Using Information Technology in The Modern Educational System

Moraru Silvia,Cerchiu Rodica,Stan Florina,Dobrescu Corina, Stoica Ioana, Romania,

"Tudor Vianu" National College of Information Technology is a prestigious educational establishment, well known both all around the country and abroad through:
- The exceptional results in the national and international olympiades
- The training of the graduates in a "top" field in IT. This training offers them the opportunity to work in the IT area as specialists with high school qualification, specialists who handle very well the programming languages PASCAL/C++, webpage designing, Delphi-programming, Database Modeling and Managing (Visual Fox, Oracle), etc.
- The creating of multimedia products within the numerous European projects our high school participates in as a partner

The IT curriculum allows for our teachers and students to be engaged in contracts with specialized companies (The Ministry of Communication and Information Technology, SIVECO-S.A., The Ministry of Transport, Construction and Tourism).
Many of these multimedia products are displayed on our site: http://www.lbi.ro.
A major concern of our teachers and students is using Information Technology in the educational process, the utilization in the modern educational system of many teaching and communication means and techniques, by all these trying to get closer to the soul and the mind of those who receive and embrace education!
Thus, "Tudor Vianu" National College of Information Technology has created a series of informatic systems for the subjects: Physics, Chemistry and Computer Studies. These informatic systems bring, through their functioning and utilization, direct benefits (directly to the student) or indirect benefits (by contributing to the making of other educational tools) to and during the learning processes.
When creating the lessons, which have been made by, our teachers and students the following requirements have been our criteria:

1.Pedagogical, social and psychological criteria
- The learning process focuses on the subject – the student. This one does not learn a "program" or "from a program", but by resorting to the lesson, he/she learns something, improves oneself being computer-assisted.
- The informatic system (the lesson on the computer) is "personalized"; it addresses each and every student depending on their particular psychological and social abilities (by this we want to create a differentiating education).
- The lessons are attractive and captivating, adjusted to the learning, attention, fatigue, stress rhythm, etc. of the subject.
- The text, the graphical, the animated, audio-video achievement of the lesson motivate the student to acquire the information and abilities;
- The lesson is not a mere accumulation of information. During the educational activity there are used active-participating methods, creative means, open cognitive, intuitive, problematising strategies.

2.Technical and informatic criteria
- The IT products we have created are flexible stable and a friendly interface;
- Modularity – allowing selective and economical utilization, adaptability to the subjects' training level.

The scientific content is in agreement with the whole range of criteria in the curriculum, the learning didactic activities being in correlation with the students' training level.
The didactic projection of these informatic expert lessons is in concordance with the methodology of projecting traditional lessons, aiming at correlating the operational objectives with both the learning didactic activities and the evaluation items. Thus, these informatic systems facilitate the teachers' work as far as a continuous feedback is concerned.

The informatic system for Chemistry allows the modeling of chemical phenomena in view of their visualization (due to the animation of the reaction mechanism). In a short time, a big amount of information can be transmitted from teacher to student and vice-versa and consequently a continuous feedback is achieved. By implementing the informatic systems during the class with the students, both the student and the teacher can notice the possibility of global, continuous and initial assessment.
As the result is obtained operatively, the student can benefit from the information, which has not been acquired, and so the educational process is more efficient.

We briefly present here some of the informatic systems that we have created for Physics, Chemistry and Computer Studies:
- BACKTRACKING – Computer Studies
- LIGHT INTERFERENCE – Physics
- ELECTRO-KINETIC ELEMENTS – OHM'S LAW FOR THE ELECTRIC CIRCUIT – ELECTRIC RESISTANCE – Physics
- MOVEMENT OF PARTICLES IN MAGNETIC AND ELECTRIC FIELDS – Physics
- ALKANS - Chemistry