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New Educational Strategy for Information Technology Education

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Abstract: In all spheres of life, developed societies are rapidly performing an increasingly deeper transformation. This is due to the computer-based and communication technologies of high generation.
Some of the most dramatic changes in the field of infinite information concern the quality of the educational system. Schools remain the major centre for the training of high-tech specialists, people with highly developed intellect and creativity, adaptable to new competences and ready to learn throughout their whole working life.

1. Introduction

In this article we examine the new mission of teachers institution, which is fundamental for personable development, aiming at forming intellect and creativity in adolescents. It reflected the main features of modern time: humanism and democratism, individualism and socialization, high-level of communication and educational adaptation, professional mobility and commitment toward solving of global problems. In order to be fulfilled, there are indicated some strategic elements for achieving a change in traditional education and methods for dynamic innovative education during post-modern education.

N. Koleva underlines that "the primary role in determining of interaction of ones, educated with the elements of informational environment, must belong to the educational institution (school system, college or university) of virtual education".[3].

The computer is used in the application of IT main instruments. It gives wide oppotunities for professional appearance of the teacher and stimulates children's attention, creating friendly conditions for collaboratively work with the student.

In order to use the wide opportunities of this technical device and to distinguish the computer from other technical devices, used in educational activity, the teacher must know the theory of digital education. The teacher must know how to execute the modern organization of educational process, as well as always to read, well and correct, the attitude of educated ones toward the new technique and technologies.

2. Conducted researches and results

During the past several years many publications have been covered, but just a few of them embraces the problem with accelerating the motivation for education via IT and using of a computer and the Internet in class. Some of the publications in Bulgaria, which include those of Andreev, M.

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"Integrative tendencies in education"[1], Lalov, B. "Extrapolational theory in education"[4], Vasilev, V. K. "The reflexion in knowledge, self-knowledge and practice"[3], Koleva, N. L. "Determines of Individual Information Activity of a Technical Disciplines Student."[5], "The place of virtual component in the structure of informational environment of teacher's pedagogical activity"[6], "Conceptual model of interactive education in technical disciplines"[7]. For conditions of an informational community, the processes of education are in need of new technological operations, which will modernize this education and will turn the school into a desired territory for students and teachers.

The alternative techniques and technologies, inculcated to educational process, are viewed. In conditions of this new technique and executed alternative education, there are made researches with students - junior high school and above age. The results indicates correlational dependence between educational motivation and studying IT skills of education. The choice of forms, methods and strategies for education is declared by the necessity of improving educational effectiveness. As a result, there are different styles of activities formed in students: organizational - 23%, informational - 27%, intellectual - 33%, executorial - 17%, which improve their functional literacy.
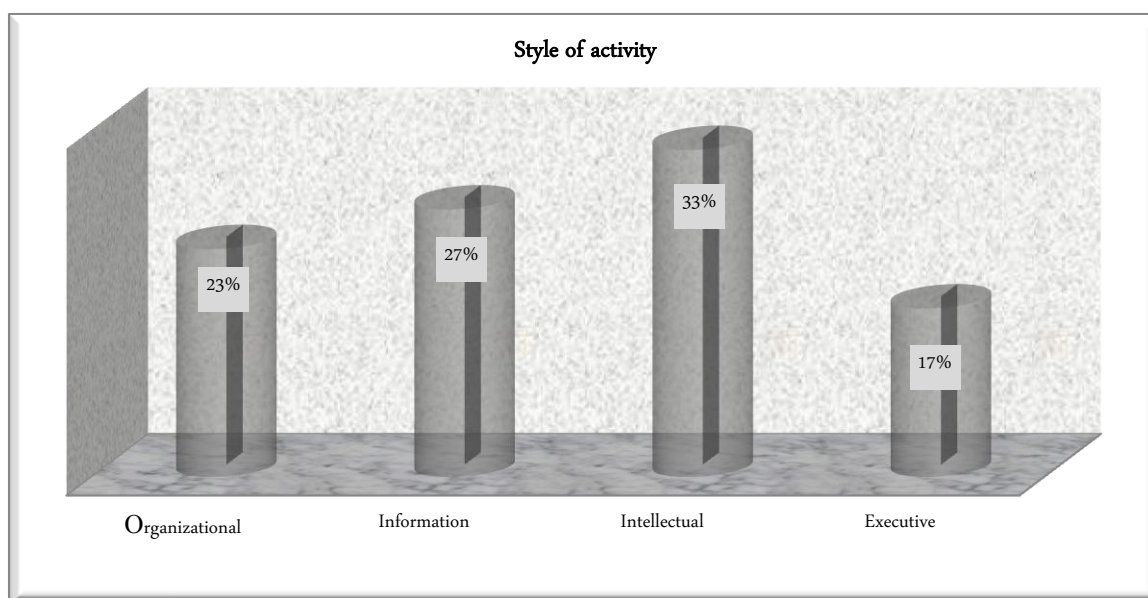
Scheme.1. Methods and strategies for improving educational effectiveness

In the educational process the priority is given to the activity approach. A significant moment to it is determining of educational types, in which skills and competencies are built. Skills and competencies that reflect not just the specifics of subject area's contents, but also the opportunities to form of intellectual, organizational, work, ecological and other skills.

It is needed to search for balance between productive and reproductive methods. The using of research methods' problems, discussions, seminars, role-playing games, etc., is increased. The activity approach is realized mainly using group and individual form of work. Greater emphasis is spent to group work and individual solving of real issues. The change in teacher's position is directed to improving their role as a leader, adviser, partner, who leads, collaborate with students, directs and helps them. The student becomes more individual , personable-motivated, individually-stimulated, self-leading their activity. There is a seacrh for appropriate correlaion between class, group, and individual form of education.

All known forms of control are executed, which improves the role of self-control. The opportunities of A. I. are also used. The students achievements are rated, using a national system, at the end of every educational level.

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The modern educational technology, in combination with informatics and computing technics, offer: a new educational style of students - 44%, education with experimentation - 31%, education with discoveries - 35%

Scheme.2. Educational technogoly, in combination with the use of informatics and computing technics
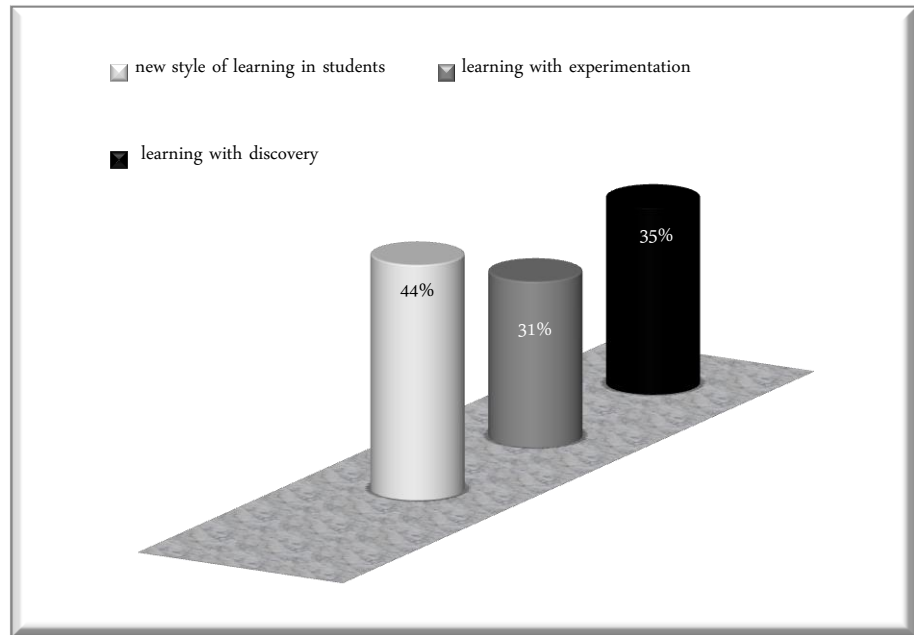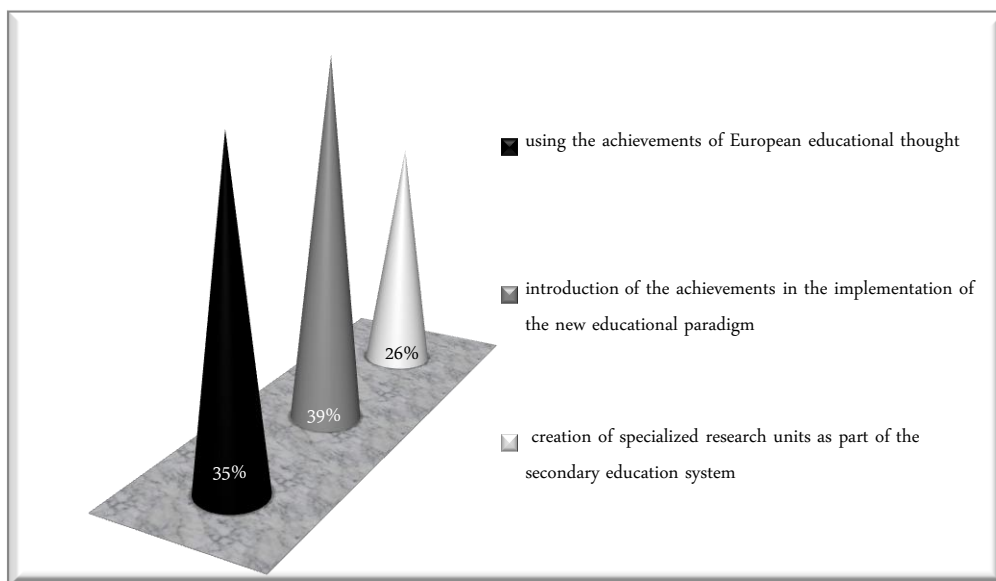
The computer technologies provides new opportunities to search for information, data processing, modeling and resaerch of different situations to direct to hypotheses, preserving or processing information, including via telecommunications networks.

The school of 21st century needs new conditions for competitive scientific and informational securing of managing and modernization of educational system.

In a survey including 137 teachers, teaching in schools for foreing languages and professional school in Burgas, we can see their rate of different segments of scientific and informational securing system:

⇨ selective using of the achievements of the European and world educational thought - 35%

⇨ indulcating the achievements of university science during the realization of the new educational paradigm - 39%

⇨ creating professional scientific unit as a part of the secondary educational system - 26%

Scheme 3. Results from a survey with teachers

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That means the managing and modernization of the secondary education need specialized, executed stationary scientific and informational units, with mobile structures and limited permanent scientific potential for scientific-experimental, executed-indulcating, and informational-research activity. During the past few years the IT enter the educational programmes, in particular the adolescents study Power Point, Excel adn other applications. According to experts, what's important is that they can use such products at work and be creative, after they finish school.

The necessary tools for modern computer education are also available - from system like Scratch, where students can build their own programme, to Raspberry Pi for base training. So, we can show the easy ways for teachers from elementary education to inspire their students to acquire IT skills.

According to a research, made by My Kinda Crowd, almost 3/4 or 75% of the teachers are not confident that they have the necessary knowledge to teach IT in accordance with the new educational plans.

More than the half of them - 54% admit that their students are better trained in computers and programming that themselves; and 96% of them expect support from the business - to acquire and sustain the IT skills.

"Each industry becomes more and more dependent of the IT, coding and similar skills" is what William Ackerman comments, encouraging the companies to collaborate with schools and students.

3. Conclusion

The creating of new pedagogical conditions - executing different methods via computer IT, builds a base of new professional ideas. Finding new effective methods and strategies for educational activity, leads to mastering the structural components of educational process, and to study and creativity motivation. Each teacher can find the appropriate methods for individualization of education in IT conditions, to help development the brainwork, when they take into consideration students' interests, wishes, and characteristical specialities.

The practical meaning of research is as follows:

✓ The pedagogical conditions for development of educational strategy - positive motivation to study in elemntary education.

Teachers develop and execute, in their pedagogical practice, primary methodology for education of positive adjustment for education, and support development of traditional extracurricular educational algorithms.

Some directions of development of positive motivation are worked out, which can be increased by the IT and the using of the Internet during educational process. The purpose of such education is both process - teaching and studying, to pass together through time.

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