

USING THE PUZZLE PIECE TECHNIQUE IN TEACHING THE TOPIC OF WORLD HISTORY IN GRADE 8: CASE STUDY IN SECONDARY SCHOOL IN THAI NGUYEN CITY

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ARTICLE INFO	ABSTRACT
Received: 13/02/2023 Revised: 31/3/2023 Published: 31/3/2023	To meet the needs of educational innovation in the direction of developing students' abilities and qualities, it is extremely necessary to apply modern teaching methods and techniques to teaching history. The puzzle piece technique refers to a technique that contributes to the development of students' general abilities through group activities. This study was conducted to propose some approaches to improve the effectiveness of using the puzzle piece technique in teaching 8th-grade world history in schools. In this work, we used educational scientific research methods, and collection methods to study the theoretical basis and propose some measures to improve the efficiency of using the puzzle piece technique. The research results clearly showed the difference when using the puzzle piece technique in teaching history in school. The proposed measures will improve the effectiveness of history lessons, creating interest in learning and developing necessary skills for learners when applied in practice. The results of the study will be useful references for teachers and students when teaching history in high schools.
KEYWORDS	
Educational innovation	
Active teaching	
History teaching	
Teaching techniques	
Puzzle piece technique	

SỬ DỤNG KỸ THUẬT MẢNH GHÉP TRONG DẠY HỌC CHỦ ĐỀ LỊCH SỬ THẾ GIỚI LỚP 8: NGHIÊN CỨU TRƯỜNG HỢP TRƯỜNG TRUNG HỌC CƠ SỞ ĐỊA BÀN THÀNH PHỐ THÁI NGUYÊN

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THÔNG TIN BÀI BÁO	TÓM TẮT
Ngày nhận bài: 13/02/2023 Ngày hoàn thiện: 31/3/2023 Ngày đăng: 31/3/2023	Đáp ứng nhu cầu đổi mới giáo dục theo hướng phát triển năng lực, phẩm chất của học sinh, việc áp dụng những phương pháp và kỹ thuật dạy học hiện đại vào dạy học lịch sử là việc rất cần thiết. Kỹ thuật mảnh ghép là kỹ thuật góp phần phát triển năng lực tổng hợp của học sinh thông qua hoạt động nhóm. Nghiên cứu này thực hiện nhằm mục đích đề xuất một số biện pháp nâng cao hiệu quả sử dụng kỹ thuật mảnh ghép trong dạy học lịch sử thế giới lớp 8 ở trường phổ thông. Bài viết đã sử dụng phương pháp nghiên cứu khoa học giáo dục, phương pháp thu thập đề nghiên cứu cơ sở lý luận, đề xuất một số biện pháp nâng cao hiệu quả sử dụng kỹ thuật mảnh ghép. Kết quả nghiên cứu đã cho thấy rõ sự khác biệt khi sử dụng kỹ thuật mảnh ghép vào giảng dạy lịch sử ở trường trung học. Các biện pháp đề xuất sẽ góp phần nâng cao hiệu quả bài học lịch sử, tạo hứng thú học tập và góp phần phát triển những kỹ năng cần thiết cho người học khi vận dụng vào thực tiễn. Kết quả của nghiên cứu là tài liệu tham khảo hữu ích cho giáo viên, học sinh trong dạy học lịch sử ở trường phổ thông.
TỪ KHÓA	
Đổi mới giáo dục	
Dạy học tích cực	
Dạy học lịch sử	
Kỹ thuật dạy học	
Kỹ thuật mảnh ghép	

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1. Introduction

During the transition to socialism, accelerating industrialization and modernization is considered a strategic and central task of the Vietnamese Communist Party, State, and people. One of the most important measures to accomplish that task is to strengthen educational development and innovation. In the education law (amended in 2019), Article 30.3 emphasizes: “The general education method promotes the positivity, self-discipline, initiative, and creativity of students by the characteristics of each subject, classes, and characteristics of students; fostering self-study methods, interest in learning, cooperation skills, independent thinking ability; comprehensively developing the qualities and capabilities of learners” [1]. Under the urgent requirements of the new general education system, History can be seen as a subject with many advantages in helping students promote their positivity, self-discipline, initiative, and creativity. Through the puzzle piece technique in teaching history, students will develop thinking, teamwork, and problem-solving abilities. It is considered as the result of self-learn, self-study, and historical thinking processes.

There have been numerous research works related to the use of the puzzle piece technique in active teaching. Dobrynina [2] has mentioned the importance of using puzzle techniques in teaching method innovation. In addition, Tran Ba Hoanh [3] illustrated the importance of using active teaching methods and techniques. Le Thi Thanh Ty [4] delivered the concept of the puzzle piece technique, and some notes when using the puzzle piece technique in teaching. Moreover, Nguyen Lang Binh and Do Huong Tra [5] have mentioned theories and given analytical examples of how to design puzzle pieces in lessons appropriately. In the book *Active Teaching and Learning*, some active teaching methods and techniques under the Vietnam-Belgium project to improve the quality of education in 14 Northern mountainous provinces mention how to proceed and note when using puzzle techniques in the teaching process [6]. In addition, Le Dinh Trung [7] the importance of using active teaching methods and techniques and students will develop thinking, teamwork, and problem-solving abilities. Active teaching techniques are teaching techniques with special significance in promoting the active participation of students in the teaching process, stimulating thinking, creativity and collaboration of students [7]. According to the Vietnamese Dictionary, Hoang Phe delivered extra-curricular is a subject or educational activity outside of the official program, as distinguished from the internal course [8]. In [9], Nguyen Thi Hang, Tuong Duy Hai delivered creative experiential activity is an educational activity in which each student is directly involved in practical activities in school or society under the guidance and organization of the educator, thereby developing their own emotions, morals, and skills, and accumulating personal experience. Creative experience is an important activity in each subject; at the same time, in the educational plan, there are also separate creative experience activities, each of which is a synthesis of many different fields of education, knowledge, and skills [9]. In [10], Nguyen Van Cuong has mentioned the theory of education and the models and teaching methods in order to develop learners' capacity and well implement the teaching objectives in high schools. According to Hayati Adalar [11], mind and intelligence games offer important contributions to teaching social studies. Schools administrators may organise in-service training programs for instructors on mind and intelligence games as implementing them in courses may increase learner satisfaction and contribute to a more positive classroom environment. Jainal [12] delivered the study exploring the use of cooperative learning strategy in students. The study utilizes an action research approach, which involves the process of improving the method of teaching and students' learning through several repetitive cycles. Joy C. Chukwu [13] concluded that the use of puzzle instructional strategy has significant effect on the students' academic performance. In [14], Jamiu O. Amusa found out the influence of using puzzle in the teaching of Physics on Senior Secondary School Students' achievement in selected topics. Recommendations were then made, based on the research outcomes of the study. Emmanuel Achor [15] examined the extent to which school outdoor activities could enhance senior secondary (SS) two students' achievement in ecology.

Various research works with many approaches from all different aspects have mentioned the use of the puzzle technique in teaching method innovation. However, there has not been any specific research to apply the puzzle technique in teaching 8th-grade world history topics. Therefore, this work focused on clarifying and proposing some measures to apply puzzle techniques in teaching 8th-grade world history topics at secondary schools in Thai Nguyen city, contributing to the development of students' capacity and qualities in the new era.

2. Research methods

We used two main methods including the theoretical research and the practical research method. For theoretical research, we conducted educational scientific research methods to build the concept of the puzzle piece technique and proposed some measures to improve the effectiveness of using the puzzle piece technique in teaching history. For practical research, we conducted the methods of analyze and describe the current situation of using puzzle techniques in teaching history to develop students' capacity and qualities. Also, we implemented pedagogical experiments by preparing lesson plans and pedagogical testing of proposed research measures, and testing some proposed measures in practice.

3. Results and discussions

3.1. Concepts of teaching the puzzle piece technique

Teaching techniques be defined as the methods and operation approach of teachers and students in small action situations to implement and control the teaching process.

“Active teaching techniques are teaching techniques with special significance in promoting the active participation of students in the teaching process, stimulating thinking, creativity and collaboration of students” [7, p.115]. Today, researchers focus on developing and using teaching techniques that promote the activeness and creativity of learners such as "brainstorming", "jigsaw puzzles", "tablecloths", "fish tank techniques"...

The puzzle piece technique is one of the active teaching techniques with the characteristic of increasing cooperation between students. The puzzle technique seen as a combination of individuals, groups, and links between groups to solve a complex task, thereby stimulating active participation as well as enhancing the individual's role in the process. In teaching history, the puzzle technique is carried out in two stages. In the first stage, the teacher divides the whole class into groups (intensive groups) and assigns tasks to the research groups. In the second stage, teacher creates a new group based on combining members from the groups of the first stage, called puzzle group. At this stage, students will try to exchange the content they have learnt in the group 1 for group members and try to complete the task given by the teacher. Through group activities in two stages, students can solve complex tasks and fully understand the knowledge; develop presentation skill, communication, and cooperation skills; promote their abilities and capacities; thereby learning efficiency is also enhanced.

3.2. The meaning of using puzzle technique in teaching history in middle schools

The puzzle piece technique is a method of organizing classroom activity that makes students dependent on each other to succeed. It breaks classes into groups that each assemble a piece of an assignment and synthesize their work when finished. The puzzle piece technique asks a group of students to become “experts” on a specific text or body of knowledge and then share that material with another group of students and splits classes into mixed groups to work on small problems that the group collates into a outcome. This strategy offers a way to help students understand and retain information while they develop their collaboration skills. It is a cooperative learning method that brings about both individual accountability and achievement of the team goals. It involves putting the parts of the assignment together to form a whole picture. The assignment is divided into parts and the class is also divided into the same number of groups as that of the

assignment. Each of these group is given a different topic and allowed to learn about it. These groups are shuffled to form new groups consisting of members from each group.

The puzzle technique is an active teaching technique that contributes to the integrated development of students' abilities and qualities. Specifically, using the puzzle technique in teaching History in high schools brings the following meanings:

Firstly, using the jigsaw technique creates lessons with new, rich, and diverse activities, attracting all students to participate in collective activities. The application of this technique also creates a comfortable, pleasant atmosphere, free from stress and fatigue. Students will have the opportunity to promote their talents and express themselves in front of the group, thereby arousing their interest in learning activities.

Secondly, the puzzle technique in teaching History subject not only helps students to remember the content of knowledge, but also helps students promote their positivity and make efforts to participate in activities to complete the learning process. The exchange, discussion, supplement of ideas, and cooperation in group activities create a mutual and cohesive relationship between members.

Thirdly, the puzzle piece technique allows students to express their opinions and historical views, which might be afraid according to the traditional teaching method.

3.3. Some methods of puzzle piece technique in teaching world history topics in 8th grade

3.3.1. Using the puzzle piece technique in internal lessons

The specificity of the puzzle piece technique is the group work of students through different stages. Therefore, to effectively apply this technique, teachers should not only to use to introduce new knowledge, but also practice activities to consolidate knowledge, and apply activities. The warm-up activity plays an important role in the lesson, however, puzzle piece technique is not possible to apply for the warm-up activity due to short duration. Using the puzzle piece technique in the activity of forming new knowledge is the important activity of the lesson. This might help students acquire new knowledge through a system of exercises and tasks, also guidance to form and develop students' capacity. The teacher's task when using the puzzle piece technique in this activity is to divide the group, assign tasks, comment, and conclude the task content for students. The students' role is receiving and performing tasks to develop cooperation and teamwork capabilities and presentation skills.

The knowledge that students acquire by themselves through group work might help them remember longer and understand more deeply under the guidance of the teacher. Students feel excitement when they are the ones who discover knowledge instead of passively receiving the knowledge provided by the teacher. Also, the students can solve the tasks given by the teacher. After applying the puzzle piece technique, students can operate, think, and promote their talents and interests in knowledge content. The History lessons become interesting, fresh, and effective implementation. In particular, forming new knowledge activities often has complex tasks for students, therefore, the application of the puzzle piece technique is appropriate. Applying the puzzle piece technique in forming new knowledge includes the following steps:

Step 1: Assign students tasks to receive appropriate tasks for students according to tasks: 1, 2, 3,...

Step 2: Round 1: Expert group

- Students with the same number of worksheets form an expert group
- Discuss assigned tasks
- Record discussion results to share in step 3

Round 2: Group activities

Each group is assigned a task. Each individual works independently for about a minute, thinking about the question and topic, and recording their ideas. When discussing in groups, make sure that each member of each group can answer all the questions in the assigned task and become an "expert" of the field studied and be able to restate the answer of the group in round 2.

Step 3: Round 1: Expert group

Round 2: Group of puzzle pieces.

Form a new group (1 - 2 people from group 1, 1-2 people from group 2, 1-2 people from group 3...). Round 1 answers and information are fully shared by new team members. When every member of the new group understands all the content in round 1, new tasks will be assigned to the groups to solve. New groups perform tasks, present and share results.

Step 4: Whole class - Share, comment, supplement and conclude.

Round 1: Expert group

- Students with the same number of worksheets form an expert group: group 1, group 2, group 3...
- Discuss assigned tasks
- Record discussion results

Round 2. Group of pieces (original group): This step must be done carefully to avoid causing students to match the wrong group.

- Return to the original group
- Share the results of the discussion in the previous step
- Supplement, unify opinions and solve complex tasks

For example, when teaching the topic "The first bourgeois revolutions" (Chapter 1, lesson 1 of History 8 textbook), teachers can apply the puzzle piece technique for students to learn about revolutions. The teacher can divide the class into 4 groups: groups 1 and 2 will learn about the causes, consequences, and meaning of the British bourgeois revolution. Groups 3 and 4 will explore the explosive causes, results, and significance of the struggle for independence of the British colonies in North America. After all groups complete the task, teacher asks representatives to present their group work products and give the comments, and finally conclude.

In group of puzzle pieces, the teacher will re-divide the group so that each new group contains members from group 1,2,3,4. At this time, the teacher assigned the task to all new groups: "Present the explosive causes, results, and meanings of the world's first bourgeois revolutions". According to two above learning activities, teachers can organize students to perform each content within 8 minutes, hence, the total time for this activity is 16 minutes. After students present their learning products, teacher will ask the groups to comment and complement each other. Finally, the teacher gives an objective assessment and conclusion.

Using the puzzle piece technique in practice to consolidate knowledge: this is an indispensable activity of the teaching process which might help students apply the knowledge they have just learned in forming new knowledge to solve specific tasks. This is also an activity to help teachers assess the level of students' knowledge acquisition for the lesson. In teaching History, teachers use the puzzle piece technique to give generalized tasks, consolidate and help students review the knowledge they have learned. When participating in practice activities, students can promote their abilities, and known-knowledge to solve learning tasks.

For example, when teaching the topic "The French Bourgeois Revolution in the late 18th century" (Chapter 1, Lesson 2 of the 8th History textbook), in consolidating knowledge activity, teachers can design tasks and use puzzle piece technique. The teacher can divide the class into three groups and assigns tasks. Here is the known knowledge, so the working time of the intensive groups only needs a short period (about 2 minutes). After the intensive groups complete the task, the teacher appoints a representative to present their work. At the end, the teacher will form three puzzle groups from the three initial intensive groups and asked them to complete the following table content:

Table 1. *France before the revolution*

Aspect	Condition
Economic	
Political - Social	
Thought	

Puzzle groups work quickly in 3 minutes and comment, complement each other and conclude.

The puzzle piece technique can be used in manipulation activities: this is a practical activity, allowing students to use their knowledge and skills to solve real-life problems and tasks. Application activities can be conducted outside of the classroom, so teachers can use puzzle techniques in the form of a combination of classroom work and homework.

For example, when teaching the topic "The French Bourgeois Revolution in the late 18th century" (Chapter 1, Lesson 2 of History 8 textbook), in the application activities, teachers can use the puzzle piece technique as follows:

Step 1, the teacher divides the class into intensive groups with the following tasks: Group 1 draws a time map of the main events of the period of the outbreak of the French bourgeois revolution (July 14, 1789 – August 10, 1792); Group 2 draws a time chart of the main events of the French bourgeois revolution from September 21, 1792 to June 2, 1793; Group 3 draws a time chart of the main events in the period from June 2, 1793 to July 27, 1794.

Step 2, intensive groups perform the task in class for 3 minutes.

Step 3, the teacher assigns a new task: "Draw a time map of the main events of the French bourgeois revolution at the end of the century XVIII". The products can be shared and presented in the next lesson. Through this activity, students can develop the ability to generalize important events of history, and form skills in building and using time diagrams to better serve the study of History.

Step 4: Whole class - Share, comment, supplement and conclude. In round 1 - expert group, students with the same number of worksheets form an expert group: group 1, group 2, group 3... discuss assigned tasks, record discussion results. In round 2 - group of pieces (original group), students share the results of the discussion in the previous step, supplement, unify opinions and solve complex tasks. Teachers share, comment and supplement and conclude.

3.3.2. Using the puzzle piece technique in extracurricular and creative experiential activity

According to the Vietnamese Dictionary, extra-curricular is a subject or educational activity outside of the official program, as distinguished from the internal course. Extra-curricular hours are actively planned by teachers, from choosing content and topics to suit the internal lessons, aspirations, and forte of students. Through extracurricular activities, students have been fostered deeply the knowledge they have learned in internal lessons, creating interest in learning history. Using the puzzle piece technique in extracurricular activities contributes to the education of ideas, feelings, and ethics for students, giving them a positive attitude and initiative in performing common tasks, freedom in thinking, and expressing themselves. To effectively apply the puzzle piece technique in extracurricular activities, teachers must clearly understand, be deeply aware of the relationship between internal and external lessons, and prepare the plan to build and organize extracurricular activities for each class or grade, or the whole school. Teachers should accurately determine the goals of extracurricular activities to give appropriate tasks.

For example, the teacher organizes an extracurricular lesson in the form of exchange and discussion with the theme "For world peace" to celebrate the International Day of Peace on September 21. The content of the extracurricular lessons will apply the knowledge from the internal class with the topics "World War I (1914-1918)" and "World War II (1939-1945)". Teachers can use the puzzle piece technique in extracurricular activities as follows:

Step 1: Before extracurricular activities, the teacher divides the class into groups and assigns tasks to the groups: Group 1 learns about the causes of the outbreak of the first world war; Group 2 learns about the impact of the first world war on humanity; Group 3 learn about the causes of the outbreak of the second world war.

Step 2: At the exchange and discussion, all 4 groups will exchange the content they have learned with each other, the teacher try commenting, objectively evaluating, and concluding the important content.

Step 3: After the groups report, the teacher establishes 4 puzzle groups based on the original 4 intensive groups and assigns new tasks to the groups: "From the causes and effects of world

wars, if you are the head of a country that has an important influence on international relations, what will you do to contribute to repelling wars and conflicts in the world?" In the activity, students in groups will share the content they have learned in the in-depth group, discuss and propose solutions given by the teacher in the puzzle group.

Step 4: After finishing the discussion time, teacher asks all groups to present their views, comments and complement each other. Teachers also need to pay attention to comment on students' presentations and argumentative language combined with timely encouragement and praise to encourage students' creative thinking.

"Creative experiential activity is an educational activity in which each student is directly involved in practical activities in school or society under the guidance and organization of the educator, thereby developing their own emotions, morals, and skills, and accumulating personal experience. Creative experience is an important activity in each subject; At the same time, in the educational plan, there are also separate creative experience activities, each of which is a synthesis of many different fields of education, knowledge, and skills" [9]. Using the puzzle piece technique in creative experience activities contributes to improving the teamwork, cooperation of students, and deepening knowledge effectively. For example, the teacher organizes a creative experience in the classroom in the form of a rhetoric contest with the theme "Asian countries in the late 19th century and early 20th century before the invasion of Western colonial countries".

Step 1: Thematic speaking contest consists of two parts. In the first part, teachers divide the whole class into 4 groups, each student in each group will be considered as an expert. Teachers let students draw lots of tasks (notified from the previous lesson) to ensure fairness, including 4 tasks. For example, "Why was India invaded by British colonists?" or "Why China torn apart by Western countries?"

Step 2: After picking the task, groups will discuss it again before speaking. These contents have been announced in advance, so the groups have carefully prepared all 4 contents, and only needs a short period to divide the group's work. Each student is an expert in their group's field, so the whole group has to take turns speaking about their group's topic.

Step 3: After groups finish speaking, teacher will score and announce the winning group in the first game. At the end of the first game, teachers give the intensive groups a draw to create a fair group of puzzle pieces.

Step 4: Students in the puzzle group will exchange the content they have just learned in part 1 with members of their group (5 minutes). After discussion, teachers introduce a new rhetorical topic for the in-depth groups: "Why didn't Japan and Thailand become regions of the West while other countries in Asia were invaded by Western colonists in turn although they are geographically located in Asia, in the same feudal period?"

Step 5: The teacher comments, scores and announces the winning group in the second game. Students who have the highest total score of the group in the two parts will be the first prize winners.

3.4. Discussions and pedagogical experience

To ensure the principle of practice, we have carried out a pedagogical experiment on the puzzle piece technique in teaching at Hoang Van Thu Secondary School, Thai Nguyen city under the topic "The development of technology, science, literature, and art in the XVIII-XIX centuries" (8th grade history). To conduct the experiment, we proceeded to build two different lesson plans for the same topic. The first lesson plan was conducted in class 8A1 (including 45 students), which was taught by traditional methods, without using puzzle piece techniques. The second lesson plan was implemented in class 8A2 (including 45 students) using the puzzle piece technique with appropriate content. Figure 1 shows the results of the aggregated and quality test of the lesson using two different lesson plans. It can be seen that the number of students in class 8A2 after using the puzzle piece technique getting points from 9 to 10 was 7 students (accounting for 15.6%), from 7 to 8 points was 23 students (51.1%), from 5 to 6 points was 19 students (33.3%), no students scored below 5.

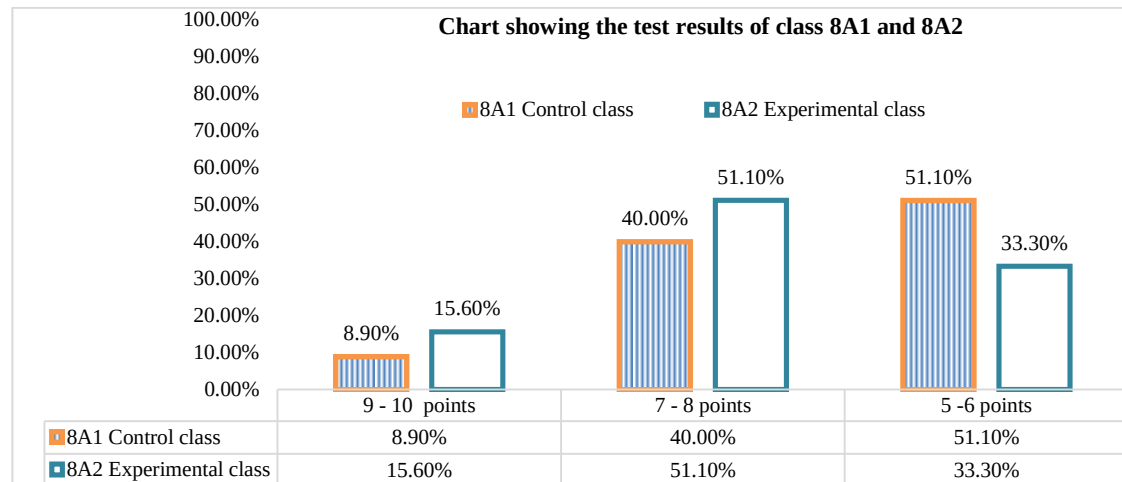


Figure 1. Chart showing the test results

Analyzing the results, we can observe that the puzzle piece technique using in teaching world history in grade 8 in secondary schools has a relatively good effect. Different from regular class hours, thanks to the use of the puzzle piece technique, each student's role in group work are enhanced, and students can promote their talents and strengths, thereby acquiring knowledge easier, and more interested in history class.

4. Conclusion

This work has focused on clarifying some important issues such as pointing out the concept of teaching techniques, active teaching techniques, and puzzle piece techniques; proposing some measures to improve the efficiency of using puzzle piece techniques in teaching history. Through pedagogical experimentation at a middle school, we have found that most of investigated students were active, proactive, excited, and responsible to participate in activities using the puzzle technique. Through those activities, many students have become more confident to express themselves in front of a crowd, and illustrated their personal views. The students can promote their teamwork, problem-solving, and presentation skills.

The puzzle piece technique creates an important contribution to the development of students' competencies and qualities. However, the frequent use of the puzzle piece technique will also lead to fatigue and boredom for students when they have to solve too many tasks. Therefore, to maximize the effectiveness of the lesson and the students' positivity, the teacher needs to skillfully intertwine the puzzle piece technique with other teaching methods to ensure that students can fully occupy the knowledge and perfecting the required capacity and qualities, contributing to improving the quality of teaching and learning History in high schools.

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