A Case Study of Primary School Calligraphy Teaching Based on PBL Teaching Model - Take "Narrow Left, Wide Right" as an Example

Boran Shi[1,a,*]

[1]Elementary Education College, Chongqing Normal University, Chongqing, China

[a] email: 2018051730014@stu.cqnu.edu.cn

*Corresponding Author

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Abstract: Problem-Based Learning (PBL) is a problem-based learning teaching model. This model uses a series of activities to solve specific problems, thus enhancing students' independent learning and problem-solving skills. Compared with traditional calligraphy teaching, PBL-based teaching design can better facilitate students' learning. Therefore, this study introduces the PBL model into the design of elementary school calligraphy teaching and learning activities to improve students' problem-solving skills, calligraphic literacy, and writing ability.

1. Introduction

In 2011, the Ministry of Education issued a document entitled "Opinions on the Development of Calligraphy Education in Primary and Secondary Schools". The document highlights the important value of calligraphy education in order to implement the spirit of the National Medium and Long-Term Education Reform and Development Plan (2010-2020), which emphasizes the need to comprehensively implement quality education and to inherit and promote the excellent Chinese culture in primary and secondary schools. In the second part of the curriculum objectives of the nine-year compulsory language education level, the basic philosophy of teaching calligraphy education is proposed, namely, to follow the regularity of physical and mental development of students and the laws of learning. The teaching of writing should pay attention to the instruction of students' writing posture, guide students to master basic writing skills and develop good writing habits; focus on and strengthen formative assessment; advocate the use of growth records, such as, records about students' usual performance and interest potential, students' self-reflections and summaries, teachers' and peers' evaluations, and information from parents; pay attention to students' daily interest in writing, pay attention to writing The students are motivated to write correctly, correctly and neatly.

Problem-based learning (PBL) is based on cooperative learning, independent learning and inquiry-based learning. It is a new student-centered and teacher-led teaching model that advocates effective student learning in the process of problem solving. PBL has a positive effect on the reform of calligraphy teaching. In this study, we will introduce the PBL teaching model into the design of elementary school calligraphy teaching, and conduct research on the design of calligraphy teaching activities as a way to improve students' writing skills.

2. Overview of research on problem-based learning

2.1. Definition of problem-based learning

PBL is an innovative teaching model based on the concept of constructivism and a variety of cognitive psychology concepts. This model is different from the traditional teacher-centered teaching model, in which students are only the recipients of knowledge and the objects of indoctrination. PBL teaching model takes students as the main learning subjects, creates a meaningful problem situation, guides students to conduct active inquiry with real problems, and solves the specific problems through a series of activities, so as to enhance students' independent

learning and problem-solving ability. The teaching model was first applied in the 1950s as a new teaching model implemented by American professor Howard Barrows in 1969. It broke the traditional teaching method of mainly imparting book knowledge and focused on the skill development of students. In the initial stage, not all knowledge was imparted to students, but students were first given some clear examples, and students were guided by the teacher to ask questions, explore the problems and give solutions on their own in small groups. In this process, students not only have a deeper understanding of the subject knowledge and stimulate the original experience, but also develop the ability of independent thinking and problem solving.

Under the PBL, students have made great progress in skill learning and their independent learning ability has been improved, which reflects great advantages compared with the traditional teaching mode. The "problem-based learning" teaching model is not only used in the field of medical education, but also gradually adopted in other educational fields, such as higher education, basic education, various professional education, and adult education. At present, PBL has been widely used in various fields in different countries.

In general, PBL sets learning in clear and meaningful problem situations, puts students in problem-solving positions, and allows them to solve complex problems on their own, developing their independent learning and problem-solving skills, as well as developing basic knowledge and skills in the subject. This model of teaching and learning is conducted in small groups, with the teacher providing access to learning resources and appropriate guidance on learning methods, allowing students to solve problems in real situations. For students, problem-based learning can help them develop an active learning mindset and learn to learn actively. For teachers, they should get rid of the traditional teaching model and try to establish a problem-based inquiry classroom, so that students can think and solve problems in inquiry activities, thus promoting the development of students' learning ability.

2.2. The operation procedure of problem-based learning

(1) Formation of groups and clear learning objectives

PBL is firstly based on group cooperation. In the PBL teaching model, it is advocated that students should start group cooperation for problems to solve them. Members in the group divide the work and help to solve the problem together. To improve students' team consciousness, it is necessary to bring into play not only students' own subjectivity, but also the cooperation and complementarity of the group. Clear and specific learning objectives are one of the important parts of the preparation for PBL. The learning objectives should not only reflect the requirements of the course objectives and show the important and difficult points of the course learning, but also meet the development needs of students. For the teacher, help students establish a learning goal, followed by a group-based learning activity.

(2) Create problem scenarios and analyze problems

After clarifying the learning objectives, the teacher creates a problem situation by describing and designing the learning environment according to the learning objectives and the content of the course. Based on the analysis of the problem situation, students choose the problem to study according to their own interests and experiences. After determining the PBL research problem, students first think about the problem based on their previous learning experience and give hypothetical solutions to the problem, and then discuss and analyze and integrate the existing concepts within the group.

(3) Cooperative inquiry and solution seeking

In this stage, students conduct independent inquiry and cooperative communication under the guidance of teachers, and creatively carry out inquiry learning activities. In the whole process, the teacher should take the role of a guide to actively guide and continuously promote students' independent learning and independent inquiry, and to change the traditional teaching mode of the teacher imparting knowledge mainly. Students in the group obtain relevant knowledge and information through various means, and according to all the collected information to unify, analyze, summarize and integrate, summarize a feasible solution to the problem, the teacher according to the

students' solutions to evaluate the summary, give suggestions, so as to solve the problem, exercise the students' independent problem-solving ability and knowledge skills, and promote their own development.

(4)Display research results, consolidate and improve

After the group gets the solution to the problem, the group learning results are formed, and each group can use various forms to display the group results, such as slide presentation, oral report, etc., and also can use various means and tools to assist in the display. In the process of displaying the results, it is also the process of summarizing and sorting out the students' knowledge, the members of the group continuously communicate with each other to deepen their understanding and consolidation of knowledge. In this process, teachers can evaluate and summarize the activities of each group according to their presentation, and judge whether students have mastered the book knowledge.

(5) Review, reflect, and form summary evaluation

After solving a problem, it is necessary to reflect on the process of problem solving. Reflection exists in the process of students presenting their results. Self-perception of learning, evaluation among classmates, and teacher's evaluation will all produce reflection. At the same time, teachers need to guide students to think about the connection between what they have learned and their previous knowledge, the degree of participation of each student, and the sense of cooperative inquiry among students, all of which need to be summarized and reflected on in an all-round way. In the process of reflection and sublimation, it helps students to better master and understand the new knowledge.
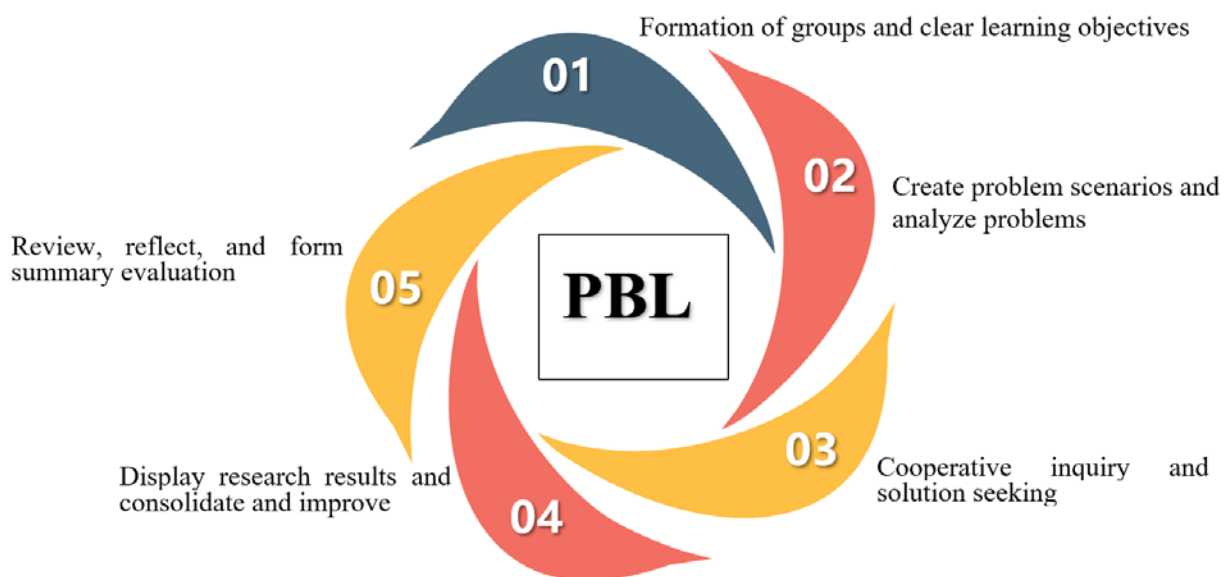

Figure 1 The operation procedure of problem-based learning

3. The Application of problem-based learning in the Teaching Design of Primary School Calligraphy Curriculum

3.1. Formation of groups and clear learning objectives

The PBL-based calligraphy curriculum focuses on cooperative learning among students. In the teaching process of "Narrow Left, Wide Right", the teacher focused on the teaching objectives of the course and integrated them into the whole process of problem-solving activities. Before the lesson "Narrow Left and Wide Right" was formally carried out, the teacher asked students to pre-study the lesson and guided them to discuss the teaching objectives of the lesson in the classroom introduction session, and finally concluded that the teaching objectives of the lesson were to guide students to master the inter-frame structure of the characters and the pattern of the characters, and to

guide them to recognize the " Narrow Left and Wide Right " characteristics of the characters with left and right structures.

The teacher grouped the students according to their calligraphy learning characteristics and learning abilities. Group leaders were selected and each group member was assigned a division of labor to facilitate the smooth running of the calligraphy teaching activities and the improvement of students' abilities. After the groups were divided, they sat together as a group and used this to initiate the teaching activities.

This lesson not only requires students to master the inter-frame structure and character pattern of "left-right structure", but also to recognize the characteristics of "narrow left and wide right" in left-right structure characters, and to make students love Chinese characters and traditional Chinese culture. The lesson was designed so that students would think independently and work in small groups to discuss and share the learning objectives. PBL takes students as the main learning subjects, allocates and coordinates tasks within the learning groups, and enhances students' independent inquiry and communication skills as well as their sense of responsibility in the face of problematic situations raised by the teacher through group cooperation and communication.

3.2. Create problem scenarios and analyze problems

The teacher created a problematic situation by combining the characteristics of this lesson with a calligraphy short story. The teacher first used multimedia equipment to show the short story "Only a little bit like Xizhi". The story focuses on how Wang Xianzhi, the son of the great calligrapher Wang Xizhi, became attached to calligraphy and loved it during the Eastern Jin Dynasty. This story emphasizes that Wang Xianzhi's mother's profound knowledge of calligraphy helped Wang Xianzhi improve. The teacher gave corresponding fun activities in the context of the story and encouraged students to grasp the key points in the context of the questions created by the teacher.

In this lesson, the teacher proposed a fun activity called "Fire Eyes Find the Difference". The teacher presented the vocabulary cards and organizes them into categories. The teacher showed the five left and right structured character cards. Students maked observations and think about them. The teacher guides the students to clarify the theme of the lesson (classification by structure). The teacher created a problematic situation by focusing on the "left narrow and right wide" rule in the "left-right structure" exercise. The teacher distributed the bags with the cards to each group, and the group members analyzed them, discussed and communicated with each other, and finally consolidated their views and summarize the rule of "narrow left and wide right" in Chinese characters. Each group sented a representative to the stage to write the characters pillow, slightly, habitual and school. The teacher then guided the students to discover the rules of interpolation and avoidance.

During the teaching process, the teacher presents interesting and challenging problem situations that mobilized students' enthusiasm for inquiry. During the problem solving process, certain auxiliary guidance is provided to encourage students to discover the problems based on the information in the problem situations, fully providing them with opportunities for independent and cooperative learning.

3.3. Cooperative inquiry and solution seeking

In this lesson, the problem of how to make students grasp the "narrow left and wide right" rule and be able to write it correctly is solved through a series of cooperative activities such as group exploration, mutual inspiration, and integration of ideas among students.

Students were asked to observe carefully the example character "枕" (As shown in Figure 1, the structure of the character is left and right, and the left side should be written narrower and the right side should be written wider in calligraphy), and through red tracing, observation, discussion and analysis, the following questions were drawn in the form of group work:

First, what else should we pay attention to besides the "narrow left and wide right".

Secondly, the rules of character practice were drawn.

After the students copy, the group members evaluate each other, pointing out the problems and

strengths, and each member speaks and evaluates. After the evaluation, the group integrates the correct ideas and the areas that need attention in writing, and then proceeds to copy "枕" again, and uses the same method and rules to copy other examples.

Figure 2 Example of Chinese characters in the Left Narrow Right Wide class

After the group discussion, it was concluded that the structure of the left and right sides of the character is different, and the left side should be written compactly, while the right side should be written loosely with an open and spacious state. In addition, the students discuss with each other the correct posture of the pen and how to sit. The teacher was constantly on the lookout during the whole process and participated appropriately, which effectively facilitated the process.

In this session, students expressed their opinions and listened to other members' views during the collaborative inquiry process, which was also the main focus of the students' learning activities in this calligraphy class and an important stage for students to improve their problem-solving skills. Students formulate problem-solving hypotheses and get proof through practical exercises, and finally master writing skills.

3.4. Display research results, consolidate and improve

After each group had concluded the "narrow left, wide right" rule, they presented their group results. The teacher encouraged students to present their results in a variety of ways. The teacher organized the students to work in small groups and selected the best characters written by each member of the group and pasted them on the calligraphy display board in the classroom. After each group had reported, the teacher first asked the groups to evaluate each other and then to comment on them. The teacher needed to go into the group at this time to help the group improve the learning results and consolidate and improve them.

In this process, students can find their own problems and shortcomings as well as the strengths and weaknesses of other groups. This process not only affirms each student's learning efforts and achievements, but also facilitates their own learning development and competition with each other

3.5. Review, reflect, and form summary evaluation

Reflecting on the learning activities of this lesson is the final part of the PBL teaching mode in this lesson. Students were asked to reflect on the whole process of learning the "narrow left and wide right" rule, and to clarify what difficulties they encountered in solving the problem and how they solved them. Students would share their reflections with the group and fill out a classroom record sheet.

This process is to help students analyze their own problem-solving process, to learn from their strengths, and to check their weaknesses. This lesson is diverse and holistic in its assessment of students. It focuses not only on the learning outcomes and whether students have mastered the requirements of the learning objectives, but also on students' participation in the process of problem-solving activities, group cooperation and learning attitudes. The main body of evaluation is not only the teacher's evaluation, but also the students' self-evaluation and mutual evaluation, so as to stimulate students' interest in learning, and in the process of evaluation, students also consolidate

their knowledge.

At the end of the class, the teacher extended the knowledge and asked what other rules there are in addition to the "narrow left and wide right" rule. This allows students to reconnect their new knowledge with their previous knowledge and to generate new ideas to stimulate their interest in learning calligraphy and their ability to solve problems on their own.

4. Reflection and conclusion of teaching calligraphy class based on PBL

Integrating the above-mentioned practical application of PBL in calligraphy teaching design, it was found that the teaching activities of PBL focused on student-centered and student-led learning, which largely improved the efficiency of classroom teaching. Students' awareness of independent learning, group cooperative inquiry, and problem-solving skills were also enhanced. In addition, reflecting on the whole process of calligraphy teaching, the following points were summarized.

4.1. Promote problem-based learning

In the PBL activity, the problem is the starting point, and the students come up with solutions based on some specific and clear calligraphy phenomena. In this process, students not only exercise their eyesight in observing calligraphic texts, but also effectively exercise their ability to solve practical calligraphic problems, helping them to solve problems quickly in their future writing practice.

4.2. Develop effective group cooperation

In this lesson, students were encouraged to work in groups to solve problems. Around the specific practical problems, members of the group divide the work and help to solve the problems together. Students' team consciousness is improved, and not only their own subjectivity is brought into play, but also group cooperation. At the same time, the teacher also found during the rounds that the students' learning initiative and enthusiasm for calligraphy increased significantly.

4.3. Calligraphy teaching in a two-way subject relationship

PBL is used in the calligraphy classroom as a change and innovation to the traditional teaching mode of calligraphy. It also changes from the previous teacher-oriented to student-oriented, and gradually changes to a two-way subject relationship between the teacher and the students. On the one hand, the teacher is transformed from a transmitter of book knowledge to a guide and facilitator of student learning. Teachers assist students in solving problems, provide theoretical help and guidance for students, and allow students to learn independently. On the other hand, students' active learning serves as an aid and complement to the teacher's classroom, adding to the ordinary classroom.

4.4. Emphasis on independent learning

In the traditional calligraphy teaching model, students are often passive learners, and the teacher only teaches specific calligraphy rules and writing skills, making the entire learning process a passive learning activity. PBL is to move away from the traditional calligraphy teaching model of the past, emphasizing the active learning of students, and allowing students to actively participate in learning calligraphy teaching activities. In this lesson, although attention was paid to the students' subjectivity and encouraged active learning, due to the difficulty of the course tasks and the lack of class time, there was still a need to expand the time for independent learning and the difficulty of the cooperative learning tasks in a deeper direction. Therefore, in future courses, there is still a need to continuously analyze problems, study them, and summarize feasible solutions. Through independent learning, students can develop their creative and practical skills.

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