Training Learning Skills to Students for Innovation of Teaching Methods

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Abstract

Learning skill is tool that can help students be self-taught as well as learn for long time. Nowadays, there are lots of restrictions in training learning skills to students. Hence, the aim of this article is to define the system of learning skills and methods to train such skills to students. Exploring the system of learning skills with theoretical, practical, pedagogical and statistical methods that are applied to teachers and students gave us a suitable conclusion of defining the system of learning skills and good training methods. However, it is necessary to do more researches to determine standard system of learning skills and to improve training methods.

Keywords: Learning skill; System of learning skill; Training methods

Introduction

Learning skill is a composition of major abilities, approaching abilities and social abilities of learner. Such abilities affect human beings in real situations in order to collect, process and apply knowledge. Since then, they contribute into building and improving skills of learners. This skill system will help students achieve knowledge, study forever and contribute into producing process of family and society. Many researchers mentioned this problem before, such as: "How do you learn yourself?" of Rubankin; "Handbook and strategies for learning" of Nguyen; "Skill to work with textbook" of Vo; "Experiment skill" of Truong, Nguyen (2007); Truong (2009) and Vo (2005), "How people learn –Brain, Mind, Experience, and School" of Ann L. Brown, "Classroom instruction that works" of Robert… However, those reports often mentioned a certain detailed skill. So far, there has not been any general system of learning skill and system of unique training method that can be used during learning process. So, this study focuses on learning skill system research and the measures to practice learning skill for student in the process of teaching .

We proposed a system of learning skill and the measures to practice learning skill through out the research of theories of psychologist , education , the studies analysis relates to learning skill and the present the reality of teaching the investigation. Thus, "If we correctly define the system of learning skill and suitable method to train such skills, students could shape and improve their learning skill".

Method

To do this research, we chose best teachers in Thua Thien Hue Province, Vietnam to investigate and conduct pedagogical experiments on 198 students of four classes of grade 11 at Gia Hoi High School, Hue City, Vietnam. These students were taught Advanced Physics program for grade 11, they almost got equal score. This is prerequisite condition to ensure that collection output is fine.

First of all, we established survey tickets of consideration and evaluation of experienced teachers about learning skills and their roles to students. Since then we collected various ideas of teachers about learning skills of students such as: which skills that student

already had or did not get yet, which skills are the most important and necessary, and how to train those skills. After that we went on investigating the same matters to students. By this process, we realized that most of teachers and students understood the importance of learning skills. However, such teachers and students said that they could not catch the system of learning skills as well as methods to trains these skills. Based on statistical investigation results combined with researching psychological theory, pedagogy and correlated projects, we introduce the system of learning skills including three fundamental skill groups: collecting, processing and using information. Each group consisted of lots of element skills and methods to train them.

Table 1. The skills group and the steps to train sills for student

Skill group	Types of skill	Steps to train skills
Collecting information	Reading, observing	Step 1: defining basic knowledge, setting reading and observing plans Step 2: Reading books, observing pictures, graphs Step 3: Summarizing what you read Step 4: Defining all problems you need to solve, debate to draw a conclusion
	Listening	Step 1: Defining content of the lessons Step 2: Listening Step 3: Summarizing what you listened Step 4: Defining all problems you need to solve, debate to draw a conclusion
	Take note	Step 1: Defining contents of your notes Step 2: Taking notes Step 3: Making perfect your knowledge
Processing information	Memorizing	Step 1: Defining knowledge you need to memorize Step 2: Memorizing Step 3: Reappearing your knowledge
	Summarizing information	Step 1: Defining knowledge you need to summarize Step 2: Analysing facts, terminologies Step 3: Defining relations among knowledge Step 4: Defining unknowns
	Draw tables, charts	Step 1: Defining content you need to draw charts, diagrams, graphs Step 2: Defining relations among knowledge Step 3: Defining types of diagram, chart, graph you will use Step 4: Drawing diagrams, graphs
	Analysis, Synthesis	Step 1: Defining the analytic and synthetic object Step 2: Defining aims, tasks of your work Step 3: analyzing the object according to the defined aims, tasks Step 4: Dealing the tasks, generalizing, finding relations in laws
	Comparision	Step 1: Defining the comparing objects, contents Step 2: Defining the initial conditions Step 3: Defining the comparing standards Step 4: Carrying out comparison and drawing conclusion

Skill group	Types of skill	Steps to train skills
Processing information	Apply knowledge	Step 1: Defining the actual requirements
		Step 2: Defining the relative knowledge
		Step 3: Using knowledge to deal the practical requirements
	Deepen knowledge	Step 1: Defining the actual requirements
		Step 2: Analyzing phenomena
		Step 3: Dealing all tasks by different methods
		Step 4: Drawing conclusion, collecting nature relationship
Apply information	Solve problems	Step 1: Defining the kind of exercise, reading the question carefully
		Step 2: Defining the facts, unknowns, summary
		Step 3: Analyzing phenomenon
		Step 4: Defining the method, plan, and solving the exercise
	Do experiments	Step 1: Defining the kind of experiment
		Step 2: Defining the necessary equipment
		Step 3: Defining the method to do experiment
		Step 4: Doing experiment, collecting, solving data
	Self-assessment	Step 1: Defining the necessary knowledge to make an exam
		Step 2: Defining method, equipment, and examination standard
		Step 3: Evaluating the result according to standard
		Step 4: Drawing the conclusion, suggesting the method to overcome or motivate

Table 2. The training methods

Method	Content
1	Teacher combine equipment and teaching methods to form and develop the learning capacity of student
2	Teacher design the guiding document about self-learning method for student
3	It is necessary to teach self-learning methods for student
4	Using Internet technology, modern teaching equipment to develop the learning capacity of student
5	Changing examination, evaluation methods the result of student

Secondly, we researched students' curriculum and selected suitable lessons to design experimental lesson plans. In each chosen lesson, we determined the content and correspondingly appropriate skills to conduct training through teaching that content. Skill training must be unique in ensuring to completely impart knowledge and obeying designed training methods. However, learning skills have mutual relations, so preceding skills are main ones. Anyway, it could be flexible in combining various teaching methods as well as training this skill by others. Next, we established system of sample tests to evaluate the efficiency of changing teaching methods, of ways to write lesson plans. These sample tests must both ensure that we correctly evaluated selected knowledge as well as skills.

Next, when we had the system of experimental lesson plans and system of evaluation tests, we did the pedagogical experiments in the school. In chosen classes, we divided into 2 groups. The first group included 2 experimental classes of 99 students. These two classes would be learnt the experimental lesson plans which we chose and compiled. The second group included two rest classes of 99 students. These students

learnt the same lesson of experimental classes but they were taught with traditional teaching method. After each lesson, students in both classes must take some tests do that we could collect necessary information. This information showed the differences in ability of catching, memorizing and immediately applying after being learnt between control and experimental classes. At the end of this pedagogical experimental, these students must take a 45-minute test in order to evaluate the effect of continuous training with lots of skills during experimental time.

Finally, after taking part in class, recording videos of control and experimental periods in order to collect behavior of students and their active frequency in periods as well as collecting data from sample tests, in details, from the scores of the control and experimental classes after doing pedagogic experiments, we evaluated experimental efficiency on both sides

Results

In qualitative side, we recognized that:
Lecture note was designed to train system of learning skills for students and stimulate their learning interest. By given problems, students in experimental classes had more chances to exchange, discuss with other teachers and students than ones in control classes. Since then, students could spontaneously recognize new knowledge. Cooperation between teacher and students and lecture notes written according to proposed direction made students more active in class, discover and occupy knowledge faster.

In quantitative side, we used SPSS software to analyze statistical data with accuracy of 95%. From the test results, we had the statistical data of the test as follow:
Average score of the test of students in experimental classes (7.22) was higher than the one in control classes (5.87).
Standard deviation had small value so the obtained data was rarely disperse; hence, the average was highly accurate.

- $S_{Experimental} < S_{Control}$ and $V_{Experimental} < V_{Control}$ proved that the dispersion in experimental groups decreased less than the control ones.

So, the result of the experimental classes was higher than that of the control classes. To verify this result, we used the method of statistical theory verification that was indicated below to test the differences between experimental and control groups. The result show the value of t was 4.56. The two-turn distribution critical value t_α was referred in the table with $\alpha = 0.05$ and degree of freedom, f = 196 was $t_\alpha = 1.96$, meant that t $> t_\alpha$. Hence, the hypothesis of H_0 has been rejected but accepted theory of H_1. So, the average score of the experimental group is higher than that of the control one. This was meaningful with the rate of meaning 0.05.

To the last test in the pedagogical experiment, the evaluation of general result during the experimental process showed that by analyzing the same data, students in experimental classes had thorough understanding; they were more active than students in control classes. The class organization followed the direction of proposed training system of learning skills in this topic partly contributed into the activeness of student's awareness activities.
Comparing with the researching aim that defines the system of learning skills and the methods to train students system of learning skills in teaching, by this, it will help students develop and make perfect their system of learning skills, we realized that this topic could define a system of learning skills and suitable training methods. Collecting data through students' learning result which students were learned and psychological expressions, attitudes, active levels of students in class were carried out exactly, highly reliable.

Discussion

Through the pedagogical experiments, based on observing the class periods, with the consideration of teachers and students as well as quantitatively processed experimental results, we could conclude:

The topic contributed the addition and improvement of argument basic of learning skill systems and methods to train such systems. The usage of methods to organize and train the system of learning skills to students that we introduced made classes more active and made students easily understand new knowledge. It contributed into improving the quality of learning. Students mastered and applied knowledge to solve new problems better. Most of the students completed the assigned duties, which meant they were really active and self-confident to occupy new knowledge, and to apply it to solve new missions in learning. It meant that the possibility of applying the proposed methods was very high.

With collected results, we realize that proposed theories are suitable with practical research as well as practical teaching in current high schools. Presented skill system is close to the learning task of students. Steps and methods to train this skill system are simple, easy to carry out, and easy to apply into various groups of students.

However, it required teachers to use system of training and learning methods during designing the lesson plans to get higher results. Teachers should have clear, scientific and suitable plans of organizing, training system of learning skills. Besides, to get highest results, teachers must be enthusiastic, confidential and keep improving major ability, pedagogical skills.

The combination of teaching under direction of training system of learning skills and modernly didactic media has contributed into the improvement the student's learning quality. Therefore, it is necessary to equip material facilities, didactic equipments, especially the facilities of classes and experimental tools.

In this article, we only focused on using methods of organizing and training system of learning skills on Advanced Physics class for students of grade 11. However, we just made the experiments in grade 11, the collected results was feasible. Therefore, we can expand these methods for other levels both in basic and advanced programs.

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