

ACTIVE TEACHING METHODS APPLIED IN TRAINING SYSTEM TOWARDS CDIO EDUCATIONAL FRAMEWORK

Nguyen Thi Uyen, Tran Xuan Sang

Vinh University

Received on 05/11/2017, accepted for publication on 20/4/2018

Abstract: Innovation in teaching methods to raise learners' positiveness, activeness and creativeness is one of the important issues in education. In traditional teaching methods, the authority model is teacher-centered and frequently entails one-way presentations. Students are passive learners in traditional teaching model. Shifting from passive teaching methods to active teaching approach, lecturers and students are required to think and solve problems actively. Students will find information through the lectures, while teachers will plan, organize and coordinate activities in the classroom. In this paper, we present and analyze some active teaching methods applied in training system towards CDIO educational framework.

1. Introduction

Active learning is one of the key principles in the CDIO approach (standard 8: Active Learning). Active teaching methods are modern pedagogical methods adopted by many schools. With active teaching methods, students have opportunities to learn in a very active and creative way. Using active teaching methods, students will feel more active and engaging in class time. Teachers also find teaching hours to be lively and effective in providing students with knowledge and career skills.

Teaching and learning is the process of exchanging knowledge between teachers and students. It is not just one-way transmitting knowledge from teachers to students. *"To master our future, we need to be confident and believe in our values. That's what schools should teach people"* (Charles Handy). In order to help learners feel confidence in their own values, they need to approach knowledge in the most active and creative way. Only when learners actively explore

knowledge, self-learning, self-practice and self-enrichment, general knowledge of learners becomes their own knowledge.

When applying active teaching techniques, we encountered some difficulties such as: there are many students in a class; the class room is not suitable for "group sitting" activities; students are not familiar with active learning. However, those difficulties can be overcome by technical solutions, and the survey results show that most students find more attractive to active learning methods than traditional learning methods.

The paper organized as follows. Section 1 introduces an overview of positive teaching method; section 2 presents and analyzes in detail some common positive teaching techniques; section 3 outlines some of the principles of positive teaching methods; section 4 proposes some skills needed for teachers to implement positive teaching methods in teaching activities. Finally, section 5 summarizes the work of this paper.

2. Popular positive teaching methods

2.1. Lightning method

This method is applied by gathering information quickly from students before learning new content. This information is the actual issues related to the content learning in the class [2]. The lightning

method is implemented in following steps:

- Arrange, organize classes in the appropriate form.
- The teacher raises some questions
- Students reply.
- Lecturer sum up the problem quickly and direct to the lesson.

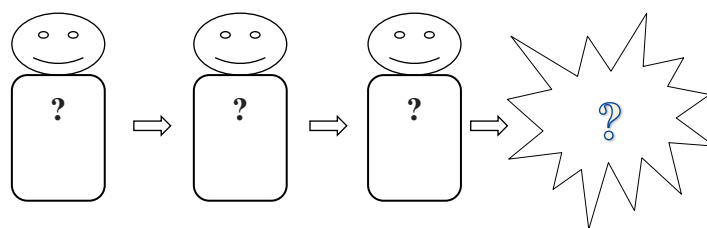


Fig 1: Lightning method

The advantages of this method are short implementation time and quick information gathering. However, teachers should not apply this method many times in a class period because it will make students bored. Teacher should use this method at the beginning of the session to review the previous lesson, or to gather information about the student's understanding about upcoming lesson.

2.2. Board making comments method

This method is applied for answering multiple choice questions, which aims to gather as many ideas and information from students as possible to guide them into the lesson. This is the simple method with the tools of table and chalk. Teacher should use this method to elicit lecture [1]. This method is implemented in following steps:

- Teacher mentions and guides the problem.
- Students spend time thinking.
- Teacher invites some students to write their ideas up on the board.

- Teacher and students discuss the best and most important ideas

This method is suitable for the class which has a large number of students. Because the lecturer can give many students a chance to comment, and even engage students to discuss the idea. However, teacher should also be aware of the direction of the comments related to the content to be taught, otherwise there will be a lot of comments not related to the lesson, and this will lead to lack of time for lesson.

2.3. Question-Answer method

This is a popular pedagogy method that promotes the activities of student [2]. This method requires teacher to create multi-dimensional debate in the classroom to increase the ability to explore, learn more about a topic. This method is implemented in following steps:

- Identify the topic to be discussed.
- Ask questions for the topic.
- Think the answer.
- Make multidimensional debate.
- Conclude the topic.

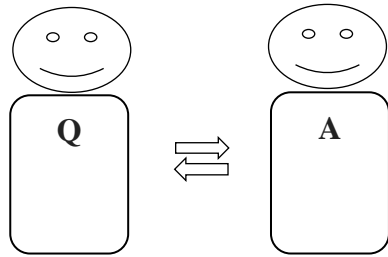


Fig 2: *Question-Answer method*

The advantage of this approach is that students are more likely to exchange information and think about a topic and argue more in order to gain a deeper understanding of the topic. However, this method requires the teacher to be flexible, in order to control the Q & A activity between students [2].

2.4. Casting Method

This method attracts students to the lecture, creates a dynamic atmosphere, and reduces the distance between lecturers and students. This method is suitable for students to learn the behaviors, the communication around the practical issues of lecture [2]. This method is implemented in following steps:

- Lecturer composes the script according to the subject.
- Choose an actor and assign tasks to students.
- Organize the role play process.
- Exchange, comment on the play.
- Lecturer concludes the topic.

This method gives the class a fun and exciting atmosphere. It helps students simulate the situations of the subject which happen in reality. However, this method is time-consuming. Thus, this method is suitable for simulating social problems such as: law subject, traffic safety...

2.5. Visualization method

This method is widely used and integrated with other methods.

Visualization means the use of scripts, pictures, drawings, diagrams, tables... to convey or illustrate topic in the lecture [1]. This method is implemented in following steps:

- Lecturer must prepare visual objects.
- Use visualization objects appropriate to the content.
- Flexible combination of language and manipulation when giving illustrations.
- Motivate students to participate, discuss the presented objects.

This method is easy to combine with other methods, shortens the presentation time, creates comfort in the classroom, and stimulates the imagination of students. However, the preparation of visual object is complex and time-consuming.

2.6. Group work method

Using this method, the teacher organizes students into groups of 5-10 students. Each team member will be responsible for exchanging; sharing and helping other members in the group fulfill the assigned tasks. This method will stimulate students' self-study and creativity effectively [2], [3].



Fig 3: *Group work method*

This method is implemented in following steps:

- Introduce the content to work for each group.
- Assign tasks to groups.
- Students discuss in the group.
- Present the results of the group.

- Lecturers review and supplement knowledge.

The advantages of this method are to create solidarity and stimulate self-learning, self-communication and problem solving. However, the evaluation of results will not be objective. Therefore, when implementing this method, the lecturer must give objective and fair assessment for each student in group.

For example: When a group of 10 people is evaluated, the lecturer can call certain student to present the result of group work, if this student is doing well, the group completes the task. If this student does not do well, the group will get penalty. The group will be deducted equally to stimulate group members in a “spill-over” manner, the more knowledgeable member will have to explain to unknown knowledgeable member to ensure that all members can understand topic.

2.7. Project Methodology

This method is a form of teaching, in which the learner performs a complex task of learning, with the combination of theory and practice, to create the product. This method is implemented in following steps:

- Plan to address the topic.
- Implement the project.
- Summary of results.

The lecturer should apply this method for integrated lessons that are relevant to reality [3].

Example: with topic of “IT applications for student life”, lecturer asks students to discuss, create a plan to address the topic. Lecturer may suggest some topics to students and instructs students to do survey in order to understand more about topic. Then

students design and implement an IT application needed for students.

3. Principles of active teaching

3.1. Rule 1: Connect to reality

This is a very important principle in modern teaching methods. What is taught in the classroom must be linked to external life. So when applying this principle, the lecturer should raise the issue of practical examples, which will make students curious, stimulating children to the lesson more excited.

3.2. Rule 2: Create positive atmosphere in class room

When learners feel that learning is light, not too much pressure, the learning process will be easier. This principle allows the lecturer to begin the lesson as a song, a poem, or a joke, or a social problem related to the content to be taught in that lesson so that “learning time is a joy”. Besides professional knowledge, teachers need to cultivate more social knowledge to create positive atmosphere in classroom more effectively.

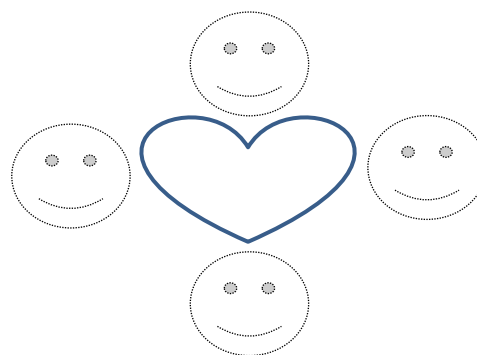


Fig 4: *Create positive atmosphere in class room*

A number of ways for lecturer to create positive atmosphere during class are as follows:

- Respect and care for students.

- Body gestures, soft words, affectionate eyes.
- Change style to create a lively lecture.

3.3. Rule 3: Use visual teaching equipment

Visualization is a common principle in modern teaching methods. Lecturer should use teaching equipment such as tables, images, projectors, visual aids to help students get understand topic easily. Practical approach and observation are the best way for students to remember the topic content effectively [1].

3.4. Rule 4: Encourage learners to do their own thing

Lecturer encourages students to organize themselves into groups to exchange and fulfill the requirements of lesson. This will give students the opportunity to master knowledge, actively approach the problem, discuss and communicate each other [2]. Lecturer can organize active learning for students in the following ways:

- Ask the students to raise their opinions.
- Give quick questions.
- Practice in class.
- Work on a theme in groups.

3.5. Rule 5: Summary the main ideas

Lecturer should summary the main ideas of topic so that student can get the points what they should care after finishing the lesson. Moreover, lecturer should suggest the topic for next class [2].

4. Skills needed when applying active teaching methods

In order to implement active teaching methods, lecturer should have several teaching skills described as following.

4.1. Make lesson planning

The lesson planning includes the following contents:

- Identify the name of topic at the first page of the plan.
- Identify the type of learner to prepare the appropriate lecture.
- Determine the number of students to organize the class.
- Determine the reasonable time duration for the contents of the lecture.
- Determine the final goal that students should achieve.
- Provide students with full reference material.
- Identify detailed plan: timing, content, methodology, and teaching equipment for each class period [2].

4.2. Start lesson attractively

It is very important for teachers to start their lesson in a way that attracts student's attention. In particular, the lecturer should present an overview of the subject, how to evaluate the subject, form of the examination, detailed outline, reference material for the student at the first period.

4.4. Use teaching equipment proficiently

Proficiency in using teaching aids such as tables, chalkboards, calculators, project presentations, illustrations also contributes to the success of the lecture [2].

4.5. Assess student result correctly

Lecturer has to determine whether the learner has achieved the goal or not. Teachers should choose the appropriate form of assessment for particular content and objects to be evaluated. The

assessment needs to be detailed and objective through theoretical questions in the classroom, solving exercises on the board, or practical content, performing group tasks, final examination... [3].

4.6. Be good teaching behavior

The behavior of the lecturer is formed in the process of communicating with the students. Behavior shows the quality of the teacher, so teachers need to study and practice regularly. It is important that the lecturer is always polite, cheerful, respectful, close and fair to all learners [2].

5. Conclusion

At present, many teachers are aware of the need to innovate teaching methods aimed at helping teachers and learners achieve the best effect in education. No teaching method is universal. Teachers need to practice and apply teaching methods actively depending on their expertise to help students be more interested and active in receiving knowledge. It can be said that active teaching methods play important role in helping students to get the knowledge and skills which meet the needs of modern society.

REFERENCES

- [1] Nguyễn Thị Minh Phương, Phạm Thị Thúy, Lê Việt Chung, *Cẩm nang phương pháp sư phạm*, NXB Tổng hợp TP. Hồ Chí Minh, 2016.
- [2] Ulrich Lipp, Paul Schueter, *Đổi mới phương pháp giảng dạy*, NXB Lao động Xã hội, 2005.
- [3] Phan Trọng Ngo, *Dạy học và phương pháp dạy học trong nhà trường*, NXB Đại học Sư phạm, 2005.

TÓM TẮT

MỘT SỐ PHƯƠNG PHÁP DẠY HỌC TÍCH CỰC ÁP DỤNG TRONG ĐÀO TẠO THEO HƯỚNG TIẾP CẬN CDIO

Đổi mới phương pháp dạy học theo hướng phát huy tính tích cực, chủ động, sáng tạo của người học là một trong những vấn đề quan trọng trong giáo dục. Sử dụng các phương pháp dạy học truyền thống, giảng viên là người truyền tải mọi thông tin cho sinh viên theo hướng một chiều. Sinh viên thường chỉ thụ động đón nhận tri thức. Khi chuyển từ phương pháp dạy học truyền thống sang phương pháp dạy học tích cực, giảng viên và sinh viên đều cần phải tư duy và chủ động giải quyết vấn đề. Sinh viên sẽ tự tìm kiếm thông tin thông qua các tài liệu hướng dẫn, giảng viên sẽ là người lập kế hoạch, tổ chức và điều phối các hoạt động trong lớp học. Trong bài báo này, chúng tôi trình bày và phân tích một số phương pháp dạy học tích cực được áp dụng trong đào tạo theo hướng tiếp cận CDIO.