

The customs of independent study of students

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Abstract: Maximum knowledge in less time and with minimum effort represents an imperative requirement of contemporary humans assaulted by the explosion of information. The rustiness of knowledge and skills needs to acquire the methods and techniques of independent study. Starting from the premise that the University contributes to the development of student autonomy (to learn independently and to be autonomous professionals in their future professional service), the study identified how the Students-to-Become Physics and Biology Teachers, study individually. The information obtained through various methods such as observation, consultation, interview, questionnaire, research products, business students (books notes, written works, etc.) were permanently compared between them, in order to obtain radiography of the existing situation at the educational level of reality on the planning, organising and conducting the study individually. The independent learning involves a high level of self-consciousness, implies the affirmation of cognitive and metacognitive skills, as well as self-adjustment of personal effort.

Keywords: independent study, autonomy, self-regulation learning, metacognition, self-monitoring, personal reflection.

1. Introduction

A maximum of knowledge in a minimum of time along with a low effort represents an imperious requisite of the present – day individual, who is being assaulted by the explosion of information. The superseded

knowledge makes it imperative to acquire methods and techniques of independent study.

Many authors consider that the methods, the process and the techniques used in the teacher's achievement may be grouped in the following categories: a) methods and techniques of information and documentation; b) methods of effective learning (of assimilation, comprehension and mental organisation of information); c) methods and techniques of teaching capitalisation (Ion Al. Dumitru, 2008).

Independent study is "an indispensable method for the preparation of lessons, written papers, projects, exams, contests, (...), in order to satisfy one's requisites of self-cultivation or self-education (Ioan Cerghit, 2006).

The entire didactic intervention is being guided towards the students' development as self-governing and competent persons, in order to become capable of efficiently and productively respond to changes, and to generate their own effort as self-governing experts. Fundamentally speaking, the student's function is to be responsible and to self-adjust his or her learning process.

In order to re-launch the study of the educational relationships, it is imperative to take into consideration the next essential aspects: the activation of the participative and contextual fields: the individualisation of the teacher-student relationships; learning as method of emphatic inducement of positive behaviours; the neutrality of the formal authority by moving towards the formative environment's organisation, therefore towards an indirect education (Viorel Ionel, 2002).

The students' self-governing learning at aims three aspects: a) cognitive and procedural strategies, that allow the student to make the opportune decisions in order to improve his / her study and efficiency; b) meta-cognition and reflective strategies on his learning process; c) support strategies, that refer to the self-control of effort and perseverance, by promoting the conditions which affectively facilitate the study (Paul R. Pintrich , & Elisabeth De Groot, 1990).

Many authors suggest that the meta-cognition term should limit itself to what the individual really knows: a) about him, as a person; b) about the task; c) about the strategies (Ann L. Brown, 2000).

Some authors (Paul R. Pintrich, in Smith, P.K., Pellegrini, A.D., coord. 2000) consider that in the structure of meta-cognition two components have been described: the information about knowledge and the adjustment of knowledge.

2. Case study

We started from the hypothesis that students do not have the necessary customs to study independently and that the University contributes to the student's self-governing development: to learn by themselves and to become self-governing experts and reliable strategists, as far as their future labour conscription is concerned.

In order to realise a diagnosis on the customs of independent study of the students from the Physics and Biology faculties, we have chosen a sample of 146 students from the 1st and the 3rd year of study – University of Craiova. At a stratified random, we have obtained two sub-samples (students from the 1st year of study and students from the 3rd year of study).

The investigation realised at the level of the students enrolled in the faculties of Physics and Biology had the purpose to gather data as far as the next essential aspects of the independent study are regarded: a) the importance given by the students to the individual study; b) the way the students are informed about the planning, the organisation and the individual study's development; c) the methods and the techniques used in the individual study; d) students' grading techniques.

2.1. Instruments used

In order to identify the way the students future physics and biology teachers study individually, we have used the following methods: the observation, the conversation, the interview, the questionnaire and the research of the students' activity's products (notes, written papers, elaborated instruments etc.). The information obtained has been permanently compared to the others, in order to have a much more real and objective image of the situation. Being an important stage in the independent study and an efficient method for the meta – cognition's development, we have frequently made appeal to understanding the students' reflections.

2.2. Data presentation and interpretation

After considering the data we have come about the following results:

Table 1

Results and percentage values

Criteria	Results	Percentage values
<i>1. In order to form the customs to study independently, students consider</i>	a) launch questions and then guide the students to find the responses;	62%

<i>that the teacher should</i>	b) include the students in conversations on a certain topic;	22%
	c) encourage individual learning;	8%
	d) expose the new knowledge;	8%
<i>2. The difficulties the students encounter while studying independently concern:</i>	a) the reflections' formation;	
	b) the general interpretation of the elaborate schemes;	
	c) the interpretation of some scientific themes;	
	d) the group's lack of cohesion;	
	e) the absence of some education means;	
<i>3. Students' proposals to facilitate the formation of the customs as far as the independent study is concerned:</i>	a) establishing the priorities of the independent study;	
	b) elaboration of a study plan;	
	c) consulting the ideas from more papers;	
	d) improving the knowledge;	
	e) realising a synthesis of knowledge with the help of schemes, cognitive maps;	

As far as the frequency of the Internet use in the process of self-governing training, the results are as follows:

Table 2
Frequency of responses

The frequency of using the Internet in the process of self-training	The frequency of responses
Very often	30%
Often	45%
Little	15%
At all	10%

From the data above, it can be deduced that the utilisation of Internet in the process of self-training has become a usual modality for the majority of the investigated subjects.

The answers given to the question ‘What is your purpose for using the Internet?’ also emphasise the type of dominant motivation. After processing the data, the subjects connect to an Internet network in order to elaborate a series of papers demanded by the teachers (extrinsic motivation) or to document on various topics of personal interest, such as to improve, at their own initiative, some aspects of the themes/problems debated with the teachers in class, and to find answers for the questions occurred from their own curiosity (intrinsic motivation).

Table 3

No.	<i>The purpose for using the Internet</i>	<i>The frequency</i>
1	In order to prepare for exams	26%
2	To realise the applicable papers	22%
3	To improve the information from a certain domain	7%
4	To talk to other navigators	26%
5	To find answers for the questions that concern me	12%
6	To get updated with the latest information	5%
7	To improve some aspects of the problems debated in classes and seminars	2

By analysing the reflections of the students from the faculties of Physics and Biology – University of Craiova -, we have come to the conclusion that they were based on the following aspects:

- representations and concerns that were prior to the proposed topic;
- difficulties encountered in the process of ‘building’ the knowledge;
- questions raised and attempts to find solutions; expectations regarding the subsequent activities’ from the seminar;
- appreciations for these activities;
- aspects which are to be ‘strengthened’ afterwards;
- the clearest and deepest reflections were formed after a long time, usually at the next seminar;

- causal and hypothetical questions were elaborated with a bigger statistical weight, as part of the independent work, and with a lesser statistical weight in the direct conversation with the teacher; most of the questions had the initial aim to inform, to explain; gradually, they have evolved towards synthetic questions ('Can we conclude that...?'), hypothetical questions ('What happens if?') or evaluation questions ('What is more important?; Which of the aspects should have the precedence?')

Other observations:

- a negative aspect manifested in the way the students study is represented by the exclusive utilisation of notes. The explanation for preferring these notes results from their propensity for systematisation, quality frequently encountered in teachers' exposures, and more rarely in the exposures from manuals;

- another worrying aspect is the fact that most of the students do not know how to make use of notes and printed courses. Some of them memorise mechanically the notes exactly the same way they took them during the explanations, others memorise excerpts right from their manuals;

- 50% from the interviewed students consider that the efficient performance of a didactic activity depends mostly on the teacher; he is the one who must act tactically and creatively while teaching a lesson; he is also the one who should have the role not only of emotional stimulant, but also of co-ordinator of the pupils' individual study;

- the techniques of individual study the students from the faculties of Physics and Biology make appeal to are the following: efficient reading, note taking, annotations, elaborating papers of study, consulting the bibliography, building plans of ideas, summaries or projects etc.;

- the students are aware of the fact that it isn't enough to just receive the information, but it is imperative to make a personal effort, to prove active implication in knowledge and teaching;

- the majority of students (72%) recognise the teacher as a guide, which facilitates the development of their knowledge.

The constructive theory (Elena Joița, 2006) is applied when clarifying the problem of the self-governing training, because this encourages the formation of abilities of independent activity, of competences, the student being an apprentice in the scientific knowledge. The constructive method has an inevitable result, that of developing the competence of self-governing training, because it emphasises the pupil as an active element in the direct process of knowledge.

The Internet represents a tool enabling any navigator to become able to develop his customs to independent study.

With the purpose of facilitating the formation of the customs of the independent and self-governing study, we draw the teachers' attention on the importance of developing a didactic activity which is based on the problem of self-training, on promoting the conditions that affectively facilitate the study, on designing and analysing the activities which ensure the differentiation in students' learning (Irina Maciuc 2004) allowing the observation of the teaching progress, the development of the competences which are specific to the teaching, as a study discipline.

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