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"Modulize" the practicing and experiment in the curriculum of biology: To enhance the effectiveness in training the habit and skill of self-study for biological students in Vietnam

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Abstract

The research presents the reality of teaching practicing biology in VNU, University of Education. The teaching practicing and experience on biology has shown that: the old method has not paid due attention to the ability gap between students, thus cannot promote students' potential skill of self-study. With new method of instructing students in practicing, biology based on a modern teaching technology – teaching module. This form of teaching is particularly helpful in forming the habit and skill of self-study for students, and especially suitable and effective in the context that Vietnamese universities apply the system of credits in training. So that "Modulize" the practicing and experiment in the curriculum of biology can enhance the effectiveness in training the habit and skill of self-study for students.

Keyword: Experiment, Practicing method, Modulize, Student, Biology.

1. Introduction

Nowadays, to set - up the habit and skill of self-study is very importance at every school in Vietnam. The system of skills includes: self – study skill, occupational skill and research skill is one of the four targets of the tertiary education's curriculum (1.knowledge, 2.skill system, 3. creative activities experience system and 4. standard attitude to nature, society, human and one's self), especially in the biology is a practice science.

In order to complete the training mission successfully, beside to research into improve the quality of knowledge, there have also been research into improve student's self - study skill. This research's focus is to develop methods to form the biology students' habit and self-study skill based on modern teaching technology achievement – teaching module in teaching biology.

2. The reality of teaching practicing biology in the VNU, University of Education

Table-1: Current method in teaching practicing on biology

Teachers	Students	Notes
Show documents relating to the	Get documents, remember the task	This step should be taken some

practice or experiments on biology; assign the task: study the targets, steps to implement; prepare specimen, tools	and perform them	certain time ahead of the lesson. Practicing documents usually consist of only practicing targets, tools and practice on biology
Check the students' preparation: specimen, steps to implement experiments on biology	Present steps to carry out experiments on biology; introduce the prepared specimen (if any)	Perform at the beginning of the practice biology lesson
Confirm and note the steps of each experiment on biology.	Remember the notes when carrying out each experiment on biology.	
Divide students into groups	Each group go to its own site	In some cases, it is not necessary to divide students into groups
Observe, adjust, guide… students to carry out the experiment on biology	Carry out the experiments on biology; write down and try to explain the results in the report sheet.	Students carry out experiments in groups or individually
Ask the representative of each group or a random student in the group to report and explain the result of each experiment on biology	- Report and explain the results of the experiments on biology - Self-check, judge and explain their own experiments on biology.	- Some teachers may require students to hand in report sheets before other students and teachers comment on them - Some teachers may allow students to write their report sheets at home and hand them in the next class.
Ask some other students to comment and then the teacher confirms and explains the results	- Finally comment, judge and explain the experiments - Draw lessons from and correct the mistakes (if any) in each experiment.	

Teaching practicing and experience has shown that students often split into 2 groups:

- The 1^{st} group includes students who are really serious and active in studying, thus get good progress. However, the superfluous time in each laboratory class often makes some students belonging to this group become "impatient". It means that this method has not pay due attention to the ability gap between students, thus cannot promote students' potential skill of self-study; activeness and constructiveness in studying.

- The 2^{nd} group includes students who learn unwillingly or lack self-awareness (use experiment results of other students or wait until teachers make comment on experiment results and give explanation to copy into their report sheets). Consequently, the study progress of this group is often poor or not objective.

3. "Modulize" the practicing in the syllabus

The concept of "teaching module" is derived from "technical module" and is defined as a part of the syllabus which is built to meet a particular goal or to study a particular subject.

Besides the typical features of a technical module, a teaching biological module also has some distinguishing ones: It comprises of a set of study cases related to the subject of biology to be studied. It has a system of clear, detailed, feasible, measurable teaching goals. It enables learners to progress at different rates to the goals through providing them with numerous acquiring methods. It is comparatively independent in terms of syllabus. Therefore, when approaching a module, students must be able to meet some certain prerequisites on knowledge, skills, and attitude. It can be at either big, medium or small level, depending on the number of periods. It has a testing system at its end to classify advancement. In terms of structure, a teaching module has three parts:

Input: comprising of module's title, role, importance; knowledge, skills required of learners; module's targets and pretest. ***Body***: comprising of all the teaching contents organized in a clear structure; necessary instructions about learning methods enabling learners to self – acquire the knowledge and have independent learning skill. A body has sub-modules (each sub-module has three parts: introduction, contents and learning methods, mid-test). In some cases, a body is supplemented by extra-module to help learners with consolidation and revision. ***Output***: including a general summary, a final test and a system of instructions for further learning depending on the results of the self-study module.

Reality has shown that biological modules' forms are not necessarily the same but can be distinctive in terms of profession. What is important is that a module fulfills the following tasks: assign clear duties to learners; design studying activities which create opportunities for learners to self-seek the knowledge; have diversified measures of assessment to help students control and evaluate the level of success in doing their studying activities by themselves. However, it should be noted that in biological modules, there must be unity in structure and forms of presentation right form the first draft.

With the above-mentioned features, teaching biology module is really an effective self-study means, especially in the system of credits in training.

4. "Modulize" the practicing biology in training the habit and skill of self-study

The teaching module on biology included 3 steps:

Step 1: ***Definition of the teaching objectives***

The objectives of the biology are to provide scientific knowledge on the structural characteristics and the living activities of an animal Plan, human being. To reach these objectives, besides the traditional didactic auxiliaries (as tables, photos, plastic models, samples, equipment for experiments and practical exercise...), our schools are in great and pressing need of didactic aids in applies informatics technologies, to renovate our teaching methodology.

So that the target of practicing on biology is for build and develop skills for the students. To reach this goal, teachers need to arrange and instruct students to work independently and make them take the responsibility.

Therefore, a teaching method must be a method of instructing students individually (Students must take the initiative in studying materials; experimenting independently)

Step 2: ***Analysis of the teaching content***

Choosing a teaching method is largely dependent on teaching target; contents and facilities. Analyzing these factors in the practicing on biology, we can see that:

Contents of experiments in each practice lesson; practice lessons in each unit of study are comparatively independent including subjects: genetic, physiology, Human biology, cell, ecology, Anatomy, etc.

Step 3: ***"Modulize" the practicing and experiment biology adapt to the teaching requirements***

Teaching modules requires lecturers to have deep knowledge of the structure of a teaching module and the process of designing a teaching module.

- The teacher must search and collect or made biology pictures, photos, tables and scientific films on biology.
- The teacher must search and do experiment-modelling or practicing - modelling.
- The teacher must gather appropriate material use to experiment-modelling pieces.
- Processing and technical treatment of illustrating aids and teaching on practicing and experiment-modelling.
- Specimen, chemicals, experiment tool … are mostly prepared and arranged individually.

5. Conclusion

These analyses show that modulizing the practicing part is feasible and in accordance with the trend of renovating teaching methods in order to form the habit and skill of self-study for students. Modulizing the syllabus in the practicing biology is one of the directions to innovate the way to organize teaching based on a modern teaching technology. This method is particularly appropriate and useful when universities apply the system of credits in training. Hope to teaching modules, lecturers' teaching method and students' learning method will be innovated; teaching and learning quality on biology will be enhanced.

References

[1]. Hoat D.V. et al. (2010); Theory of teaching in university, *Education Publishing House, Hanoi*.

[2]. Huan. D. (1992); Some insights into modulized vocational training worldwide, *Journal of Education and Technology*.

[3]. Vinh N.Q. et al. (2004); Manual of Biology of the 8th Form, *Education Publishing House, Ha Noi*.

[4]. Hung D.M et al. (2004); Document on Biology of the 8th Form, *Education Publishing House Ha Noi*.

[5]. Cat T.D et al. (2005); Practical exercises of the Manual of Biology of the 8th Form, *Education Publishing House, Ha Noi*.