire is completely anonymous, and the results will not have any negative impact on your study. Your answer is of great value to our research. We hope you can fill it out truthfully and carefully.

Note: Each question has five options: ("1" for strong disagreement, "2" for partial disagreement, "3" for neither agree nor disagree, "4" for partial agreement, "5" for strong agreement.) Please tick "√" after the option that suits your situation. There is no standard answer to any question, no good or bad, and the results are only for investigation. Please be sure to answer according to your real situation. Thank you for your time.

Part One: Basic information

1. Your gender: Male Female

2. Your grade: seven eight nine

3. Your age:

Learning Motivation Questionnaire for Junior High School Students

Part two: Learning Motivation Questionnaire For Junior High School Students

Items	strong agreement	partial agreement	no opinion	partial disagreement	strong disagreement
English reading is important for me.					
I can keep English reading every day.					
English reading is useless and a waste of time.					
I will prepare for the reading class in advance.					
I don't care how difficult the reading is if it is interesting.					
My reading goals include long-term and short-term.					
I can keep reading when the reading material is too difficult.					
I keep writing reading notes every day.					
I complete at least two reading materials a day.					
I choose the reading topics and content initiatively.					
Reading for more than 10 minutes makes me tired.					
English reading can improve my English capacity.					
I always try to finish my reading assignments on time.					
Too many new words					

kept me from reading.					
I reread my favorite books several times.					
I don't have any reading plan.					
I will set feasible reading goals and achieve them.					
I will try to make up for the unfinished reading program.					
I have the reading habit of excerpting good sentences.					
I give up when my reading plan cannot be accomplished.					
Failing a test doesn't affect enthusiasm for my English reading.					
Two reading classes a week frustrates me.					
I share reading feelings with classmates every day.					
I always work hard to complete reading assignment.					
I seldom read English after class.					
Long and difficult reading texts often held me back.					
I attend English reading class with more energy.					
I answer questions actively in reading class.					
I seldom have time to read because too many study					

tasks.					
I will spend more than one hour a day on English reading.					
Sometimes I can't finish the reading task.					
Long reading material, I will not read all.					
I don't read more except for reading assignments.					

APPENDIX E

RESULTS OF THE QUALITY INSPECTION OF THE RESEARCH INSTRUMENT FOR THE MEASUREMENT OF LEARNING MOTIVATION QUESTIONNAIRE FOR JUNIOR HIGH SCHOOL STUDENTS CONSISTENCY INDEX (IOC) OF LEARNING MOTIVATION ASSESSMENT TOOLS FOR JUNIOR HIGH SCHOOL STUDENTS

Results of the quality inspection of the research instrument for the Measurement of Learning Motivation Questionnaire for Junior High School Students

Consistency Index (IOC) of Learning Motivation Assessment Tools for Junior High School Students

Note: The consideration criteria for the consistency index from 0.50 is considered to be met and can be used.

The following table shows the discrimination of each item and the reliability of the measurement instrument: Authority Values and Reliability of Indicators for Measures of Learning Motivation for Junior High School Students.

Authority Values and Reliability of Indicators for Measures of Learning Motivation for Junior High School Students

Items	r	Appliance	Items	r	Appliance
1	.56	Applicable	31	.31	Applicable
2	.67	Applicable	32	.27	Applicable
3	.32	Applicable	33	.29	Applicable
4	.73	Applicable			
5	.64	Applicable			
6	.70	Applicable			
7	.64	Applicable			

8	.70	Ap	
5		plicable	
9	.69	Ap	
5		plicable	
10	.64	Ap	
4		plicable	
11	.25	Ap	
7		plicable	
12	.59	Ap	
2		plicable	
13	.40	Ap	
9		plicable	
14	.25	Ap	
8		plicable	
15	.60	Ap	
8		plicable	
16	.20	Ap	
4		plicable	
17	.67	Ap	
0		plicable	
18	.66	Ap	
7		plicable	
19	.67	Ap	
3		plicable	
20	.34	Ap	
1		plicable	
21	.51	Ap	
2		plicable	
22	.44	Ap	

	9		plicable
23		.66	Ap
	5		plicable
24		.63	Ap
	9		plicable
25		.29	Ap
	1		plicable
26		.35	Ap
	0		plicable
27		.59	Ap
	7		plicable
28		.69	Ap
	9		plicable
29		.44	Ap
	6		plicable
30		.70	Ap
	3		plicable

As can be seen from the above table, Cronbach's Alpha Coefficient= .929

APPENDIX F

RESULTS OF QUALITY INSPECTION OF PROJECT-BASED LEARNING MODELS CONSISTENCY INDEX (IOC) OF PROBLEM BASED LEARNING MODEL TO IMPROVE STUDENTS' LEARNING MOTIVATION

Results of quality inspection of Project-Based Learning models Consistency Index (IOC) of Problem Based Learning Model to Improve Students' Learning Motivation

	Lesson Planning for the Topic	Experts			IOC
		1	2	3	
1	Orientation to Learning Model and Students Learning Motivation 1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation	+1	+1	+1	1.00
2	Activation (1) 1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation	+1	+1	+1	1.00
3	Activation (2) 1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation	+1	+1	+1	1.00
4	Activation (3)	+1	+1	0	0.67

	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
5	Activation (4)	+1	+1	+1	1.00
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
6	Persistence (1)	+1	+1	+1	1.00
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
7	Persistence (2)	+1	+1	+1	1.00
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
8	Persistence (3)	+1	+1	+1	1.00

	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
9	Persistence (4)	+1	+1	+1	1.00
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
10	Intensity (1)	+1	+1	+1	1.00
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
11	Intensity (2)	0	+1	+1	0.67
	1) Concept				
	2) Objective				
	3) Time				
	4) Learning materials				
	5) Steps				
	6) Evaluation				
12	Intensity (3)	+1	+1	+1	1.00

	1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation				
13	Intensity (4) 1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation	0	+1	+1	0.67
14	Reflection and Conclusion 1) Concept 2) Objective 3) Time 4) Learning materials 5) Steps 6) Evaluation	+1	+1	+1	1.00

Note: The criterion for passing and eligibility for use is considered to be a satisfactory index value of 0.50 or above.

APPENDIX G

SPECIFIC TEACHING ACTIVITIES ARRANGED BY THE PROBLEM-BASED LEARNING MODEL TO ENHANCE STUDENTS' LEARNING MOTIVATION

Problem Based Learning Model for Enhancing Students Learning Motivation

Lesson 1 Orientation——Learning Model and Students' Learning Motivation

Teaching Concept:

PBL is focused, experiential learning organized around the investigation, explanation, and resolution of meaningful problems (Barrows, 2000; Torp and Sage, 2002). In PBL, students work in small collaborative groups and learn what they need to know in order to solve a problem. The researcher acts as a facilitator to guide student learning through the learning cycle. In this cycle, also known as the PBL tutorial process, the students are presented with a problem scenario. They formulate and analyze the problem by identifying the relevant facts from the scenario. This fact-identification step helps students represent the problem. As students understand the problem better, they generate hypotheses about possible solutions. An important part of this cycle is identifying knowledge deficiencies relative to the problem.

Learning Motivation is an important force to promote a student's activities because any activity must be driven by some kind of motivation. Without learning motivation, students may not start the learning at all, and they may not be able to maintain their learning once experiencing hardship in the process (Gardner, 2007). Students' learning activities also need to be driven by learning motivation to produce sustainable learning behaviors and achieve excellent academic achievements. First of all, researcher needs to understand the current situation of students' learning motivation in order to take strategies to enhance the students' learning motivation.

Teaching material: *Go For It!,* by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives

1. To introduce the concept and significance of Students' Learning Motivation.

2. To establish good teacher-student and student-student relationships for subsequent courses.

3. To introduce the Problem Based Learning Model and course planning.

Teaching process:

1. **Greeting and warm-up.**

1.1 After researcher's greeting, students introduce themselves briefly to classmates, including English name, hobbies, strengths and so on.

1.2 Game Playing: Reverse password

Rule of the game: Do the opposite according to the researcher's command.

2. **Lead in**

Watch a clip of video about students' learning motivation.

3. **Presentation**

3.1 Learning Motivation

3.1.1 Free Talk

Students have 3 mins to think about the question "What is the learning motivation?" and communicate with the desk mates, and then answer freely,

3.1.2 Problem-based Inquiry

Examples:

Students A has been studying very hard. He said, "Of course I like to play and relax, but I prefer to study. Failure in an exam is just a small loss. I don't think the ranking is so important. The important thing is that learning is very interesting."

Student B studies very hard. Every day, in addition to completing the homework assigned by the researcher, he will do his homework again. He doesn't go out to play during the holiday and learns against time. She always hopes to get a scholarship and be recognized.

Student C thinks it's boring to study, and he wanders on the passing line every exam. Usually, I often go distracted in class and do my homework after being supervised by researcher. I'm afraid of being criticized by my parents and teachers.

Giving three examples of learning motivation and asking students to explore the learning motivation of these three students. Then discuss what learning motivation is.

3.1.3 Define the Learning Motivation

Some definitions and theories about learning motivation are presented for students' reference and reflection through literature review. In this process, listen to the students' personal views, interact with students for communicating.

3.2 Group Division and Discussion.

3.2.1 Group Division

There are 33 students in class. They were divided into two large groups, group A and Group B. The ratio of boy to girl is basically similar in each group. Each group was divided into 4 groups, which were A1、 A2、 A3、 A4、 B1、 B2、 B3、 B4.

Grouping		
Group Members		Group Leader
A1		
A2		
A3		
A4		
B1		
B2		
B3		
B4		

3.2.2 Group Discussion

How can promote students' learning motivation? The two student representatives from Group A and Group B are invited to report in class.

3.3 Problem Based Learning Model

3.3.1 Definition and usable value of the learning model

3.3.2 Characteristics of the model and steps to apply it

3.3.3 Brainstorming

Discussion in 2 groups: Group A and Group B

Questions:

Have you heard of this learning model? What are its strengths and weaknesses?

What are your suggestions for a better model?

4. Conclusion

Initially, the course began with students getting to know each other and creating study groups. Through video sharing, discussion, and games, students gained a general understanding of the definition of students' learning motivation, the concept of problem-based learning strategies. This paved the way for the later sections of the course.

5. Evaluation

Researcher gives evaluations based on the student's performance in each group and asks them to give written evaluations on this class, fill in the student performance evaluation form, write down their feelings about the activities, and give comments or suggestions.

Lesson 2 Activation——Where did you go on vacation?

Teaching Concept:

According to Lu Ziwen (2010), the starting point of the problem-based learning is to induce students to discover problems, and its ending point is to solve problems, with the main goal of enhancing students' autonomy in learning and inducing them to actively ask questions. Researcher creates real problem situations for students in the classroom to stimulate their desire for knowledge, guide them to think actively, learn to analyze problems and find solutions in the process of constantly asking questions, so as to further enhance their problem-solving ability and overall literacy while improving their knowledge.

Teaching material: Unit1 Where did you go on vacation? From ***Go For It!,*** by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To stimulate students' interest in learning and background knowledge
2. To understand the students' completion and the gap between each group
3. To develop students' awareness of problem solving

Teaching Process:

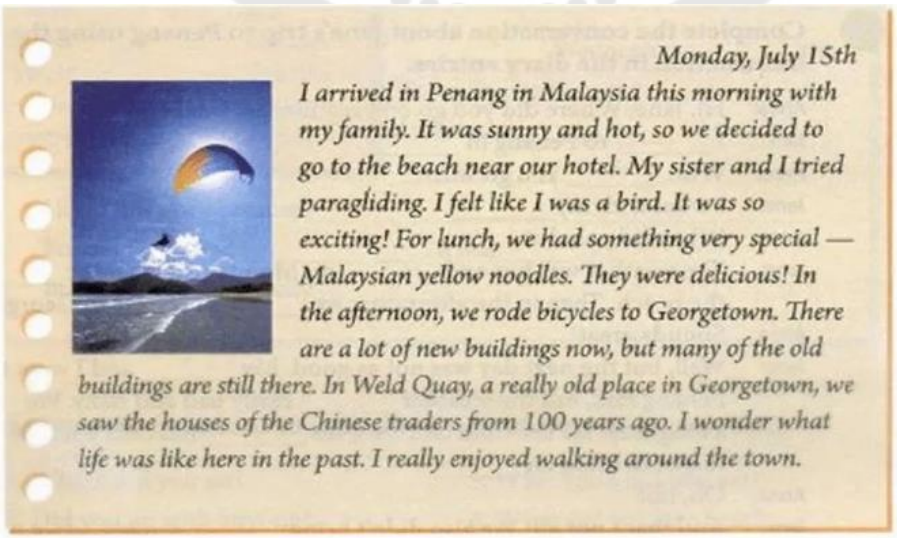
Step1 Problem Posing

The researcher plays the song *A journey to west*. While playing the song, the teacher presents some pictures of the scenery. After the students watched, asked them: "Do you like to travel? Where have you been to? What is your felling when touring?"

Researcher presenting questions: Did Jane have a good time on Monday? How about Tuesday?

Reading material 1

Researcher guided students skimming and find out the key words.



Monday, July 15th

I arrived in Penang in Malaysia this morning with my family. It was sunny and hot, so we decided to go to the beach near our hotel. My sister and I tried paragliding. I felt like I was a bird. It was so exciting! For lunch, we had something very special — Malaysian yellow noodles. They were delicious! In the afternoon, we rode bicycles to Georgetown. There are a lot of new buildings now, but many of the old buildings are still there. In Weld Quay, a really old place in Georgetown, we saw the houses of the Chinese traders from 100 years ago. I wonder what life was like here in the past. I really enjoyed walking around the town.

First step, guide the students to analyze the problem. This question cannot be directly found in the article. Therefore, the researcher first guides students to complete the following questions:

a. Who is go with Jane? b. Where did they go? c. What activities did they do?

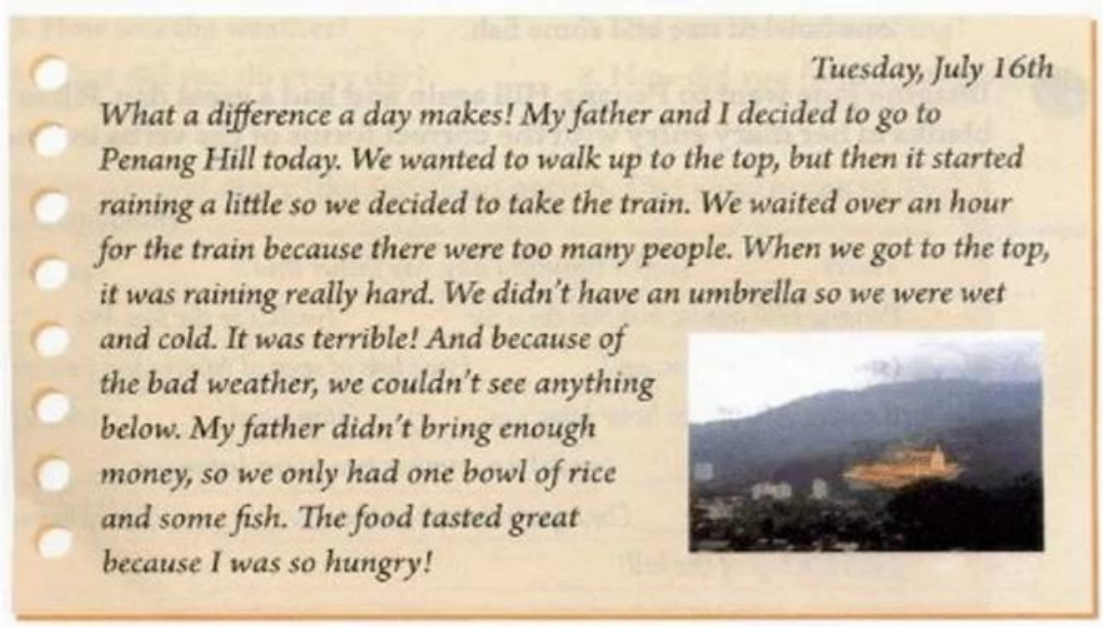
Step2 Task Allocation

The researcher arranges these three questions in each group, and the students perform a skimming between the groups and quickly lock the answers.

Step3 Information Collection

Reading material 2

Researcher guided students careful-reading and find out the topic sentences.



Tuesday, July 16th

What a difference a day makes! My father and I decided to go to Penang Hill today. We wanted to walk up to the top, but then it started raining a little so we decided to take the train. We waited over an hour for the train because there were too many people. When we got to the top, it was raining really hard. We didn't have an umbrella so we were wet and cold. It was terrible! And because of the bad weather, we couldn't see anything below. My father didn't bring enough money, so we only had one bowl of rice and some fish. The food tasted great because I was so hungry!

After the information collection stage group shows the problem, researcher continues to guide the students to analyze the problem. The researcher explained: “Through these activities, we can determine the main content of Jane's travel. So, can everyone answer

this question too? Did Jane have a good time on Monday? How about Tuesday?" The students started the discussion and presented their own answers.

Step4 Group Presentation

After solving the above problems, the researcher gives the first question once again.

a. Did Jane have a good time on Monday?

b. How about Tuesday?

c. Why?

Subsequently, the group sent representatives to speak up.

Do the research (Ask your partner where they went last summer.)

e.g. -Where did you go on vacation? -I went to …

Name	Note

Step5 Comprehensive Evaluation

Researcher sets aside three minutes to communicate between the groups, then, evaluates the performance and answers of each group.

Conclusion

This course is closely related to the actual life of students, and easy to induce students to use simple English to communicate. In the learning activities, students exchange descriptions and opinions about what happened in the past, which promotes emotional communication between students and researcher and also enhance their friendship.

The students try to solve the learning problems by using the problem-based learning model in class.

 **Lesson 3 Activation——What's your favorite subject?**

Teaching Concept:

Activation is the decision to initiate a behavior. Motivation means drive and interest toward or away from something, but activation is what gets you there. Activating to a task is starting the work that you need to do to achieve what motivates you. Motivation is necessary but insufficient activation is the secret sauce. Motivation drives student behavior and performance. When students are motivated, they will be more positive and energetic in the classroom and toward their learning. Students are going to be more likely to take initiative in their learning and persist through difficult material, mistakes, or tasks. Problem Based Learning and constructivism are student-centered. Students have to solve problems through cooperation and analyze problems in group. These problems are put forward and solved by students. Researcher should help students develop the habit of solving problems with other group members, connecting their existing knowledge with new knowledge. Students actively asked questions and thought creatively in the process of completing tasks, constantly building their knowledge. Both of them stress the process of getting knowledge through participating in problem solving.

Teaching material: Unit 9 My favorite subject is science, Go for It! by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To recognize how to arrange their time appropriately in certain time or in the week and write a letter to describe their own time schedule.
2. To develop their self-directed learning ability and cooperative ability by completing group work activities.
3. To stimulate the students' learning interest and cultivate their cooperative ability by participating the learning activities.

Teaching Process:

Step1 Problem Posing

Researcher divided four students in a group and then students wrote their names in the card according to their own roles. In this step, researcher explained the teaching steps of PBL to students. Furthermore, punishment mechanism was established so that all students were willing to participate in the teaching activities.

Before reading, students work in groups to make a report about their favorites and finish the chart. They can use the sentence patterns as the following for help:

What's your favorite fruit?

What's your favorite sport?

What's your favorite subject?

Interview Note			
Students	Sports	Subjects	Fruits
S1			
S2			
S3			
S4			

Group Report

My classmate Jining's favorite subject is music. She likes it because it's fun. Her music teacher is Ms. Xie. Xiao Mei's favorite subject is art. She likes it because it's interesting. Her art teacher is Ms. Wu. Da Wei's favorite subject is P.E. He likes it because it's relaxing. His P.E. teacher is Mr. Hu.

After report in front of class, students worked in groups and make the survey. Let some Ss report the result of their survey.

Researcher created a real learning environment so that students could understand the topic more easily. For example, my favorite subject is science, in lead-in stage, teacher showed some pictures about different subjects to elicit the topic of subject. Students talked about different subjects according to these pictures. What's more, through these pictures, students expressed their reasons about why they like these subjects, students can answer directly according to related pictures. Then, researcher shown two students' busy schedules in class and presented the problem situation, which was about how to arrange a schedule scientifically. Researcher puts forward some questions and guided students to make a report about other group members' dream school schedule and reasons. The questions are as follows:

a. What can you see from this picture?
b. Can you predict what the passage mainly talks about?

Step2 Task Allocation

Reading Material:

The following is a letter from Yumei to Jenny. Please underline the names of the subjects she has an affinity for. Do you share the same preferences as her?

Dear Jenny,

I am very busy on Friday. At 8:00 I have math. It is not fun. The teacher says it is useful, but I think it is difficult. Then at 9:00 I have science. It is difficult but interesting. At 10:00 I have history. After that, I have P.E. at 11:00. It is easy and fun. Lunch is from 12:00 to 1:00, and after that we have Chinese. It is my favorite subject. Our Chinese teacher, Mrs. Wang, is great fun. My classes finish at 1:50, but after that I have an art lesson for two hours. It is really relaxing!

How about you? When are your classes? What is your favorite subject?

Your friend,
Yu Mei

Researcher gives students some questions of each part and let students work in groups to solve these questions. These questions need students to read the whole passage and get general information, such as:

a. What's the main idea of this passage?
b. How many paragraphs are there in this passage?
c. What are they talking about?

After fast reading, researcher shows several questions including circling Yu Mei's subjects and underlining the reasons. Then invites students to think about the reasons why Yu Mei arranges her schedule in this order. The questions were as follows:

a. Does Yu Mei like math?
b. When is the P.E. class?
c. What's Yu Mei's favorite subject?
d. What does Yu Mei think of her Chinese teacher? Why does she like science?

In addition, researcher also guided students answer the following questions:

a. If you were Yu Mei, which subjects will you arrange in the morning? And which subjects will you arrange in the afternoon?

b. Why would you like to arrange your time like this?

Through these questions, students were required to solve problems according to their related knowledge, which could cultivate students' ability of solving application problems. What's more, with the development of students' problem awareness, researcher guided students to solve higher level evaluative problems such as:

a. Do you think Yu Mei's schedule is reasonable? Why do you think so?
b. How can you arrange your classes appropriately for one day?
c. How can we arrange our time schedule scientifically?

Step3 Information Collection

Then the leader of group organized the reading tasks. Group members read the passage firstly according to their own reading tasks individually and then they discussed the questions with other group members. In the process of discussion, researcher walked around the classroom to guide students analyze the difficult questions and help students grasp the key information of the passage. Moreover, students working in groups was not only sharing their own opinions, but also learning others' learning methods in order to improve own learning methods and skills.

The informants of each group are responsible for searching materials from other ways, such as the Internet or reference books. While other group members expressing opinions, recorders write down their ideas and make a conclusion about group learning results. Each group members' duty is specific, so the discussion gone on smoothly.

Step4 Group Presentation

After discussion with group members, researcher invited students to think of other questions by themselves. Then the whole classmates were required to answer these questions and evaluated which question was the best. The reporters report the results of the group's answers for each question and share their ways to arrange their schedules

effectively to the whole class. While one group presents views, the other students put forward different views and arguments. In the process of presentation, researcher encouraged students to express their comments about the solution of the problem in English. And also, supplemented solutions which students can not complete.

Step5 Comprehensive Evaluation

Students receive the feedback and other students' feedback about their performance. At the end of the class, researcher evaluated each group's performance and organized students to do self-evaluation and peer-evaluation. Through evaluation, students found their gaps about what they had learned and what they were not clear. In addition, researcher made a summary about the knowledge learned in this class.

Conclusion

The topic of this English reading class is "Your favorite subject", which is also a hot topic for students to discuss after class. Let the students express their opinions by talking about the topic before text reading. In combination with texts to talk about topics in depth, students think about the usefulness of each subject and realize the importance of learning. At the same time, we also understand the dynamic and real ideas of each student, stimulate students' interest, and guide them to find their own learning strategies.

Lesson 4 Activation—— Unit 3 I'm more outgoing than my sister.

Teaching Concept:

In the PBL model, the setting of driving questions is particularly important. Driving questions are directly related to the direction of students' thinking. When using the guided approach, the questions posed must be complex and poorly structured. Only such questions can attract students' attention more quickly, increase their motivation to

explore, and motivate them to think more deeply about the problem so that it can be solved. Learning is a composition of extrinsic as well as intrinsic rewards. Curiosity is one of the important elements of learning. Due to motivation in learning students work harder to achieve a particular goal. Active learning positions students as the owners of their learning. When students feel empowered, have autonomy to make choices, and develop metacognitive skills, they are motivated to work and capable of initiating actions toward their goals. The activating strategy is what inspires the learner and is key to instructional design. The hook should motivate the students and link to prior knowledge of the student or created by the teacher. If your hook gets “below the surface” it can be a powerful tool towards Higher Order Thinking Skills.

Teaching material: Unit3 I’m more outgoing than my sister. From ***Go For It!,*** by People’s Education Press.

Students: Junior high school students, Grade 8. (Experimental Class)

Duration: 60 mins.

Teaching Aid: learning guide notebook multimedia laser pointer PPT sheet of form

Teaching Objectives:

1. To stimulate students' interest in learning about theme topics by combining reading texts with real life
2. To activate students to participate in classroom activities willingly by discussing with their group members.
3. To reconstruct the pattern of deep thinking by comparing the content of the text with their own daily situation

Teaching Process:

Step1 Problem Posing

First, researcher asks: “Do you have a friend? And what does he or she look like?” Then carried the character doll toys in Tom and Jery and Haier Brothers. Let the students describe the difference between these two friends. The purpose of this step is to motivate students' background knowledge to stimulate students’ interest in learning.

Step2 Task Allocation

In the skimming session, researcher focus on comparisons with people and characters. Following questions can be set, Are the following statements true or false?

a. Jeff is less serious than most kids.

b. Jeff and Yuan are both quiet.

c. Jeff thinks it is easy for him to make friends.

d. Huang Lei is taller than Larry.

e. Larry works harder than Huang Lei

f. Mary thinks her friends should be the same as her.

Students complete these six questions in group activities.

Step3 Information Collection

In the scanning session: First, the researcher guides the students to enclose the name. Secondly, the following questions are given:

a. What does Jeff's view for a good friend?

b. In Huang Wei's view, should friends be same or different? Why?

c. What is the meaning of the sentence “A true friend reaches your hands and touch your heart”?

Step4 Group Presentation

The topic of this lesson is "friends", this unit is conducive to the sublimation of the emotional value goal and enhance the emotional tacit between group members. Therefore, researcher can combine students' texts and basic sentence patterns to show students from two angles:

a. What does your classmate look like?

b. Should they be same or different?

Step5 Comprehensive Evaluation

In this module, the researcher's evaluation mainly focuses on two aspects. When the students are showing, the researcher should focus on whether their oral expression is correct or not. Second, the students are in a discussion about whether friends need the same.

Conclusion

In this module, should classmate be same or different? is a good topic. The teacher solved the article information in the skimming session. In the scanning session, different people's views on this are solved. In the post-reading session, the students' discerning ability is cultivated. The researcher cultivates students' ability to find information, summarizes the ability and thinks ability by setting questions from shallow to deep. This is the embodiment of the orderly nature of PBL teaching.

Content	Group Report			
	Group 1	Group 2	Group 3	Group 4
Q1: Who? Q2: Can you describe? Q3: Are they same or different? Q4: Are there anything special?				

Lesson 5 Activation——I am going to study Computer science.

Teaching Concept:

PBL (Problem-Based Learning) is "problem-oriented learning" or "problem-based learning", which is a teaching method that guides students to learn actively. Students analyze and solve problems by themselves or through teamwork; teachers no longer purely teach and present all knowledge to students but take problems as the beginning of teaching and lead them to think actively with problems, thus stimulating their interest and motivation in learning. For juniors, making predictions is a strategy in which students use information from a text (including titles, headings, pictures, and diagrams) and their own personal experiences to anticipate what they are about to read (or what comes next). A student involved in making predictions is focused on the text at hand, constantly thinking ahead and also refining, revising, and verifying his or her predictions. This strategy also helps students make connections between their prior knowledge and the text. Active learning strategies have been shown to have a positive impact on student achievement. Implementing active learning strategies in the classroom can enhance students' motivation, attitudes, aptitudes, and skills. These strategies promote student engagement and participation, leading to better learning outcomes.

Constructivism theory points out that learners can acquire knowledge and information more effectively through the stimulation of appropriate learning styles and learning materials under certain circumstances. Therefore, this course creates a multi-modal real situation that can arouse students' emotional resonance and improves students' comprehensive language application ability while training students' language skills.

Teaching material: I am going to study Computer science, From Go For It! by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: flashcard notebook multimedia laser pointer PPT

Teaching Objectives:

1. To pronounce the new words and expressions and know their meanings.
2. To use the target sentences to “be going to” and “want to be” to talk about their future.
3. To make their study plan and get them to know they should do lots of thing to make their dreams come true.
4. To get the meanings of resolutions and decide to make their own resolutions.

Teaching Process:

Step1 Problem Posing

1. Read a letter written by the teacher and find out what are my New Year's resolutions?

a. Run for 30 minutes every morning.
b. Spend more time with my grandpa, take a walk with him twice a week.

2. Watch a video(friends) and then answer the question: What are their New Year's resolutions?

a. no divorces in1999.
b. not make fun of your friends.
c. make himself happy.
d. learn to play the guitar.

3. Did you make any resolutions like them last year? Were you able to keep them? Why or why not?

4. Is it yours? (Show students some pictures.)

Next year, I am going to learn to play the piano! VS It's so fun to watch TV! Next year, I am going to study hard and get good grades! VS It's so interesting to play games!

Maybe, it can be different through hard work...

Step2 Task Allocation

1. Pre-reading: Is it easy or difficult to keep resolutions? Let's read the article and try to find the answer.
2. Fast reading: Read and match the main purposes for each paragraph.

Paragraph 1. To question the idea of making resolutions

Paragraph 2. To give the meaning of resolution

Paragraph 3. To discuss the different kinds of resolutions

3. Read and write the letters [A-D] in the correct places.

Step3 Information Collection

1. Read Para1 and answer the questions. Resolution finding:

What—— What is a resolution?

When——When do people make resolutions?

Why——Why do people usually make resolutions?

How——How can people remember their resolutions?

2. Read Para2 and answer the questions: How many kinds of resolutions does the writer talk about? Classify these resolutions into 3 kinds.

Physical health	Self-improvement	Better planning

Step4 Group Presentation

Read Para3 and answer the questions:

a. Why do you think resolutions may be difficult to keep?
b. Do you think the best resolution is to have no resolutions? Why or why not?
c. Write down your ideas in 2d and then speak out!

Post-reading: should we keep resolutions?

a. Make an easier resolution to keep.
b. Remind yourself of it somehow.
c. Give a prize when you make it.
d. Ask your best friend for help when you get in trouble.
e. Believe in yourself!

Step5 Comprehensive Evaluation

Evaluate student performance and group collaboration performance, teacher arrange reading materials on the same subject for students to read after class. Assignment: report about reading comprehension in groups.

Combine the formation of evaluation and summative evaluation, continue to encourage students to participate the activities. It also enhances students' interest in learning English and strengthen students to solve problems through problem-based learning model.

Conclusion

This lesson introduces the topic of study by heroic figures. Students initially discuss the reasons for choosing their dream careers in groups based on their personal dreams, guiding them to connect their personal pursuits with the destiny of the world and to establish a sense of the community of human destiny. Junior high school is a critical period for the formation of students' values, that students are interested in and have their own views on the topic of dream careers. The classroom is designed with more teacher-

student and student-student interaction sessions, focusing on language scaffolding to take care of the learning needs of different levels. Students think about dream careers at a deeper level, thus forming correct values and stimulating their learning motivation.

Lesson 6 Persistence——How often do you exercise?

Teaching Concept:

Persistence is continuation of effort and striving in the face of difficulty, opposition, or failure, which is evidenced by willingness to continue to try in the face of challenge. For students, this persistence can be a driving force to help them achieve their academic, as well as personal goals. The idea of persistence in the face of adversity is often described as an outcome of high motivation. For example, students with a high sense of self-efficacy are shown to persist longer through academic difficulty. Educators play a significant role in helping students develop persistence and apply effective effort. They can reinforce a view of intelligence as changeable, provide frequent and specific feedback to students on their academic progress, and encourage students to reflect on their own experiences with overcoming challenges and succeeding. The Problem Based Learning approach helps to develop students' learning skills. High-quality PBL is characterized by clear reading literacy goals, driving questions, sustained inquiry and full assessment. In the process of students' learning, teachers guide them in the right way to think actively in authentic contexts and dig deeper into the reading text, so as to further improve their higher order thinking skills and language literacy.

Teaching material: Unit2 How often do you exercise? from ***Go For It!,*** by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To stimulate students' interest by their interests.
2. To mobilize the background knowledge of the students and guide the topic.
3. To develop the students to find the problems under the help of their group members.

Teaching Process:

Step1 Problem Posing

The teacher played a short video "Garfield's Day", which students watched. After that, the teacher asked three questions:

a. Is he funny?

b. What does he do in a day?

c. Do you think he have a healthy life habit?

The average age of second-year students is 13-14 years old, so cartoons can stimulate students' interest. The teacher then continues to ask the students: "What about you?" The purpose of this step is to mobilize the background knowledge of the students, but also to guide the topic of this unit.

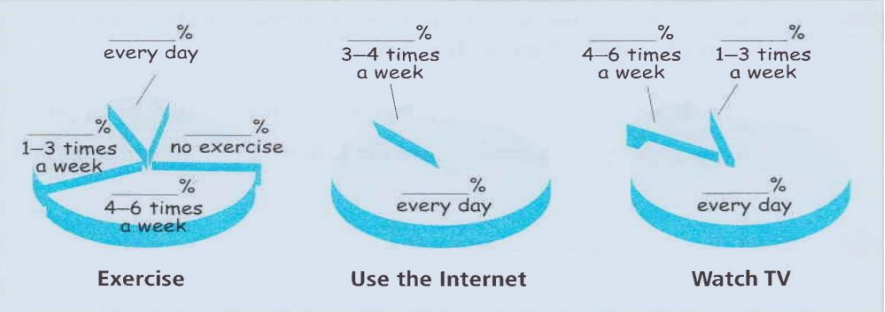
Before the event, the teacher taught relevant reading skills:

“First, lock the keywords, characters, places and numbers. Secondly, look at the previous and last sentences of the sentence in which the keyword is. Finally, check carefully.”

Since this form is related to the full text, this will inevitably lead to problems with long task times and high difficulty. Thus, the instructor guides students to assign the following tasks.

Step2 Task Allocation

The teacher distributes the following charts to each group and allows the students to complete them quickly.



Step3 Information Collection

After the teacher collects the above forms, the teacher checks the students' answers. Then asks the following questions:

a. How many students do not exercise at all?

b. How many students use the internet every day?

c. What does the writer think is the best way to relax? Why?

d. Do you think the students at No. 5 are healthy? Why or why not?

Before the students analyze the problem, the teacher once again guides the students: "Before analyzing the problem, please circle the activity to lock the information source. "The students then deal with the problem.

Step4 Group Presentation

After completing skimming and scanning, the instructor gives three minutes for the students to complete the previously issued form. Subsequently, the teacher gave the following sentence patterns for the students to show on stage.

There are_____ activities in students' life_____% students_____.

The teacher provides the following form:

Activity	Percentage	How many

Step5 Comprehensive Evaluation

At the end of the class, students are asked to write down the understandable and incomprehensible parts of the content learned in this class on the paper. On the left side of the paper, the understandable content is written, and the incomprehensible content is written on the right side. The content that is not sure whether it is understood can not be classified, and the written content needs to be concretized.

After completing the paper quiz, students were given four levels of feedback options labeled "understood," "roughly understood," "not fully understood," and "not at all understood." In this way, it is possible to assess not only whether students have mastered the core points of the lesson, but also how well they know their own abilities. There is also an extended use of this type of quiz, that is, all the students who choose "not fully understand" and "not at all understand" are divided into the same study group, and the next day they can lead this part of the students to review.

Conclusion:

This reading class is created in a real-life context, asking and talking about each other's extracurricular activities and frequency. In class, language rules are observed, explored, trained and consolidated to enhance mutual understanding and stimulate students' interest in English learning. Increase awareness of developing good lifestyle habits through healthy activities such as sports. It not only develops the language ability and thinking ability, but also inspires and cultivates the students' persistent learning attitude.

Lesson 7 Persistence——The Storm Brought People Together

Teaching Concept:

Persistence, or grit, is the ability of leaners to continue engaging in learning tasks until they master the relevant skills (Cloninger et al., 1993). Moreover, empirical studies underscore the importance of fostering persistence, as it enables learners to overcome obstacles and adaptively engage with complex material (Bandura et al., 1999). However, persistence may not always lead to successful outcomes. If a learner repeatedly attempts a task without achieving success, their subsequent efforts can become unproductive, resulting in a phenomenon known as wheel-spinning. In the 1980s, Barrows (Barrows, 1983) created the PBL self-directed learning model, which advocates setting learning in complex and meaningful problem situations. In addition to course content, PBL can promote the development of critical thinking skills, problem-solving abilities, and communication skills. It can also provide opportunities for working in groups, finding and evaluating research materials, and life-long learning (Duch et al, 2001). Problem-based learning allows learners to solve problems through cooperation, and ultimately cultivating their ability for self-directed learning and lifelong learning.

Teaching material: Unit 5 The Storm Brought People Together, from ***Go For It!,*** by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To develop students' resilience and problem-solving sense when encountering difficulties

2. To enhance students' language literacy and higher-order thinking skills

3. To cultivate students’ deeper comprehension and critical thinking ability

Teaching Process:

Step1 Problem Posing

After having a short exchange with the students, teacher introduces the topic from the picture of a storm and ask students to talk about their knowledge of storms with classmates.

Ask two questions based on the pictures to introduce the topic of "storm", i.e. "What's the weather like? In the process of talking about the pictures, input some knowledge about storms and introduce some target vocabulary of the article, such as black clouds, thunder and lightning, strong winds, fallen trees, take apart and so on. Since this is only an introductory session, there is no need to give too many pictures and vocabulary words, just let the students have a "brainstorming" session and cut into the topic.

Step2 Task Allocation

Researcher shows the pictures in the text and the title *The Storm Brought People Together*, so that students can predict the main content of the article and input some background knowledge about storms in Alabama: Alabama is in the Middle southeast of the United States. Gulf of Mexico is to the south of it. There are often cyclones, hurricanes lo and storms in March and April every year.

Researcher shows a map of the United States to find the geographic location of Alabama. The teacher displays a map of the United States and finds Alabama's geographic location adjacent to the Gulf of Mexico in the south, and asks students to think about what effects such a geographic location may bring, and guides them to activate the background knowledge about hurricanes in the way of questions, as well as

what kind of serious consequences hurricanes in recent years have had on the state of Alabama, and so on.

Step3 Information Collection

Students read the text extensively to grasp the general idea and structure of the passage and find out the environment and preparation before the storm.

The fourth paragraph of the article is a description of the aftermath of the storm. The teacher asks two questions:

a. "How was the neighborhood after the storm?";

b. "What did Ben's family do? and what do they think of the storm?" to make students think about the deeper meaning of the main idea of the article.

Step4 Group Presentation

Teacher presents pictures of reporters interviewing people. Then, students play the role of reporters and interview people who have experienced the storm, and let other students evaluate their interviews. Afterwards, let the students discuss "Why does the writer write this passage?" to lead to a high-level discussion: "What other things can bring people closer together? How can we help each other in times of difficulty?

Step5 Comprehensive Evaluation

One side, the researcher presented a reading problem to the class, then asked the students to think for themselves and write down their ideas on a piece of paper. Then, let the students pair up and discuss their ideas and opinions.

Guessing Game:

One student on the platform imitates the tale of Yu Gong's mountain-moving endeavor. The other students speculate, who will be the first to make a correct guess?

Translate the following stories into Chinese and tick off the stories you think match.

_____Journey to the West

_____Yu Gong Moves the Mountains

_____Hou Yi Shoots the Suns

_____Nü Wa Repairs the Sky

Task 1: Yu Gong and his family kept on digging day after day and year after year. Finally, a god was so moved that he sent two gods to take the mountains away. Talk about the questions with your partner.

What do you think about the story of Yu Gong?

Do you think it's a good way to solve the problem?

Does it seem possible to move a mountain?

What could Yu Gong do instead of moving a mountain?

Task 2: Read the conversation and complete the table.

1.Student A's opinion	2. Student B's opinion	3. Your opinion

Researcher can observe students in the classroom and record their performance based on how they communicate in groups.

On the other side, students make a self-assessment of what they have learned.

After explaining the knowledge, you can ask the students to show their understanding by raising their hands.

Repeated use of this method during lessons can help teachers quickly acquire information about students' understanding. It can also be used to determine which students are able to complete tasks independently, which students are suitable for working in groups, and which students need to consolidate what they have learned again.

Conclusion

This course guides students to use geographical knowledge to analyze the causes of storms in Alabama and promotes inter-disciplinary penetration; Be able to analyze the correlation and logical relationship between various information. Through problems guidance, students are trained in memory retrieval, analysis and judgment. They realize the benefits and fun of collaborate each other in a team and be firm in facing problems bravely and solving problems with persistence. The application of PBL learning model in the English reading classroom, has activated classroom's atmosphere. It stimulates the students' enthusiasm and learning motivation in the class and also cultivates students' higher order thinking ability.

Lesson 8 Persistence——Do You Know When Basketball Was Invented?

Teaching Concept

Persistence is important because it allows you to overcome obstacles that you may face. Many successful people have faced failures and setbacks along the way, but they didn't let those setbacks define them. Instead, they used their failures as opportunities to learn and grow. Being able to persist – and stop persisting when needed – are critical aspects of our abilities to regulate ourselves and achieve both our personal goals and maintain our well-being (Brandstätter & Bernecker, 2022). Without persistence, we simply would not grow or learn much. Motivational persistence is considered to be a stable characteristic of the conative system, the predisposition of a person to

motivationally persist with effort in order to attain a personal goal, finding personal resources to overcome the encountered obstacles along the way. Problem-based learning (PBL) is an instructional method in which students work in collaborative groups to identify what they need to learn through facilitated problem solving. PBL can be very challenging to implement, as it requires a lot of planning and hard work.

Teaching material: Do You Know When Basketball Was Invented? from ***Go For It!*** by People's Education Press.

Students: 33 Junior high school students from Class 4, Grade 8 (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To deal with some words and expressions related to the invention and development of basketball.
2. To perceive the importance of persistence and perseverance in learning from the characters in the reading material
3. To solve the problems within the group and present their own opinions after they had a heated discussion with group members.

Teaching Process:

Step1 Problem Posing

Researcher presents several pictures of NBA stars to get the students' attention and ask the whole class three easy questions.

a. Who are they?

b. What kind of profession are they?

c. What are they doing now?

Students enter the English reading situation and give own predictions of this text. Researcher gives questions and asks students to do it by themselves and encourages students to confirm and explore it.

a. What do you think this text is about?

b. What makes you think so?

Step2 Task Allocation

Group members assign their roles and then perform them separately. They finish their group tasks in limited time. Researcher walks around the classroom and gives the necessary guidance to the students in time. Then, asks students to consult and learn the contents about these problems after class and enhance their knowledge reserves.

Step3 Information Collection

Researcher asks students what problems they have in solving problems. After that, pays more attention to problems that students do not have the ability to address by themselves.

Group members present resources in the classroom. Students solve simple problems by themselves without too much guidance and make use of classroom time. All members have discussions and share their opinions sitting together. One student records everyone's thoughts and the others make a final summary.

Step4 Group Presentation

Each group selects a representative to give a presentation about the results of their group learning in class, and the other groups take notes or ask questions after the presentation. Researcher takes note of what students said and emphasizes important knowledge, adds up some information that students do not mentioned.

Step5 Comprehensive Evaluation

Students read this text and look back the learning process about what they have been learned in this lesson. They make self-evaluation, peer evaluation, text summary as well as do reflection on this lesson.

Researcher reviews the content of this reading text and summarize the topic of this text and asks students to read the text and follow the recording while thinking what they have learned in the class. Finally, researcher evaluates the learning behavior of each group, encourages students to cooperate with others.

Checklist

Evaluation Standards	Score (one to five, round number)
1. Speak loudly and clearly	
2. Speak fluently	
3. Speak accurately	
4. Use linking words accordingly	
5. Act vividly	
Total:	

Conclusion

This lesson uses the sports topics that students are interested in as an introduction to stimulate their interest and drive them to participate in the learning activities. Through the reading and teaching of reading material, students can master the conversion of information and images by using the learning strategy——mind-mapping. Students can master the main idea of the text and the language knowledge contained in it around basketball theme, and also guide students to set up learning goals actively and develop their volitional quality of not giving up when they face the difficulties.

Lesson 9 Persistence——Trouble Is a Friend

Teaching Concept

It is not too difficult for a student to be motivated; a whim is difficult to sustain; external motivation to achieve a goal or receive a reward is short-lived and will return once satisfied. What is difficult is to have a strong and sustained motivation to learn. The willingness to learn from the heart is persistent and proactive. The source of junior high school students' motivation to learn is more from the "external drive" rather than "internal drive". In order to maintain a strong and sustained motivation to study, it is necessary to start from the heart. We need to examine why we want to learn? What is the meaning of learning? To form an understanding, firm confidence, stimulate their own inner vitality, you have a heartfelt motivation to learn, so that you can have a stronger and more sustainable learning power. Problem-Based Learning (PBL) specifically encourages students to think critically were when the teacher provides activities during questioning, discussing problems, and making solutions related to the topic in the course. Students work in collaborative groups to identify what they need to learn in order to solve a problem. They engage in self-directed learning (SDL) and then apply their new knowledge to the problem and reflect on what they learned, and the effectiveness of the strategies employed. With PBL, the instructor's role is to guide and challenge the learning process, rather than provide knowledge, while students engage in knowledge construction through teamwork. In alignment with constructivist theory, PBL promotes lifelong learning through inquiry.

Teaching material: Module6 Unit2 in the first book of Grade 8 of the Foreign Studies Edition

Students: 33 Junior high school students from Class 4, Grade 8 (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To activate background knowledge and be familiar with the related reading topics.
2. To learn to analyze and solve problems in the target language.
3. To use the strategy of skimming, summarize the general idea of the article and form a mind map.

Teaching Process

Step1 Problem Posing

The teacher plays the song “Trouble is a friend” and asks questions:

a. What's the name of the song?
b. Is trouble a friend for you? And why?
c. What will you do if you have some problems in your life?

The researcher used the way of listening to a song and guessing its title to introduce the reading teaching in this lesson; the song was related to the theme of the reading material to help students anticipate the reading material; and the questions asked were close to the students' lives to stimulate students' enthusiasm for learning this lesson.

Step2 Task Allocation

Students in group one, two, three and four read Steve's letter to Diana and answer the following questions:

Can you explain the meaning and usage of the new words or phrases in your own way? (come round, reason, tryout, angry, no longer, repair)

a. What is Steve's problem? Did Steve tell his father the truth?
b. Why is Steve not allowed to use his father's computer?
c. What is Steve's feeling? What are Steve's questions?
d. If you were Steve, what will you do?

Students in group five, six, seven and eight read Diana's reply to Steve and answer the following questions:

a. Can you explain the meaning and usage of the new words or phrases in your own way? (truth, at least, honest, apologize, bill, pocket money)
b. In Diana's opinion, how many mistakes did Steve make? What are they?
c. How many suggestions did Diana give? What are they?
d. If you were Diana, what's your suggestion?

Students explain the meaning and usage of new words in their own way, and in the process solve reading barriers; divide the group and ask different questions about the reading material to help students analyze and solve various problems in a targeted way and create partially open-ended questions to help students develop their thinking and read the material more accurately.

Step3 Information Collection

First, students complete the questions independently; Second, students get the final answer through group exploration; Last, students work together to solve the confused problems. In the process of discussion, each group member should play his/her role, and the teacher can provide guidance in case of difficulties.

Grasp the main idea of the reading material; students complete the questions independently, which facilitates the cultivation of students' ability of independent inquiry; group discussion to get the final answer and cooperation to solve the confusing problems can cultivate students' cooperative learning ability.

Step4 Group Presentation

Students present the results of the discussion. Representatives of the group present their views on the issue and raise questions that they are confused about. Other students can also ask questions. The researcher guides students to solve these

problems and makes supplement and emphasis on the students' questions about learning skills.

Students presenting themselves or asking confusing questions can improve their independent learning ability and enhance their confidence and staying power in learning, other students asking questions can get different views on the reading materials from them, and the researcher has a deeper understanding of the reading materials in the process of guiding the students to solve the confusing questions.

Step5 Comprehensive Evaluation

Firstly, the researcher summarizes that the problems Steve encountered, and the suggestions Diana gave; what solutions can also be taken to solve Steve's problems. Secondly, guide students to carry out self-evaluation and peer evaluation, and put forward some suggestions for the reading class, and then the teacher evaluate students' classroom performance. Finally, the researcher assigns homework: What's your biggest problem? Try to give yourself some suggestions.

Conclusion

The lesson was in the form of a letter, and the introduction of a theme-related song reached a match with the psychological characteristics and the psychological problems faced by students of this age group. It allowed students to build bridges of communication and trust with the researcher and with their classmates. A question-and-answer exchange allowed us to understand the students' real thoughts when they encountered problems and the differences in each student's point of view. Eventually, through mutual help among peers, students consulted and reported to the researcher. Different education and guidance were given to each student on the solution to the question of "whether or not they can persevere when encountering learning problems" according to the differences in their individual situations. Most of the students were convinced of the significance of learning and their belief in learning.

Lesson 10 Intensity——How I Learned to Learn English

Teaching Concept:

Learning is a lasting thing, the only way to make progress is to be persistent. Some students love to learn, but do not devote enough time to study every day, or, in other words, the intensity of learning is not enough, just looking for a kind of psychological comfort, or psychological massage, in fact, the intensity is far from enough, resulting in low learning effect. In the end, not feel the preset learning goals. In learning, it is necessary to be persistent, but also to maintain a certain intensity, so as to ensure that the learning effect, to achieve the purpose of learning. If the battle line is stretched too far and a certain intensity is not maintained, the learning effect will be greatly reduced. Problem-based learning (PBL) is a constructivist educational approach that organizes curriculum and instruction around carefully crafted “ill-structured” problems (Barrows, 1988). The emphasis on Problem-based Learning is another key aspect of Dewey's approach. This method encourages students to apply their knowledge to solve real-world problems, thus creating a more profound understanding of the subject matter. It can also encourage students to experience their learning and find ways to solve problems for themselves. PBL can promote critical thinking skills, problem-solving skills, creative skills, and analytical skills, which are important and crucial in the 21st century, as they can enhance an individual's life.

Teaching material: How I Learned to Learn English, from ***Go For It!*** by People’s Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To develop a correct attitude to learning and a clear motivation for learning.

2. To comment appropriately on the methods and intensity of learning.

3. To plan balance the studies with their hobbies and interests and learn to find ways to solve problems positively when they encounter difficulties.

Teaching Process:

Step1 Problem Posing

Check(√) the ways you study English. Then add other ways you sometimes study.

____ a. by working with friends	_____ e. by asking the teacher for help
____ b. by making word cards	_____
____ c. by reading the textbook	_____
____ d. by listening to tapes	_____

The researcher elicits the answers to the following questions from students according to the pictures and remind students to use the target structure by doing something:

a. How do you improve your pronunciation?
b. How do you improve your speaking skills?
c. How do you improve your reading skills?

Step2 Task Allocation

Complete the sentences with what Wei Fan learned from watching movies.

Use words and phrases from the reading material.

1. I can understand the meaning by watching their _____ and the _____ on their faces.
2. I can get the meaning by listening for just the _____.
3. My pronunciation improved by listening to the _____ in English movies.
4. I learned _____ sentences like "It's a piece of cake" by watching the movies.
5. I can find the meaning of new words by looking them up in a _____.

Before listening to a recording, researcher can ask students to keep their textbooks closed while introduces the context of the conversation they are about to hear like this:

A group of students are at an English club meeting, and they are discussing the best ways to learn English. What questions or ways of learning English do you think you will hear in this conversation.

Students may brainstorm a series of questions or ways of learning English. They can discuss in the group (4 students a group) and note down the views by a groupmate.

After students have listened to the recording, they can compare their predictions to what they actually heard in the conversation. To give students practice using the target language in conversations, and encourage them to make conversation using the information like this:

a. Have you ever studied with a group?

b. Yes, I have. I've learned a lot that way.

Step3 Information Collection

Researcher can do a quick students survey and ask students which of the methods mentioned are methods which the students have tried or are currently using. Then

researcher elicit responses from the students to find out which method they find most/least effective in learning English and why.

Step4 Group Presentation

Researcher can divide Students into two groups. One group read the Jack's parts and the other group read Annie's parts, which can help students to get the main idea. Then ask questions to know if Students get the main idea:

a. Who has the problem? And who's going to help?

b. What's the problem?

Interview your partner.

	I learn English by ...			My partner learns English by ...		
	yes	no	how often	yes	no	how often
doing grammar exercises						
taking notes in English						
reading English books/magazines						
keeping a diary in English						
using an English dictionary						
...						

Researcher can ask some specific questions about the conversation and make students read the conversation carefully and then answer these questions:

a. What makes Jack feel a little nervous?

b. What's Jack's problem when he reads? And what does Annie suggest?

c. What's Jack's problem with words? And what's Annie's advice?

Researcher focused students' attention to the key words and sentence patterns in the conversation:

A little nervous, be patient, word by word, word groups, probably understand more than you think, the more you read, the faster you'll be...

After that, researcher can play the video of the conversation and then invite some students to role-play the conversation as open pairs.

Step5 Comprehensive Evaluation

1. Evaluating students' independent learning skills

The researcher gave students a self-evaluation sheet and a test paper. The test paper lists theme-related questions for students to answer and fill in the self-evaluation sheet according to the answers to the questions, which greatly reduces the teacher's evaluation time and facilitates students' self-knowledge.

2. Evaluating students' cooperative learning styles

According to the self-evaluation forms and test papers filled out by the students, the researcher made a reasonable grouping, following the grouping method of "stratification and then grouping, combining the strong and weak". Then they wrote an open-ended essay on the theme of "Let me talk about good learners". After the group writing is completed, let each group exchange their essays for review and correction, and finally researcher will unify the reading and reviewing. After these sessions, researcher will be able to understand the real composition situation of each group and analyze the strengths and weaknesses of each student according to the quality of the composition within the group and the results of inter-group assessment.

Conclusion

In addition to implementing the teaching of professional knowledge and skills, this class also focuses on the cultivation of students' emotional attitudes and values. Through teaching explored how to control the scientific and effective learning intensity, guiding students to develop good learning habits and the spirit of cooperation. The whole teaching is closely connected with examples from students' real life, and "taking students as the center of the classroom", so as to pay attention to students' learning process and results. Group discussions and presentations create opportunities for

students to learn cooperatively and guide them to learn to solve practical problems in authentic contexts.

Lesson 11 Intensity—— A 22-year-old computer programmer

Teaching Concept

The study of motivation concerns those internal processes that give behavior its energy, direction, and persistence. Motivational intensity is defined as the strength of the tendency to either approach a positive situation or event or to move away from a negative situation or event. When motivation varies, behavior varies. The principle of intensity implies that a learner will learn more from the real thing than from a substitute. Likewise, a learner is likely to gain greater understanding of tasks by performing them — rather than merely reading about them. 'Intensity' in the realm of behaviour analysis refers to the severity or forcefulness of a behaviour. It's about gauging how extreme the behaviour is and whether it's disproportionate to the situation at hand. Your exercise intensity must generally be at a moderate or vigorous level for the most benefit. Exercise intensity is clearly an important factor in determining the type and magnitude of physiological adaptations to training. Together, exercise frequency and duration determine the overall training volume are important factors as well.

Teaching material: How I Learned to Learn English, from ***Go For It!*** by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To stimulate students' interest and motivation to participate in classroom activities by the introduction of theme songs and the novelty of detective stories

2. To cultivate students' cooperative spirit and critical thinking through group cooperative thinking and reporting

3. To make students get the benefits of continuous learning and thinking by setting and completion of self-learning goals

Teaching Process:

Step1 Problem Posing

Researcher first asks the students to listen to the ending song of "Detective Conan “and mobilize the students' enthusiasm for learning. According to the film question "if you are a detective, what are the most important things fo or cases?", students are encouraged to speak freely. This activity points students' attention to the subject of the murder. Researcher can ask students to naturally enter the specific context of this article by asking questions to prepare for formal reading.

Step2 Task Allocation

The researcher guides students to read the title of the article and three murder maps. Piece and think about the following questions:

a. What do you think will happen in this story?
b. What makes you think so?

Researcher is to quickly activate the knowledge information icons already in the students ‘minds and encourage them to make bold predictions about the content of the reading materials through prepared questions. The researcher allows students to freely use their imaginations and allow students to make false predictions when communicating and discussing problems, because they can correct them through later reading.

This activity has greatly stimulated students' interest in reading because they want to verify whether their predictions are correct through the following reading.

Step3 Information Collection

After making a prediction, the student can read the article with questions. According to the characteristics of the narrative style of this article, researcher asks the students to first read the first two paragraphs of the article, quickly capture the four important information of the characters, places, time and events in the story, and compare this information with the previously predicted content. To determine if the prediction is correct and the students understand the story by setting a context and background for understanding the story. According to the narrative clues, the researcher makes the

students read, and designs a form and some questions, asking the students to fill in the information correctly after each segment reading activity:

a. What does the suspect look like?
b. Did the suspect kill the man?
c. How did the man try to fight off his attacker?
d. How do you know?

In order to confirm whether their predictions are correct, students can confirm, improve, and change the original speculations and then communicate with each other to discuss the questions given.

Read the relevant paragraphs and find sentences that can confirm the predictions from the articles read, read them out loud to assumptions. Content of the previous process of predicting the problem, reading and checking the paragraph of the article in this way until you read the full text. After processing the paragraph, the teacher will let the students carry out the same problem according to the information already acquired, judging the right and wrong, and drawing conclusions again.

Step4 Group Presentation

Researcher raised the following questions: Do you think the suspect is guilty? Why?

In the teaching process, the teaching method of group cooperation is adopted. In the group, let the team members independently conduct the study activities, then conduct group discussions to discuss the issues and share their results. Members analyze the author's intentions through the supporting facts or details in the text. from understanding the facts of the article to understanding the content of the article in depth. This study activity allows students to share the information and knowledge gained from reading and experience the joy of reading.

Step5 Comprehensive Evaluation

Researcher set up a situational activity to detect the mastery of the text.

It is a normal morning on Tuesday. A student called Tom went back to home afterschool. But his parents cannot find him even it is 8 o'clock. What happened to Tom? He was kidnapped.

Researcher assigns the task: Now if you are Xiaoming'parents? what will you do?

Students will use the cultural knowledge and linguistic knowledge obtained from the article and the original information knowledge to integrate resources, cooperate to complete the real simulation problem proposed, and use the language and experience language in the process.

Conclusion

Researcher's questions should be based on the test sites and difficulties of the teaching content, so as to ensure the realization of teaching objectives. Researcher can ask questions at the test sites and difficult points, students can learn how to focus on key points, difficulties and test sites. If students can be motivated to raise doubts here, they can promote the effectiveness of teaching, train students to discover valuable problems

on their own, promote the formation of students' system knowledge structure, optimize teaching, and facilitate students to grasp test sites during review.

Lesson 12 Intensity——From Problems to Solutions

Teaching Concept:

Intensities (sometimes called Overexcitabilities) provide a useful tool to analyze content because they resonate with many learners, particularly the gifted. Inviting students to recognize themselves in content deepens understanding and provides motivation for stronger analysis. Intensity describes how much there is of physical quantities, such as sound and light output from a source. It refers to the magnitude, or strength, of a given physical quantity at a given location in space. Depending on the type of physical quantity, intensity can be measured in different ways. Affect intensity refers to individual differences in the strength or intensity of people's emotional experiences (Larsen & Diener, 1987). "Problem based learning (PBL) is the main way to cultivate students' problem-solving ability. 2022 version of the standard also repeatedly emphasizes the need to cultivate students' ability to analyze and solve problems, to integrate language learning and content learning, and to guide students to learn to learn to use. The students should be guided to learn to learn and learn to use one. Reading, as an input cognitive activity of acquiring information and communicating ideas through words, is both a necessary condition and an urgent need to improve problem-solving ability. William Gray, the former first president of the World Reading Institute, put forward the concept of three levels of endeavor: Read the lines, read between the lines, Read beyond the lines. This requires teachers to dig deep into the text, reading for thinking, reading for problem solving, and reading for problem solving. This requires teachers to dig deeper into the text, to have the awareness of reading for thinking and reading for problem-solving.

Teaching material: From Problems To Solutions, from ***Go For It!,*** by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental group)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To foster students' divergent and critical thinking by connecting the reading of texts to personal experience.

2. To utilizes a question chain format that leads students to continually think, analyze, and solve problems through constant questioning, follow-up questions, etc.

Teaching Process:

Step1 Problem Posing

The researcher asked: What's your biggest problem in your life? Find a student to answer interactively.

First, based on the title: From problems to solutions, the students were asked to predict what is the article about? The students predicted that the article might be about What problems? What solutions?

Second, the researcher showed two pictures. The students' responses were visualized through multimodal information. From general to specific. Meanwhile, the students were guided to predict various problems and categorize them in real time according to the board.

Step2 Task Allocation

Close reading of the first paragraph, identifying the problem (What is the problem or challenge) through small adjectives and key verbs, in the form of blue team Vs red team. Independent close reading of the text to find out the answer to the question on the board. Find out on your own, then at your table, and then the researcher asks the questions. Sort out the main points of the text according to the timeline.

Step3 Information Collection

This part is a textbook activity, the researcher, in view of the better learning situation in this lesson, the activity is slightly done, focusing on the reading context, solve the vocabulary through Explaining, paraphrasing and other forms. The researcher and the students, according to the content of the board, from the participants and process, two aspects, together to summarize the solution of the problem solutions.

The researcher showed several pictures to tell the story of Egyptian Pharaoh Ramses II and the temple. This fully attracts students' interest and relieves the fatigue of the classroom, and also prepares students well for the following analysis. According to the timeline and process, summarized by combing, students in groups of four, discuss and summarize the spirit reflected in the Aswan Dam and give reasons.

Step4 Group Presentation

The researcher showed the photos of his own congested trip to Xi'an and asked students to discuss:

a. Is it good to remove the ancient city wall?
b. If it is not good, why?

(The researcher shows key verbs on the PowerPoint as scaffolding prompts).

Researcher and students together summarize the problem-solving strategies they have learned in this course: reduce big problems to zero and then solve them step by step,

piece by piece. Problems lead us to solve problems, and solving problems sometimes creates new problems, which is the development process of our human society.

Step5 Comprehensive Evaluation

Investigate and discuss the problems caused by the Aswan Dam project and possible solutions. It just fits perfectly with the summary of the previous session, and it is to take the way of Model United Nations to discuss, the task has authenticity, communicative, reflecting the use of English to do things, learning English in doing things, learning by using, can really promote the students' ability to analyze the problem and solve the problem.

Conclusion

This lesson is about enhancing students' problem-solving skills in reading instruction. The researcher used the form of problem chain to guide students to keep thinking, analyzing, and solving problems through constant questioning, follow-up questions, and so on. Teaching strategies were infused throughout the reading and the paths and strategies for problem solving were refined and summarized with the students. In the final output that transfer activity and homework session, it goes beyond the discourse itself and uses the problem-solving strategies developed in this lesson to solve real problems in real life, so as to put learning into practice.

Lesson 13 Intensity——A Beautiful Earth

Teaching Concept

The theory of persistence goes back to the Athenian philosopher Plato who in his work Timaeus, defined pain not as a unique experience, but as an 'emotion' that occurs when the stimulus is intense and lasting. Exercise and physical activity are generally categorized into three different types of intensity: low, moderate, and high (sometimes

called "vigorous"). According to Geen, motivation refers to the initiation, direction, intensity and persistence of human behavior. Based on a constructivism view of learning, new knowledge is closely linked to the learner's prior knowledge and experience. Therefore, Problem-based learning (PBL) created a real situation and set up the questions which were related to students' lives to stimulate students' prior knowledge and encourage them to answer questions more actively. Cooperative learning theory provides a strong underlying theoretical support for the PBL method. The group discussion and learning not only give full play to each individual's ability, but also promote the development of students' thinking skills and cooperation awareness. In the ages of quality-oriented education, the application of PBL method in junior high school English reading class should connect real - life problems with students to create real situations and cultivate students' practical ability to solve problems. Motivation refers to the forces within a studnte that affect the direction, intensity, and persistence of voluntary behavior. Motivated stidents are willing to exert a particular level of effort (intensity), for a certain amount of time (persistence), toward a particular goal (direction).

Teaching material: From Problems To Solutions, from Go For It!, by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To enjoy the natural scenery of the world and attach much importance to protecting the Earth.
2. To strengthen the students' sense of a community with a shared future for mankind via discussing the measures of protecting the Earth.
3. To infer the relationship of the possible reasons of pollution and viable solutions to

this problem

4. To develop a critical thinking and express themselves creatively when discussing the topic of environmental protection in groups.

Teaching Process:

Step1 Problem Posing

The Researcher show a short video about nature and creates real-life problem situations based on students' existing background knowledge. Then asked students to have a look of the whole passage and answer some questions:

a) What did you see in this video?
b) What other things can we find on Earth? Could you draw a mind-map to tell me about more things on Earth?
c) What is the main idea of this passage?
d) How many parts can this passage be divided?

Starting the problem-solving process (5 minutes)

Step2 Task Allocation

The group designed their own mind-maps based on the examples of mind maps given by the researcher and finished the group cooperation discussion form.

Researcher asked students to read passage carefully and answer some questions. What's more, students were allowed to fill in the tables provided, in order to complete the information missed in the tables. Questions for students:

a) What are the facts and opinions stated in the text?
b) Can you find any evidence to support the points made in the article?
c) What is the strength and weakness of this poster?

Interview with your classmates:

Protect the Earth		
What are there on the Earth?	Where do they live?	How do you describe them?
What pollution is there on the Earth?	Why is there so much pollution?	What effect does the pollution have on the Earth?

Researcher guided students to discuss in groups using scanning and skimming skills in order to improve students' ability of guessing the meaning of the word in context in the group discussion.

Step3 Information Collection

The group discussed and completed the table in group cooperation discussion form. Then they introduced their solutions to problems according to the results in group cooperation discussion form. Researcher guided the group to work together to analyze the problem, exchange information, present their own ideas and add to the information gathered by other group members. At the same time, students were guided to collate and processed the results of the problem discussion and eventually integrated their ideas to come up with a solution to the problem and present the solution as a mind map.

Step4 Group Presentation

One representative from each group was selected to demonstrate the views of their own group by displaying the mind-maps. In this step, each group evaluated and scored other group's performance at the end of the presentation of group works according to the evaluation scale.

Step5 Comprehensive Evaluation

Each group evaluated and scored other group's performance at the end of the presentation of group works according to the evaluation scale. Students summarized and reflected on their learning and the whole process of group work after the lesson was completed, which they made an authentic evaluation of their performance in the lesson and reflected on it by means of group cooperation discussion form.

The researcher reflected on and summarized various aspects of their classroom implementation, which could continuously improve the group's learning effectiveness. The reflection involved two aspects. First, evaluate the performance of the seven groups based on the researcher's observation and gave timely feedback to the students. Secondly, adjust the teaching strategies and constantly improved the quality of the classroom after the summary and reflection on the deficiencies in classroom teaching.

Conclusion

This class begins with a discussion on the hot news topic of protecting the earth and begins with a description and explanation of the reading material. In the process of reading, students can complete tasks according to continuous instructions and express their personal views clearly. At the same time, it reflects that students are the main body, guide students to take the initiative to participate in the class and improve the interest and motivation of learning English; Guide students to use reading strategies and reading skills to solve problems. Taking action to protect the environment requires long-term, sustained behavior to connect students with the awareness of endurance and perseverance in everything we do, including our daily learning.

Lesson 14 Reflection and conclusion

Teaching Concept

Learning motivation research is very important in foreign language teaching. Without understanding the motivation of students, it is impossible for teachers to effectively

mobilize the enthusiasm of students and stimulate their enthusiasm for learning foreign languages. Teaching without the participation of students is only teaching failure. Only by insight into students' psychology, understanding their internal and external needs, and strengthening the reasonable and effective factors, can teachers better impart knowledge and skills and achieve the teaching effect of twice the result with half the effort. Problem-based Learning embodies the idea of constructivism, it emphasizes the subjectivity of students, and it conforms to the process of integrating students' independent inquiry into the process of knowledge construction. By guiding students to acquire knowledge with problems, PBL is also strongly supported by the constructivism theory. Cooperative learning theory follows the law of students' cognitive development, which promotes the good interpersonal relationship between students, and it greatly mobilizes the enthusiasm of students to participate in learning. In cooperative learning, learning tasks are assigned and shared by all students, so the problems will be easily to solve. It combines students' knowledge and experience, promote their mutual help and common progress in learning, enhance the learning motivation among students, and then improve the teaching quality and good teaching atmosphere of the whole class. Group cooperative learning plays an important role in improving the efficiency of classroom teaching, and it acts on cultivating student' emotional communication, cooperation and common improvement.

Teaching material: From Problems To Solutions, from Go For It!, by People's Education Press.

Students: Junior high school students, Grade 8. (Experimental Class)

Duration: 60 mins.

Teaching Aid: notebook multimedia laser pointer PPT

Teaching Objectives:

1. To review and summarize relevant definitions of learning motivation and problem-based learning.
2. To deep discussion and thinking about problem-based teaching efficiently
3. To rethink of learning and also the problems existing in the course

Teaching Process:

Step1 Problem Posing

The class of 33 students was divided into 4 groups, almost equally divided between males and females. The group leader assigned tasks and the other group members acted as: two interviewers, two information recorders, two analysts, and one reporter.

The researcher presented questions for discussion:

a. What does it mean to be motivated to learn as a middle school student?

b. What are the three main components of learning motivation in this course?

c. Which part of learning motivation do you think is the most important? Why?

d. How does the PBL learning model work, in the classroom? What are the pros and cons of this learning model?

The group discussed and completed the table in group cooperation discussion form. Then they introduced their solutions to problems according to the results in group cooperation discussion form.

Group Cooperation Discussion Form					
Date		Group		Lesson	
Role Assignment					
Discussion Process					
Group Self-Regulation					

Step2 Task Allocation

Around these four questions, students express their opinions based on reading their notes freely. The two interviewers interviewed the other six students in turn, while the reporter took notes. Then, the two interviewers finished interviewing each other. The tabular materials after the interview are sent to the synthesis analyst for brief summary. Finally, the report materials to the reporter proofread. During this time, the researcher can inquire between the four groups, observe the members of each group and provide appropriate guidance.

Step3 Information Collection

The researcher collected and compared the research reports of each group, and assigned the four questions to each group according to how well each group summarized the reports. In this way, the secondary allocation is carried out in order to let each group member have a deeper understanding of the problem and solve the problem. Group 1 (Question a); Group 2 (Question b); Group 3 (Question c); Group (Question 4 d). After the distribution, each Group member before according to the role of discussion and information acquisition.

Step4 Group Presentation

The reporter of each group elaborated on these four issues in turn. Members of the other three groups can ask questions of the group and discuss together.

Step5 Comprehensive Evaluation

Group cooperation is a crucial part of PBL method applied to English reading teaching, so it is necessary for the groups to evaluate other groups' performance according to the evaluation scale for each group. At the end of the class, each group, and students as well as the teacher reflected on the issue. Therefore, the reflection on the issue was mainly embodied in three aspects: the groups' evaluation, the students' reflection, and the teacher's reflection.

Groups' evaluation: In this step, each group evaluated and scored other group's performance at the

end of the presentation of group works according to the evaluation scale.

Conclusion

During the application of Problem-based Learning, students set their own learning tasks. Their classroom performance is so active that the degree of completing teaching goals is higher. The channel of knowledge exploration basically depends on the students'

specific thinking and practical operations. In addition to the impact on students' English reading thinking, PBL combines knowledge and practice. Therefore, PBL is more pragmatic for current English reading teaching. Students not only have the knowledge, but also get a different feeling in process of learning. According to the interviewees' responds in this interview, there are some shortcomings in the implementation of this Problem-based Learning experiment, and researcher still has doubts about the process.

APPENDIX H

SPECIFIC TEACHING ACTIVITIES ARRANGED BY THE PROBLEM-BASED LEARNING MODEL TO ENHANCE STUDENTS' LEARNING MOTIVATION

Specific teaching activities arranged by the Problem-Based Learning model to enhance students' learning motivation

Figure 3 Orientation of Problem-based Learning Model

Figure 4 Pre-test of Learning Motivation Questionnaire for Junior High School Students

Figure 5 Evaluation in groups

Figure 6 Students' problem-solving presentation(recycle)

Figure 7 Students' mind-map of my favorite subject

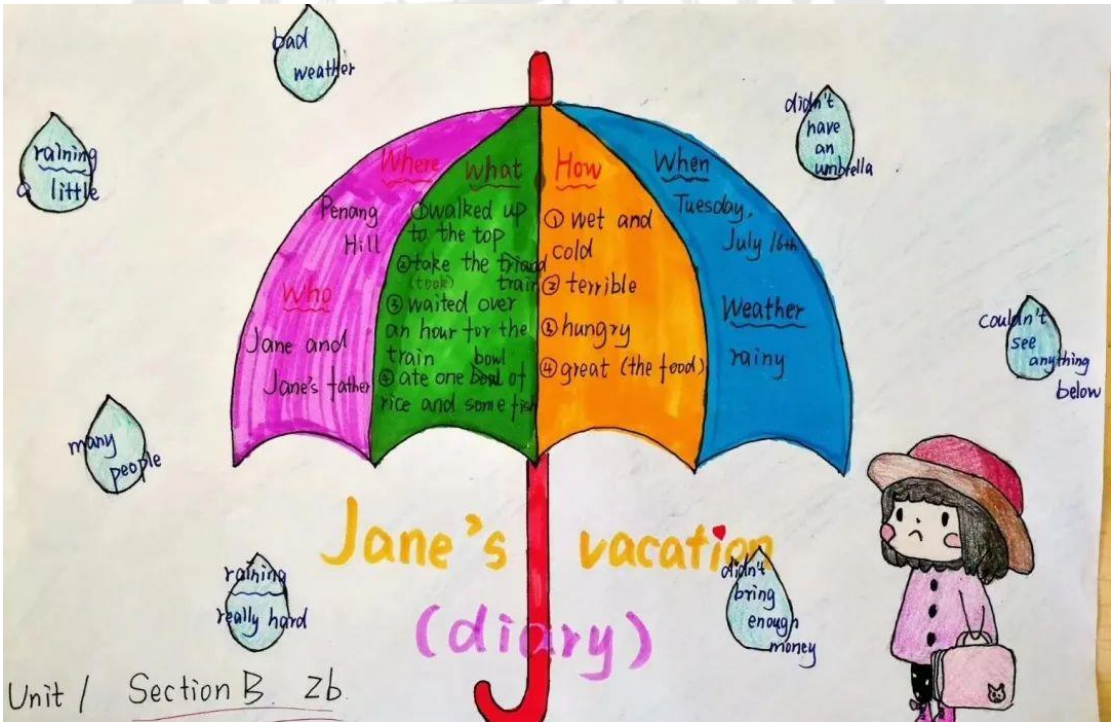


Figure 8 Students' mind-map of "Where did you go on vacation?"

VITA