DEMONSTRATION AND DISCUSSION OF A PLANE GEOMETRY LESSON: TEACHING "DETERMINATION AND PROPERTIES OF PARALLEL LINES" AS A WHOLE

Secondary Mathematics Teaching Branch of Chinese Society of Education

Short description of the Thematic Afternoon: organizers, aims and underlying ideas

1. Name of the Activity

Demonstration and discussion of a plane geometry lesson: Teaching "Determination and Properties of Parallel Lines" as a whole

2. Organizer Institution

Secondary Mathematics Teaching Branch of Chinese Society of Education

3. Introduction of Organizer Institution

Secondary Mathematics Teaching Branch of Chinese Society of Education was established in 1978. It has a total of 43 group members, including all the secondary school mathematics teaching and research departments of provincial teaching and research institutions, as well as the relevant departments of the six normal universities directly under the Ministry of Education engaged in secondary school mathematics education. It is the highest-level academic group of secondary school mathematics teachers in China. Its main scope is: (1) to popularize the knowledge, theory and methods of mathematics education, provide scientific research consulting services and guidance, and promote the majority of secondary school mathematics (2) to organize and conduct special research in accordance with the needs of reform and development of secondary school mathematics education in the areas of curriculum and teaching materials, teaching, learning, professional development of teachers, information technology, measurement and evaluation; (3) to organize academic exchanges among secondary school mathematics teachers nationwide, and to cultivate and promote outstanding achievements in research and reform practices in secondary school mathematics education. It runs a journal, "Chinese Mathematics Education".

4. Aims

(1) To enable international mathematics educators to understand Chinese mathematics classrooms and to promote international academic communication in mathematics classroom teaching and professional learning of in-service teachers.

(2) To demonstrate the important role played by the Chinese teaching research system and teaching and research activities in ensuring the quality of classroom teaching and promoting teachers' professional development, and to enable international mathematics educators to understand the mathematics teaching and research activities in China.

(3) To explore the reform of plane geometry teaching.

5. Underlying Ideas

Plane geometry is a controversial element in the secondary school mathematics curriculum. Chinese mathematicians and mathematics teachers generally agree that there is no substitute for a plane geometry curriculum in developing students' spatial concepts and improving their reasoning skills. This lesson seeks to demonstrate a new exploration of a plane geometry curriculum reform. Using basic and simple plane figures as a carrier, the overall teaching design of the unit forms a series of mathematical activities to help students better and more easily understand geometric knowledge and ways to study geometric problems, so that students can develop inductive and abstract skills through geometric concept learning, develop the ability to discover the properties of figures through geometric property exploration, develop logical thinking and the ability to reason through geometric proposition reasoning activities (inferential argumentation), etc. The students will develop logical thinking and reasoning skills through reasoning activities.

Planned structure:

Planned timeline	Planned activity	Working format /Responsible person
14:00-14:10	General introduction of the activity	Micro Report / Jianyue Zhang
14:10-15:00	Video lesson demonstration and self-explanation: “Determination and Properties of Parallel Lines”	Demonstration of the lesson / Jianhao Chen
15:00-15:10	Halftime	
15:10-15:40	How an excellent lesson is made? Also on the characteristics of the four-level teaching research system in China	Report / Da Liu, Caifeng Xiao, Shuangshuang Chen, Xiaodong Mu
15:40-16:10	Chinese Geometry Teaching Characteristics: Pursuing the integration of intuition and logic with holistic teaching	Comments on the lesson / Zengsheng Wu, Xuan Zheng, Yudong Yang
16:10-16:25	Q&A	
16:25-16:30	Summary	Jianyue Zhang