

Inertia between classic and modern spirit seen by GeoGebra

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Abstract: *There is a struggle to integrate the computer in school. This approach must be read: "the integration of educational software in education". This is a related desire to implement new teaching methods in mathematics. An "educational software application" is something that everyone could use on a computer, without having advanced knowledge about computers and programming. Draw, build, unite, investigate properties, change shape and size. Properties remain the same? Why? Can you formulate the theorem from this investigation? Prove it rigorously! Experience should not only be lived, but shared. Recently founded, „GeoGebra Institute of Timisoara, Romania” has promoted activities in order to promote GeoGebra platform among teachers of mathematics and other sciences. One can appreciate that there is some inertia in using methods of classical learning. The role of initiators of romanian institute seems to be difficult. When the action will become more global, our colleagues will accept this software that I called it „The GeoGebra Language” not only as a working method but also as a step in opening of a viable way to exchange ideas, on this beach and the investigations will become constructions of new methods of investigation of science, both for developers, users, educated or educators. This presentation covers some ideas that were developed after the first activities carried out under the GI Institutuli Romania and our strategies in connection with the development of a broad community of users nationwide.*

Keywords: classical methods, modern methods, strategies.

1. The development of information technology

The development of information technology radically changes our way of living, of communicating with the others, of receiving the information. In the future, it is expected that the role of computers in our life become essential; any student will have to master this field in order to achieve easily what he wishes.

Teaching with the help of computers is a modern and active educational method. It depends on each teacher how they choose to use it and how they teach their students to use it.

Using the computer in education presents the advantage of facilitating the passage from a passive accumulation of information by the students to them learning through discovery. As a result, they learn how to learn, thus developing abilities and cognitive strategies that they will use and adapt in other diverse situations. This induces a great flexibility of learning and stimulates students to involve themselves in the educational process and become partners of the teacher.

Using computers in the educational process includes: teaching some lessons of communicating the knowledge; application and consolidation of the newly acquired knowledge; testing the knowledge on a lesson or a group of lessons to observe the efficiency of this type of approach. As for the impact on students, I

consider that they will be more attracted to lessons, due to animation and multimedia content and the examples from real life and virtual simulations catch their attention, helping them to memorise more easily the information on that subject.

Nowadays it is necessary to stimulate creativity and this can be achieved by promoting interdisciplinary approach. Computers facilitate its application by connecting knowledge of chemistry, physics and mathematics for instance.

Taking into consideration the fact that the number of lessons allotted to some subjects has decreased, the use of computers saves time and provides a significant source of information. It also makes the educational process more efficient and students more attentive.

Lessons on computer rise student's interest for school because their imagination is stimulated and they learn through making discoveries. Modelling, a method frequently used in chemistry and physics offers, through the use of computers, better understanding of the notions. Chemical and physical phenomena, even those that can be easily observed in nature, are easier to understand when simulated on a computer.

2. The use of computer in the educational process - advantages and disadvantages

The use of computer in the educational process allows an education based on the intellectual profile of students. Students are set in a situation of rapid communication in an environment that allows massive spreading of contents and a great flexibility of time, as synchronic and no synchronic means of communication are combined.

Using computers in the educational process has both advantages and disadvantages. I will further present some of the former:

- The use of computers allows a high level of individualization of the educational process which can be programmed and used so as to be useful in the creation of different educational situations depending on the students' needs, irrespective of their age;
- It provides a modern and efficient modality of organizing the educational process;
- It develops logical thinking – knowing what to ask the computer to do requires such a superior order of thinking;
- It offers the possibility to develop a sequence of very important educational operations which have to do mainly with the evaluation but also developing students' creativity;
- It offers organized information, according to the curriculum or to the needs of the assisted;
- It offers the possibility to test the learner in order to identify the gaps in the process of acquiring the new knowledge;
- It offers the possibility to simulate processes and phenomena in movement through animated images, supplying experimental demonstrations;
- It stimulates interest for the new, eliminating the risk of the student to get bored or activity to become routine;
- It stimulates imagination and as time passes the degree of intellectual maturity increases, the learner getting directly involved in the process of learning, thus turning from object into subject of learning;
- The appreciation of results and progress is done objectively.

There are, however, disadvantages of this way of organising the educational process, the most evident being a certain deterioration of the teacher-student relation, due to the lack of direct interaction for long stretches of time during the process of teaching of the new content, unlike in the case of the frontal mode of organisation which is most frequently used.

Of the disadvantages brought by the use of computers in the process of teaching, I will highlight the following:

- ✓ The deterioration of teacher's role in the teaching process;
- ✓ Excessive individualisation of learning, which leads to the denial of the teacher-student dialogue and consequently to the isolation of the learning activity from its psycho-social context;
- ✓ The division of contents in small and very well defined sequences leads to an excessive atomisation of the material to be taught, which favours students with an analytical thinking but is unfavourable to those with a global, synthetic one.

However, learning is and remains a social process and experts argue that totally dissolving the study community in favour for the individual study would be a tremendous mistake.

A computer cannot replace a teacher, who remains a live and active presence in the communication with students and this relation cannot be substituted by interactive lessons. The teacher is the factor that brings in their personal and human resources in the educational process, who is fully engaged, with the entire personality, in the teaching process. It is the teacher who establishes a live communication with the students through intuition, empathy, creativity and continuous adaptability to their students, whilst modelling their characters.

3. Educational blog

One of the most exciting tools that have emerged on the Internet in recent years is the blog, an online publishing tool that helps people to easily publish their ideas, knowledge, findings and thoughts. The definition of a blog as a frequent and chronological publication of personal thoughts and Web links reflect the use of a blog as an online personal journal, but when people such as teachers and students, displaying messages on a single blog, it becomes an effective instrument teaching and learning. This article discusses the use of blog as a tool for learning. About 13000 teachers in kindergartens, primary and secondary education, representing 10% of the total number of those in Shanghai and have opened blogs, write observations about the activities of teachers, about performing students, suggestions for online resources, on average, are received by the students just a comment every insemenate. At least we counted over 20 educational blogs. One of the reasons is fear and teachers to discover let too much effort to write a blog to inform you and far it should not be considered in assessing the activity of the teacher. As you know, many people are concerned with education is that we talk about education at school, family, permanent education or other types of education. Publishing work online allow students to make contributions to promoting lifelong learning as a team and develop quality of work. Method blog eliminates many obstacles traditional method by its software simple, minimal training and employment total distributed. Teachers who have used the traditional method could achieve many of their purposes, using blog, with a considerable reduction in overall work. Examples are found in hundreds of visits to <http://matematicaprimar.blogspot.com> .



In this process the computer is an auxiliary used by the teacher, an instrument that modifies the traditional learning system and facilitates access to information.

Mate la gradinita!



From Kindergarten to GeoGebra



Conclusions:

In conclusion, although the use of computer in the learning process stimulates life-learning education, continuous instruction, the desire to become independent, trust in the inner capacity to learn, self-knowledge, discovery of the most suitable methods of study, it must not become a goal in itself, but one of the multitudes of methods to obtain quality learning and a highly efficient teaching and evaluation.