

## System Seminar Teaching Research

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**Abstract.** In view of the characteristics of system seminar teaching, the system seminar teaching process was proposed, the system seminar teaching method was analyzed, the key links in the implementation of system seminar teaching were proposed, which can effectively support the implementation process of system seminar teaching organization, and provide the methodological basis for system seminar teaching.

### 1. Introduction

Seminar teaching originates from classroom. Seminar-based teaching is a teaching form established by both teachers and students. It is based on students' acceptance ability and knowledge, guided by teachers, centering on "problems", and launching "research" and "discussion". Its essential teaching purpose is to expand and deepen knowledge. It requires sufficient students' pre-class preparation and teachers' pre-class organization, rather than activities that can be effectively carried out by classroom random problems<sup>[1]</sup>. Therefore, it is necessary to carry out system seminar teaching research.

### 2. System seminar teaching process

Make plans. Before making a plan, teachers should have an overall understanding of the contents of the textbooks and the students' overall knowledge situation. The preparatory work of seminar teaching mainly includes the content, method, time, place, grouping and requirements of seminar and so on. The contents of the seminar teaching plan should include the topics, methods and time allocation of the seminar. The content of the course discussion should be selected, including those chapters which are beneficial to students' self-study, and related to engineering practice, and which are of interest to students. Teachers should make arrangements at least one week before the beginning of the course discussion. In order to ensure the orderly development of system seminar teaching activities, a scientific and complete seminar teaching plan must be formulated. In order to enhance the effectiveness of the course discussion, the whole class can be divided into several groups.

Demonstration explanation. The effect of demonstration instruction directly affects the organization and development of follow-up teaching activities, so teachers must prepare carefully. Teachers should give demonstration explanations. Teacher demonstration group research and discussion, especially the collection and collation of data, and the writing of research reports<sup>[2]</sup>. Teachers should introduce the nature, basic content and learning requirements of the curriculum. Secondly, teachers announce the teaching plan, assign study seminar groups and arrange the content of the seminar according to the requirements.

Research preparation. During the period before the formal start of the course discussion, students collect, collate, analyze and write research reports through various ways according to the content and teaching methods assigned by teachers. Teachers should pay attention to guiding students to learn and understand the writing format, structure and layout of papers, research ideas and other content, so as to cultivate the ability to grasp the academic frontier and track academic hot spots. Students enter the state of autonomous learning.

Course discussion can be divided into two forms, group internal discussion and whole class discussion. The discussion within the group is carried out, and the leaders are responsible for the process. At the end of the group discussion, student is recommended to summarize the results of the study, summarize the group's statements, and communicate with the whole class on behalf of the group. The students in each group expressed their opinions according to their own research status, and then the other students evaluated the contents of their speeches. Teachers should encourage students to participate actively in classroom discussions. Afterwards, under the guidance of the teacher, the whole class is discussed. The role of teachers in classroom discussion is very important. Teachers should also pay attention to guiding and controlling the direction of students' classroom discussion. Once they deviate from the content of the discussion, they should correct it in time.

### **3. System seminar teaching method**

Full class discussion. Generally, the success of the discussion depends on whether the problems set by the teachers, and whether the students are well prepared, and whether the teachers and students communicate instantly, and how to discuss in conversation<sup>[3]</sup>. Teachers ask questions according to students' actual needs and students' separate preparation. In the discussion, the teacher is the leader and holds the direction of discussion. This kind of discussion mainly solves the problems that need to reach consensus and unify understanding in theory and concept.

Group discussion. It is to divide the students who hold roughly relative opinions on a certain issue into two groups, and organize the students to fully express their opinions to prove their point of view, and to expound the reasons for refuting each other's views. After discussion, each group makes a special report and the teacher summarizes it. This is the most commonly used form of discussion. Each group establishes a team leader who is responsible for convening, recording and collecting feedback. It is therefore necessary to establish rules for group discussions. The central commentator is generally the student with a high level of understanding and expression, who can lead the debate in a correct, in-depth, creative and summative direction. At the end of the debate, either a clear conclusion or an open approach will be made, but no conclusion will be reached, which will be left for further consideration. After the discussion, each group is required to give an overview of the main points of the discussion to the whole class. The discussion can be divided into two stages. The first stage is to make arbitrary turns of speeches, and the second stage is to make a central comment by the teacher's name. The teacher summarizes and comments on each group and gives some conclusive answers. The general problem is divided into sub-problems. Each group is responsible for one sub-problem. The teacher patrols in groups, listens to speeches and guides thinking.

### **4. Key links in the implementation of system seminar teaching**

#### **4.1 Teachers' selection of topics**

The choice of topics can be made by teachers themselves when preparing for teaching, and by teachers guiding students to choose, and by both sides in the process of teaching. No matter which form of choice is adopted, three points should be achieved. Scientific and reasonable selection of a course and a course's research topic is the focus and difficulty of teaching. That is to say, the selected topics should have the value of in-depth research and discussion, representing a certain direction and frontier<sup>[4]</sup>. First, it should be representative, that is to select some important and difficult issues for discussion, so as to be able to shoot at one point and draw inferences from one another. Second, it should have overall victory, multiple topics of a course should be coordinated, coherent, and can form a complete system, which can play a supporting role in the course.

#### **4.2 Teachers' Leadership**

In the implementation of seminar-based teaching, teachers carefully select topics for discussion, and good topics for discussion are the starting point for students to actively discuss. Accurately grasping

the opportunity of discussion is the premise of conducting seminar teaching, and students must have a full grasp of the basic content of discussion. Therefore, before conducting seminar-based teaching, teachers must effectively explain the basic content involved in the seminar. Seminar teaching method is to give full play to students' initiative and enthusiasm while adhering to the leading role of teachers, and focusing on the teaching of learning methods and the cultivation of scientific research ability, aiming at improving students' comprehensive quality. The research topic must stimulate students' interest in learning, and be closely related to real life problems, or have some inspiration for real life problems. In the process of discussion, teachers can support and encourage some correct and original views, give correct guidance to some views deviating from the theme, mediate some meaningless debates, limit students who speak too long and too frequently, and give inspiration to those who do not actively speak. Classroom is a dynamic generation process, students will have new ideas and new problems at any time. Without the mastery of basic knowledge and the guidance of learning methods, we can't achieve the basic teaching objectives, the topics without interest can't arouse controversial topics, and can't stimulate the enthusiasm of students to discuss. When conditions permit, they can also send relevant information to students. The process of students' familiarity with relevant information is the process of students' self-enrichment, and also the process of teachers' understanding of students to determine the timing of discussion. If these problems can't be timely and effective guidance and solution, which often will hinder the smooth progress of classroom discussion. On the basis of students' mastery of the basic content, teachers should guide students to search for relevant indexes, read relevant materials, or guide students to obtain relevant information on the Internet. Teachers must accurately grasp every link in the process of classroom discussion, so that the whole discussion process can be carried out in accordance with the pre-set procedures of teachers. If students are not fully prepared and have not grasped the basic information accurately, it is difficult to carry out the research in a hurry<sup>[5]</sup>. In order to achieve the established teaching purpose, teachers must effectively control the discussion in the seminar class and guide students to follow their own design ideas step by step, towards the intended goal.

### **4.3 Student Thinking Pass**

Seminar-based teaching not only requires teachers to impart knowledge, but also to guide students to master learning methods, change teaching people to fish to teaching people to fish, and guide students to further practice in accordance with the steps designed by teachers. Every elaborate thought is a slight improvement in ability, and the qualitative leap is taking place in these thoughts imperceptibly. In order to do a good job in seminar teaching, both sides of teaching must make careful preparations around the established seminar topics. Guidance should be directional, procedural and correct. Direction is to make the discussion centered around the event, not to say a thousand words, leaving the topic for thousands of miles, so that the discussion organization needs to be well organized. In the preparation process, the contents can be flexible and the ways can be varied. The students can analyze, explain and discuss.

### **4.4 Teaching Seminar**

We should be good at guiding, we can grasp the essence of the discussion, real-time guide everyone around the central topic of discussion, to prevent the drilling of bull's horn or off-topic. Organizations can be open-ended and full discussion, but also in the course of lectures to act on an opportune occasion. That is to say, teachers generally do not put forward their own views or reference answers first, to avoid one word determines the universe, which restricts students' discussion ideas. The key to ensure the effect of teaching seminar is teachers, especially the discussion on the occasion. Classroom joint discussion is the focus of seminar teaching and the only sign to measure the success of teaching. On the basis of the full preparation of the joint efforts of both sides, teachers should organize the teaching implementation carefully in accordance with the framework and procedures designed beforehand, in a clear and clear way of thinking. We should avoid setting the tone. In the organization, teachers should be good at motivation, they can expand students' thinking through anticipated words, stimulate everyone's desire to speak, and desire to participate in discussion,

especially in the cold field, when they will use positive and negative means to ensure the discussion. Sometimes, in order to enhance the atmosphere of discussion, teachers can also give a slight hint or flexibly handle the ideas opposite to the original case, so that students can fully understand the principle, grasp the flexibility and seek correctness. Students should actively speak in the seminar, fully clarify their views, and seek a more accurate understanding and grasp of some important issues through intense debate. Teachers should pay more attention to guiding and encouraging students to innovative thinking, dare to break through the thinking pattern, dare to imagine, innovate and express independent opinions.

#### **4.5 Summary of the topic**

It should also put forward its own ideas or concentrative opinions on the problems that need further study or the contents that have not been agreed upon, so as to provide students with reference in future research. The summary of the topic is a summary of the situation of this seminar-based teaching. Teachers can summarize their opinions, clarify their own opinions, or just make inferences in principle, and leave some space for students to think, so as to do further research. Whatever disposal method is adopted, it should be concise in language, thorough in analysis, rigorous in logic, deliberate in narration, clear in viewpoint and full of novelty. The content mainly includes the induction of the seminar topics, making clear conclusions, and analyzing the merits and shortcomings of the seminar, and praise the students who have better seminars when needed.

#### **5. Summary**

Seminar-based teaching method is one of the system teaching methods. By discussing the key links of system seminar teaching process, system seminar teaching method and system seminar teaching implementation, it can provide methodological basis for organizing and implementing the system seminar teaching process, choosing the system seminar teaching method, and implementing the system seminar teaching link, so as to improve the effect of system seminar teaching.

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