

The Applying cooperative teaching method intraining the course on fire water supply at the University of fire prevention and fighting

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Abstract: The University of Fire Prevention and Fighting belongs to the system of People's Police Schools, is the only training and fostering facility for cadres and scientific research on fire prevention and fighting in Vietnam. In the context of strong socio-economic changes, the demand for human resources in fire prevention and fighting is increasing, while traditional teaching methods are increasingly revealing many shortcomings. Therefore, one of the challenges in teaching subjects at the University of Fire Prevention and Fighting in general and the subject of fire water supply in particular is the need to change teaching methods, to train professional, disciplined and elite firefighters.

Keywords: Collaborative teaching, innovative teaching methods, fire prevention and fighting.

1. Introduction

In group cooperative learning, students can regularly compare their learning results with their friends, thereby avoiding negligence, distraction, eliminating laziness, jealousy, and always being self-conscious. Cooperative learning groups are established before each lesson, before an important issue that needs to be researched and will support each other. This creates harmony in the coordination of work of the whole class. Thus, it can be said that the ideas about organizing cooperative teaching of previous centuries have been applied more and more strongly in the teaching practices of most countries in the world and this teaching method has gradually affirmed and increasingly demonstrated its superiority in the system of active teaching methods. Entering the early years of the 21st century, cooperative teaching is increasingly affirming its position and role in improving the quality of teaching and learning. Therefore, cooperative learning is a teaching method that is approved by many educators and is being used in many places around the world.

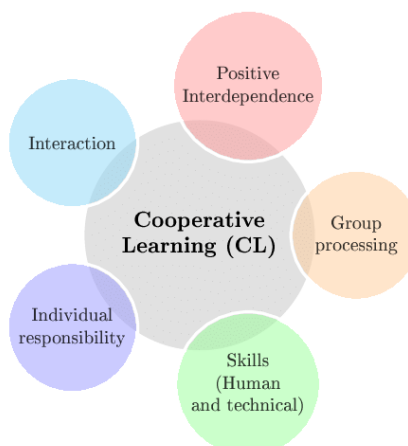


Figure 1. Essential Elements of Cooperative Learning.

In recent years, with the trend of innovating teaching methods towards activating learners' activities, along with the trend of integrating into the world in new conditions, most Vietnamese educators have realized that it is necessary to organize teaching for students in cooperative learning. In terms of theory, recently there have been many research works as well as many articles interested in cooperative teaching. From passive teaching to active teaching, lecturers propose independent or group activities for students to master the learning content, proactively achieve the knowledge, skills and attitude goals according to the program's requirements. Teaching from a perspective (cooperative teaching) includes both the teaching method of the lecturer and the learning method of the students. For lecturers, we often say "cooperative teaching" and for students, it is "cooperative learning".



Figure 2. Organizing cooperative learning activities.

2. Some cooperative teaching organization models applied in teaching at the University of Fire Prevention and Fighting

2.1. Round table

Groups of three or more members “brainstorm” on an assigned electrical engineering topic, with each member taking turns writing down a new idea on a piece of paper. The process continues until members run out of ideas. When the time is up, the group with the most independent ideas presents to the class.



Figure 3. Active cooperation improves learning efficiency.

2.2. Jigsaw

In 1970 this form of cooperative learning was developed by Elliot Aronson and colleagues at the University of Texas at California. Under this structure, the lesson is divided into several independent topics and assigned to members of the cooperative group to complete within a certain period of time.



Figure 4. Each individual will be an important piece.

Members with similar topics will gather to discuss and become experts on that content. Then, each member of the expert group returns to the collaborative group, teaching the whole group their content. Members take an individual test, the content includes all parts of the lesson.

2.3. STAD

Developed by Robert Slavin at Hopkins University, this is perhaps the simplest model that demonstrates the cooperative learning approach. The instructor will divide students into cooperative groups and assign tasks to the groups. Initially, individuals work independently for a certain period of time. Then, the group meets to help each other understand the assigned content. The instructor conducts the first test. The groups continue to meet and discuss the content that is not yet firmly grasped from the first test. The instructor conducts the second test (at a higher level of application). The instructor evaluates the results of individuals and groups based on the efforts, efforts, and cooperation of each individual. Poor students can bring points to the whole group based on their own efforts, which helps students become more confident and increases solidarity in the group.

2.4. Team Game Tournament

The teacher divides the students into groups based on their learning ability and assigns them numbers. The members of the groups with the same number have similar learning ability. The groups discuss and help each other understand the lesson content. The teacher conducts two tests. The testing process becomes a competition between the members of the same numbered groups. The evaluation results are based on the difference between the two tests and are used to calculate the efforts of the individual and the group. Pyramid The teacher poses a problem for the students to work independently for a certain period of time. Pairs 2 students into a pair so that they can share their opinions with each other. Next, pairs 2 students into groups of 4, then 8. Finally, there will be a summary table of opinions or the best solution to solve the problem.



Figure 5. Grouping in cooperative learning.

First of all, for students. In order to have the conditions to grasp the content of each lesson, save time in class, students need to be really active and proactive in self-studying, reading documents and preparing lessons at home under the suggestions of the lecturer with a system of questions related to the lesson. According to the training regulations under the credit system, for every 1 class period, students need to have at least 2 periods of self-study and self-preparation at home. If the preparation is not thorough, students will fall into a passive state, not proactively grasping knowledge, and unable to participate in group and class discussions. Thus, to enhance the interaction between teachers and students, between students and students, teachers and students working together, students need to come to class to participate in the cooperation process. Otherwise, even if students have all the learning materials in hand, they cannot know the teacher's design, do not know

the student's construction tasks, cannot receive information from their classmates and do not have the conditions to present their knowledge in front of a large audience

to receive evaluation and supplementation from the teacher and classmates, so they do not have enough knowledge of the lesson and subject. And so, the learning results will be low.

3. Target of research

Cooperative learning is the use of small groups of students in teaching, so that group members work and learn together to achieve lesson content and social skills. Students work together towards a common goal. Thus, educators have similarities in their conception of cooperative learning. In cooperative learning, students work together in small groups. The cooperative perspective requires students to participate and contribute directly to the learning process, and at the same time requires students to work together to achieve common learning outcomes. In the process of cooperation, each individual finds benefits for themselves and for other members of the class, which means promoting positive mutual influence in the group of students.

4. Literature analysis

For lecturers. In order for students to be able to perform their role well, lecturers need to provide students with sufficient reference materials to help them study and research on their own. The Electrical Engineering textbook of the Science and Technology Publishing House is currently used, and there are many supplementary materials from domestic and foreign researchers, students can easily find them in national libraries, local libraries and even in school libraries. This is a valuable and extremely basic source of material, a solid foundation for building a teaching process for the fire water supply course. It is also a favorable "environment" for students to approach modern and practical electrical technologies. If the lecturer plays the role of an intermediary between the students and that "environment", the interaction between the learner and the research object will be established and enhanced, the role of students actively seeking and grasping knowledge will be promoted and will increase interest in learning. In addition, the lecturer must have a deep understanding of the teaching content, master the knowledge, know how to process it according to pedagogical intentions and know how to convey it to the students. The lecturer must constantly update new information to apply to the lecture, increase the practicality of water supply in fire prevention and fighting with specific examples that have appeared in practice.

5. Research methods

Learners learn by doing, not just by listening to the lecturer. Cooperative teaching must ensure the following basic elements: Positive interdependence between members; Direct interaction of individuals affecting success. Sense of responsibility of individuals and groups to achieve group goals; Use of communication skills and social skills; Group adjustment. Cooperative teaching provides opportunities for learners to assert and develop themselves in a collective environment.

Learners can easily complete learning goals with the help of other members - something that learners find difficult to achieve when doing it alone.

6. Research results

The application of cooperative learning can create outstanding advantages. Students will actively study and research the content of the electrical engineering course with less dependence on the lecturer, instead they can work together to share knowledge. All the benefits of cooperative learning that take place in other courses can be obtained in the lessons of the electrical engineering course like this (increased academic performance, critical thinking skills, problem solving skills, cooperation skills, group handling skills, etc.).

7. Conclusions

Cooperative learning will help to significantly narrow the gap in level between students, helping students focus on completing a small amount of work that is suitable for their ability (instead of having to learn all the operations). In addition, students also receive support (tutoring) from other members to help them quickly grasp and practice effective practical skills. This form of support is suitable for the characteristics of electrical engineering which requires meticulousness, precise operations and takes place according to the correct process. At the same time, it will arouse the curiosity, desire to learn of each student as well as the desire to apply the knowledge learned into practice.

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