Using a Computer Program to Illustrate the Lessons of Chemistry. The Result-Motivated Pupils

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Abstract: In this article the psychological basis of pupil's interest and motivation to learn the subject of chemistry are discussed. An educational computer program was created using Flash as an environmental shell. Within the program there are several lessons based on scenarios in inorganic and organic chemistry. The didactic program illustrates connections among different subjects within chemistry. By using these interactive methods, the motivation created in pupils stays fixed and their attitude to this subject changes.

Keywords: E-learning; educational-computer program, motivation.

Introduction

Interest, its formation and development, is a traditional problem in the psychological-pedagogical literature. In Webster's explanatory dictionary interest is explained as the sense of curiosity. In Penguin's psychological dictionary interest is explained as attention, curiosity, motivation, aim, direction, desire. According to the Essential English Dictionary, interest means that one desires to know more about something or somebody. One interest forms other. It is perceived as the desire to know more news and is considered in connection with curiosity. "Curiosity" can be considered as business-like aspiration to sciences, the desire to study.

A school student - can't effectively study a subject, if s/he doesn't have her/ his - own curiosity. S/he can study facts, prepare himself for examinations, but for s/he it has - no point. Creative work can be carried out only when a student has interest or motivation on the subject. Interest is connected with attention (J. Seli, 1916), and attention can be influenced by factors, such as new impressions. He had elaborated the regularities which describes the relation between in born and acquired interests. According to this regularities, each subject can become interesting, if we "bond" it with an other subject- that is initially interesting. The two subjects "grow together" and the uninteresting subject becomes interesting.

Experiments shows that under positive emotions the left cerebral hemisphere, which is connected with verbal and logical mentality, is activated (Fox, Davidson, 1984).

Computer-educational programs give unlimited opportunity to connect two different subject during one lesson. On their basis such principles of didactics can be realized as: visuality, scienticity and accessibility.

The chemistry course in Georgia schools ends with the questions on organic chemistry and bioorganic chemistry. In this sense this peculiar significance promotes the search of the optimal way to motivate a pupil, because unlike from low class, the interest to chemistry is sharply decreasing (generally the most of students are not considering chemistry as their future profession).

Such methods of pedagogical technologies as computer educational programs and integrated teaching, give possibility to teachers for finding the aforesaid key of the interest in pupils.

The Study

The application of new technologies makes it possible to show the dynamic nature of reactions. It is especially effective for illustrating processes such as organic reaction mechanisms which are traditionally illustrated with static figures. A dynamic illustration with the ability to stop and start the dynamics at any time, according to student's wishes can provide a more effective demonstration. If the mechanism consists of discrete steps, the transfer from one step to another can be performed when student wishes (by clicking through with a mouse). If the process or mechanism that is illustrated is general, then it can be linked to other processes or