

ORGANIZING SELF-STUDYING ACTIVITIES IN TEACHING PHYSICS FOR HIGH SCHOOL STUDENTS ON THE BASIS OF B-LEARNING MODEL

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Received: 10/07/2018; Revised: 15/08/2018; Accepted: 28/09/2018.

Abstract: The self-learning process of students is favorable in terms of time, but due to the shortage of learning materials and teacher's orientation, the self-learning process often does not achieve the desired effect. The establishment of E-learning system and the teaching-learning model combined with B-learning will help to overcome these difficulties. This article presents the process of organizing self-learning activities for students in teaching Physics based on B-learning model.

Keywords: Self learning, B-learning, teaching Physics.

1. INTRODUCTION

Understandably, the learning process is to acquire knowledge, practice skills, and cultivate awareness. If learning is the process of learning, exploring knowledge and forming skills for self, self-studying is active independent learning and knowledge acquisition. The learner's self-study may or may not have the support and guidance of the teacher. The process of applying information technology to teaching is to improve teaching effectiveness. The combination of various types of training, especially between E-learning and direct teaching, in the process of organizing student self-learning activities is a current trend. The article deals with the problem of organizing self-study activities for high school students in teaching physics according to B-learning model.

2. CONTENT

2.1. Self-study and self-study process

The concept of self-study has been mentioned in many different ways by different authors nationally and internationally. According to Thai Duy Tuyen, self-studying is an independent activity that takes over the knowledge, skills, techniques, and experiences of human social history in general and of learners themselves [1]. According to the Dictionary of Education, self-learning is the process of self-activity, the acquisition of

scientific knowledge and practice of practical skills without the direct guidance of teachers and the direct management of educational institutions [2].

From different self-study conceptions, the author is in favor of the idea that self-study is the process of self-performing learning task to master the scientific knowledge and training skills. Self-study may take place both in and out of class, with or without program and textbooks. It is a positive, active, and self-conscious activity to achieve the learning goals of the learner.

Based on the role of self-studying, characteristics and forms of self-studying, we believe that self-study consists of four stages: planning, implementing the plan, self-checking, self-regulation as can be seen in *diagram 1*:

Stage 1 - Self-study planning: In order to set up self-study plan, learners need to know: - The program (time, content, study materials, schedule) of subjects; - School planned activities; basic self-learning methods, self-learning skills that need training. After that, the learner develops a self-study plan.

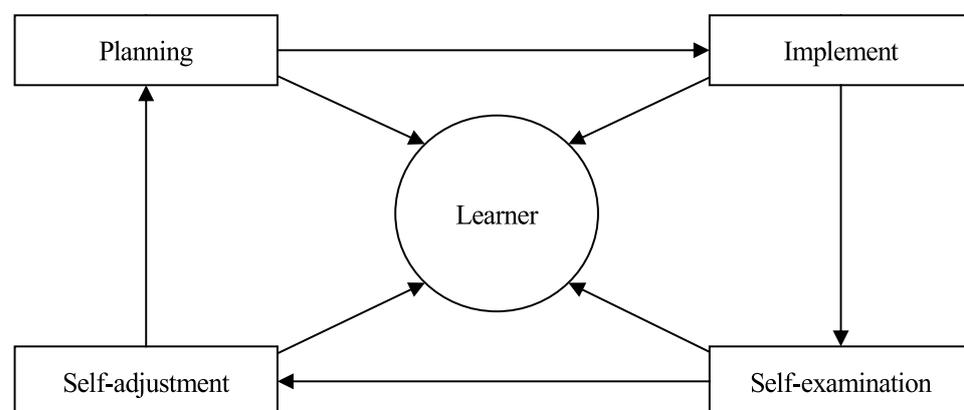


Diagram 1. The phases of the self-studying

Stage 2 - Implement self- study plan: To implement the self-study plan, students need to persist and actively implement the plan in time.

Stage 3 - Self-examination and self-study plan assessment: Learners need to plan to self-examine and evaluate the quality and effectiveness of self-learning activities on the basis of knowledge and skills of each subject's plan.

Stage 4 - Self-adjustment plan: If the plan is inappropriate or ineffective, the learner needs to adjust the self-study method.

2.2. B-learning - Characteristics and levels of application in teaching self-study

B-learning is a term used in education and training in developed countries such as the United States, Japan. B-learning is combined teaching which comes from the meaning of the word "Blend" i.e. "mixed". According to Victoria L.Tinio, "Blended Learning refers to the combined learning model of traditional classroom and E-learning solutions." [3, p 4] The concepts are based primarily on a combination of organizational form, content, and teaching methods.

In Vietnam, B-learning is a relatively new concept. According to Tran Trung, Blended learning is a form of learning that develops a course with a combination of two forms, online learning and face-to-face teaching [4].

From the previous research nationally and internationally, B-learning can be understood as the coordination between content, methods and ways to organize teaching of the different forms to optimize the strength of each form, ensuring the highest education efficiency. In this study, we focus on the study of the combined model of traditional teaching organization and internet teaching organization in teaching Physics in high school. B-learning has the advantages of face-to-face teaching and online teaching; therefore, in comparison with traditional training, B-learning has the following advantages:

- *Not limited by space and time*: The widespread availability of the internet has cleared the gap in time and space for B-learning. With a B-learning course, students do not have to be fully present in the classroom but they can participate in the study and exchange knowledge with classmates and teachers through the network (with a desktop or a laptop) at all times.

- *Attractiveness*: With the support of multimedia technology, electronic lectures incorporating text, illustrations, audio, video, etc. have increased the attractiveness of the lesson. Learners can not only listen to lectures but also view visual examples or interact with

lessons. Thus, the ability to grasp knowledge also increases.

- *Update*: Course content is continuously updated to suit learners' needs. In addition, the process and results will be adjusted and evaluated regularly, objectively, and timely.

- *Flexibility*: A course of B-learning does not necessarily follow a fixed schedule. Thus, under the guidance of the instructor, the learner can adjust the learning process, control the speed of learning, the learning tools, the location and the amount of knowledge that they want to acquire. Learners are able to decide how to acquire knowledge and skills appropriate to their abilities and learning styles.

- *Random access*: The list of lectures and courses will allow learners to actively select units that are directly related to their background knowledge and tasks at that time. Learners can find their own learning skills with the help of online materials.

- *Collaboration and cooperation*: Learners can easily communicate directly with friends or teachers in the learning process through forums, email, etc. These exchanges can support learning process and self-learning process of learners.

- *Time saving*: B-learning allows learners to learn at the fastest speed with efficiency. It also helps learners easily memorize their knowledge and adjust the learning speed through learning tools. Learners are able to solve problems in their own time.

- *Being widely used at low cost*: Just using the internet, learners can access the course anywhere at very low cost.

Based on the ability to support and different phases of self-study process, B-learning models can be divided as follows (Diagram 2):

Level 1: Traditional classroom teaching, E-learning is just a reference. The teaching process takes place in the classroom according to a fixed plan, or as instructed by the teacher. The main reference materials are textbooks, workbooks, reference books, etc. Online materials are not used or used a little.

- *Level 2: Balance between traditional teaching and E-learning*. Teachers can design, pack and transmit learning content, create forums, guide students to self-study online along with traditional classroom learning.

- *Level 3: E-learning supports the process of self-learning a complete module over the network*. Students attend a unit-based course or some modules that are not taught in the traditional classroom.

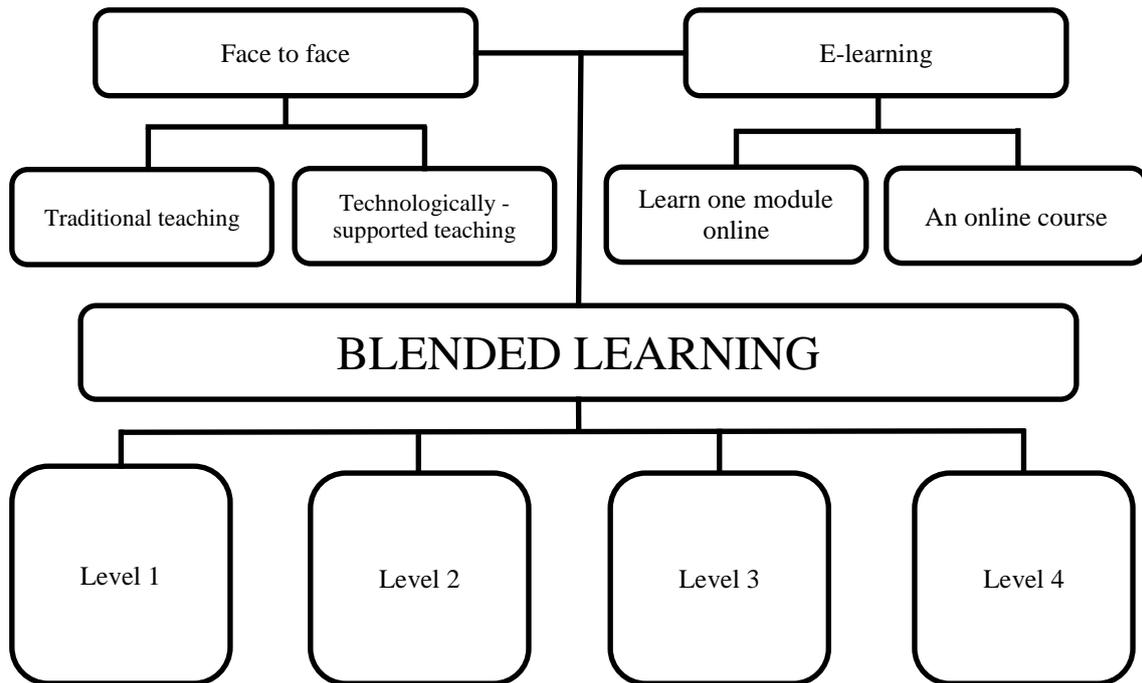


Diagram 2. Levels of coordination in the B-learning model

- Level 4: E-learning supports a complete self-study online course. At this level, the whole content and curriculum are put on the E-learning system. Students take the course by registering online and the process of self-study takes place entirely on the network.

2.3. Proposed forms of organizing self-studying activities for students in teaching Physics according to B-learning model

We use E-learning system together with face-to-face teaching to organize self-studying activities in Physics from low to high level.

2.3.1. Traditional teaching in class, E-learning is just a reference

The teaching process takes place in the classroom according to a fixed plan, or as instructed by the teacher. The main reference materials are such materials as textbooks, workbooks, or reference books. Online materials are not used or used a little.

2.3.2. Teachers design, package and transmit learning content; create forums, guide students to self-study on the E-learning system along with traditional classroom learning

Along with traditional classroom teaching, teachers can design, package, download learning content and guide students to self-study on E-learning system. Instructors can assign tasks to students to complete the

exercises on the system through the electronic exercises or tests. By solving exercises and tests, students compare and evaluate their learning outcomes. If there are any problems that are not understood, they can log in to the e-lesson to be able to re-learn the lessons.

That teachers ask student to self-study the knowledge of physics on E-learning system will bring many advantages such as: teachers can edit and package lecture system, exercises and tests with large capacity. By accessing the homework assignments, teachers can monitor students' self-study progress.

Teachers organize self-study groups, seminars, etc., assign students to study each module. Students in self-study group do not necessarily meet in person, but they can solve problems or discuss directly with the teacher about the problems in the forum.

2.3.3. Teachers ask students to self-study a unit of knowledge directly related to the lesson in order to reduce the learning load in the classroom

This is level 3 of B-learning. At this level, some modules do not necessarily need to teach directly in the classroom. When preparing to teach the next lesson, the teacher needs to prepare the lesson plan and assign the task to let students self-study some of the contents of the next lesson, which requires them to study textbooks and materials. Some content requires students to access the E-learning site and log in with electronic lecture

synchronization. Teachers will check this knowledge when they come to teach new lessons and solve students' problems in the self-studying process. At higher levels, teachers can teach students to discuss their knowledge and draw new conclusions, laws or concepts.

This form requires students to study at higher levels, but still under the guidance and management of teachers. Students are assigned tasks, self-study problems and discuss with friends and communicate directly with teachers to build new knowledge. Thus, this form helps students achieve high results in learning, promote positive and self-reliant in learning Physics.

2.3.4. Students self-study a complete lesson in the E-learning system

This is the highest self-study model of students in B-learning model. In this model, students self-study materials and new knowledge with synchronized lecture. Then, they do the electronic exercises, comparing their results with the answer of the assignment to adjust their learning. If their problems have not been solved, students can repeat themselves many times to understand. Once you understand the lesson, students will check their knowledge after each lesson, self-test results to adjust the process of self-study.

In addition, students can exchange knowledge and problems with teachers or other members through forums. Feedback from teachers and other members helps students to cope with learning difficulties.

To help students become acquainted with this self-study method, the teacher provides a learning plan for the entire chapter or a whole section of knowledge in the Physics program. After that, the lessons that teachers will transfer to students are informed, students have to study by themselves and report the results. Teachers assign the task of learning to students through the E-learning system and give feedback on their learning results.

This self-study process aims to help students improve their ability to work independently, self-consciously and actively explore and study in the process of cognitive physics.

3. CONCLUSION

By conducting pedagogical experiments in Tran Hung Dao High School, Hue city, with the knowledge of optical geometry, we realize that: - Organizing self-studying activities in physics for students on the basis of B-learning model is essential, helping children be active, improving self-study ability, thus contributing to improving teaching quality in physics; - The lessons in B-learning model have trained students to work independently, actively and improve teamwork skills.

On the other hand, with complex contents, teachers will present data on the E-learning system and spend more time working directly with groups. This helps to increase awareness and improve the learning effect of physics.

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