

Application Of Computer Technologies In Innovative Educational Activity Of A Teacher

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Summary

The article provides a brief analysis of modern innovations educational technologies in the professional activity of a teacher (distance learning, blended learning, intelligence maps, cloud technologies) and covered at the theoretical level. The article deals with the theoretical and methodological foundations of innovative approaches in the modern education system. The issues of pedagogical support in the modern educational process, new approaches to the problem of the quality of education and assessment of knowledge, problems of management and educational management. Special attention is paid to the study of practical technologies of professional teacher training and activities and innovative areas of professional training specialty students.

Key words:

higher education, competencies, education system, information competence, computer technology

1. Introduction

Innovative activity of the teacher includes various directions of practical activity, computer technologies in this direction are considered to a greater extent today. Computer technology (CT) is very convenient and mobile in preparation for lessons, as well as in class. These technologies can be applied both in the CTO system or by means of ICT.

The relevance of CT is that it is possible to use various visual and analytical resources in lessons. Requirements for school graduates today are very high, language competence is one of the most important competencies formed in lessons. When teaching, the teacher needs to create such conditions that students actively use CT - this is a simple and quick way to prepare a project or study. For example, the use of electronic dictionaries provides opportunities for the development of a general culture of speech, literacy, erudition.

CT scans are more abundant and effective as part of the lesson and the implementation of projects, homework,

because there is always a convenient interface and quick search to help. It is also necessary to allocate also energy consumption for searches, complexity of finding the necessary information.

As part of a person-centered approach, it is possible to apply project or research technologies in working with CT in the direction of innovation.

1. Overview of the main issues on the research problem

Recently, the achievements of scientific and technological progress are accompanied by radical changes in various fields, including education. Today, the reserves of growth of efficiency and quality of schoolchildren's training, based on the use of "verbal-book methods of influencing students based on traditional teaching aids" are actually exhausted [7].

A person's speech is determined by his level of literacy, education and situational use, sensitivity.

Information is a set of symbols, information can be conveyed both by pictures and by words. Information can have positive or negative connotations depending on the goals. Information can be dangerous when it contains elements of extremism, manipulation, neurolinguistic programming. There are many incomprehensible words on the Internet, and it is necessary to turn to dictionaries so as not to be in an unpleasant situation, quoting something on your page on the Internet or in SMS chats.

The Internet is a special communicative environment because the information in it spreads instantly in different forms and directions. Today, a person must have the ability to process large amounts of information and be able to extract key information from the flow of electronic media. It is necessary not only to critically comprehend the information, but also to know the proven resources, to be able to use hypertext and the correct search for information.

In modern society it is impossible to abandon the network, because the Internet helps a person to adapt and systematize knowledge about the world: social networks contain interesting news resources, contacts, audio

materials, there are learning platforms for children, which help to learn something new, and it is possible that a person, due to his limited abilities, requires distance learning at all. Although the Internet is full of advertising, entertainment sites, but idle existence, may be in its absence in humans. On the Internet, people can find books, movies, information about their hobbies, watch TV and save information, we can communicate with relatives and friends, away from them, via mail, Skype and social networks, so the communicative environment of the Internet is necessary for modern personality.

But the difficulty arises in the fact that in the network the language lives by slightly different laws, borrowings from other languages (mostly English, youth slang and computer slang), the arrival of jargon in literary language, mixing styles, poor syntax and punctuation - all this forces think about the quality of language in electronic resources. If, while we use the Internet, watch news and entertainment resources, use social networks, we do not forget to read classical world literature, visit theaters and museums, the true language will replace non-literary norms in thinking, and the Internet with its simplified communicative system will only by accepting the comprehension of new information for the development of a diverse personality.

2. Theoretical Consideration

So, CT gives the following benefits in training:

Informatization of education.

CT scans are divided into teaching aids, simulators, information and reference resources.

Forms of implementation are as diverse as possible in CT (laboratories, simulators, workshops, games, quests, tests, graphics, multimedia, intellectual reference books, encyclopedias).

CT must correspond to age, didactics, curriculum.

2. Methods of teaching through the use of computer technology

Only when working with CT can students gain skills in working with new technologies, this involves information education and critical understanding of information.

An important component of CT - feedback, interactivity in communication.

Today, the modern lesson must meet the new requirements and trends of the time: the remoteness and informativeness of the process gives more opportunities for each student to reveal himself individually.

CT provides opportunities to configure different types of lessons using other technologies. You can use various simulators, tests, presentations, tables, graphs, diagrams, distance learning and much more.

But in practice there may be difficulties with the information culture of students and their parents, with the degree of exposure to work with CT.

Pros of using CT [2]. :

feedback,

informativeness of the process,

individualization of style of tasks and work,

vision of each student and classroom system,

tracking of individual thematic groups of tasks.

Cons of CT [2]. :

the teacher himself needs to have a high level of knowledge in the field of ICT and CT,

it is necessary to use the differentiation of learning,

it is necessary to correctly distribute the burden on children,

to look for methodical material,

take into account the peculiarities of health and development of each student.

Visualization helps the teacher to form motivation to learn with the help of CT: in this case we can see the dynamics in the material, see different time frames.

All that you have said gives purposeful and systematic use of CT in combination with traditional teaching methods.

The lesson with the use of CT has its own features [4]:

- individual level of the student;

- at any time the teacher can correct the material;

- interactivity;

- forms of individual and group work;

- psychological comfort;

- health of the student.

Today we know what a "digital school", "high-tech educational environment", "information space" is. High-tech environment of the institution: website, computers, interactive whiteboards, computer equipment, ICT and CT tools, wireless technologies, local area network. From the point of view of pedagogy, not one, even the most perfect and advanced means of learning cannot be used 100% as an effective means of learning.

For each of the tools there should be a place in the section and in the lesson to ensure a harmonious education. The computer gives system.

We also see that the CT system has a system-activity approach. CT "gives the opportunity to differentiate tasks, the student sees his active role in learning, there is an opportunity to go online to libraries, museums" [3].

In a modern school there should be lessons with the use of CT, it gives great opportunities for the creative potential of both teachers and students, as well as expands the boundaries of information, knowledge and learning space.

Increasingly, the teacher encounters examples of the fact that due to lack of motivation to learn, students can not:

Cover huge amounts of data (exercises, rules).

Reduce the time spent searching for the necessary information on the topic.

Provide a deeper understanding of a complex data set (the ability to build clusters, concisely build charts and tables).

4. Display the relationship between the data (understand the historical and literary subtext and levels of language).

5. To consider a set of data from different points of view simultaneously (to establish interdisciplinary connections with other kinds of art, English).

3. Characteristics of the main innovative methods of computer technology

There is a decrease in interest in subjects, which forces us to look for new approaches to solving the problem of fading interest in the humanities.

Methodical conditions of work with CT are [6, 8]:

age appropriate,

emotionality,

level of text comprehension,

consistency, logic,

systematicity,

didactic tasks,

reading books and dictionaries.

For CT technology to be effective, you need to use different teaching methods and techniques:

projects, research,

visualization,

kinesthetics,

audio information,

group work,

individual,

paired

Types of lessons and different forms of learning are also important for effective interaction [7, 9]:

exhibitions,

games,

quizzes,

oral journal,

cases,

mental maps.

CT scans are also needed when preparing homework:

messages,

projects,

presentations,

dictionary articles,

newspapers,

reports

participation in Olympiads and competitions,

work with vocabulary words.

The method of working with children is built in the direction of personality-oriented interaction with the child, the emphasis is on independent experimentation and exploratory activity of the children themselves, encouraging them to be creative when performing tasks.

A special role in the formation of meta-subject results of students belongs to the research approach in teaching. Research approach in teaching serves as a technological basis. The research approach in teaching is a way of

introducing students to the methods of scientific knowledge, an important means of forming their scientific worldview, developing thinking and cognitive independence. The functions of the research approach in teaching include: education of cognitive interest; creation of positive motivation for learning and education; formation of deep, strong and effective knowledge; development of the intellectual sphere of the individual; the formation of skills and abilities of self-education, that is, the formation of ways of active cognitive activity; development of cognitive activity and independence.

The research approach in teaching is a way of introducing students to the methods of scientific knowledge, an important means of forming their scientific worldview, developing thinking and cognitive independence. Socio-pedagogical effects of the research approach in teaching are realized through its functions [1]. This approach has the following essential characteristics: the introduction of general and particular methods of scientific research into the process of educational knowledge at all its stages (from perception to application in practice); organization of educational and extracurricular scientific and educational, search and creative activities; actualization of meta-subject, intra-subject, inter-subject and inter-cycle links; complication of the content and improvement of the procedural aspects of cognitive activity; changing the nature of the relationship "teacher - student - group of students" in the direction of cooperation [2, 10].

The content basis of the research approach in teaching is the relationship between the content of the studied material, methods and forms of teaching, organizational forms of educational work. Its procedural basis is scientific and educational, search and creative (project) activities that contribute to organized assimilation of the experience of creative activity and creative assimilation and application of knowledge.

The research approach in teaching helps the student to see the harmonic connections between disparate phenomena and facts, a picture of nature as a coherent whole. The structure of the research approach in teaching includes inductive and deductive, heuristic and research methods; techniques and means of stimulating learning, as well as general didactic techniques: analysis and establishment of cause-and-effect relationships; comparison, generalization and concretization; hypotheses; transfer of knowledge to a new situation; search for an analogue for a new solution to the problem, proof or refutation of the hypothesis; study planning; decor the results of the study [3, 11].

Socio-pedagogical effects of the research approach in teaching are determined by the application of methods of scientific activity in the process of educational cognition. This puts the student at an accessible level in a position that requires not only the assimilation of ready-made

knowledge, but independent research: the student's cognitive activity approaches the research activity of a scientist - from putting forward a hypothesis to proving or refuting it. The subjective novelty of student research does not detract from its importance for the development of cognitive forces and formation of an active life position of the student, his further socialization [12].

It is the research approach in teaching that makes students creative participants in the process of cognition, and not passive consumers of ready-made information, which is a resource guarantee of personal and professional self-development in the future. The socio-pedagogical effects of the research approach in teaching confirm its importance as a technological basis [3], which ensures the innovative nature of this approach in the context of the modernization of modern education.

Educational research and project activities will take place only in the conditions of a research approach in education, which actualizes its innovativeness in the modernization of education. Educational-research and project activities of students ensure the formation of activity (meta-subject) results of students: the ability to understand the goals of project and educational-research activities; the ability to set a goal and organize its achievement; as well as creative (creative) qualities - inspiration, flexibility of mind, tolerance for contradictions, predictability, criticality, having one's own opinion, communicative qualities, due to the need to interact with other people, with objects of the world and perceive its information, perform various social roles in a group and collective [4].

The purpose of educational, research and project activities is the development of cognitive interests, intellectual, creative and communicative abilities of students, which determine the formation of a competent personality capable of life and self-determination in the information society, clearly representing their resource capabilities and ways of implementing the chosen life path. And this also manifests the socio-pedagogical effects of the research approach in teaching.

It is recommended to take into account that the purpose of educational, research and project activities is inevitably related to a variety of tasks, among which the following are especially significant:

- acquisition of knowledge about the structure of project and research activities, ways to find the information necessary for research, about ways to process results and present them;
- mastering the methods of activities: educational-cognitive, information-communicative, reflexive;
- mastering the basic competencies: value-semantic, educational-cognitive, informational, communicative;

- identification of the educational request of students, in order to determine the priority areas of research activities;
- development of a system of project and research activities within the educational space of the school;
- development of recommendations for the implementation of student projects;
- creation of a system of criteria for evaluating works, awarding and rewarding winners;
- creation of optimal conditions for the development and realization of children's abilities.

In pedagogical practice, teaching and research and project activities are implemented on the basis of the principles of integrity, continuity, intersubjectivity, metasubjectivity. At the same time, integrality is considered as the unification and mutual influence of educational and project activities of students, when the experience and skills gained in the performance of research and creative work are used in the classroom and contribute to the improvement of academic performance and the development of the psychological sphere; continuity is a process of long-term professionally oriented education and upbringing of students; interdisciplinary learning, in which immersion in the problem involves a deep systematic knowledge of the subject and broad erudition in

different areas, is aimed at developing the skills of research work; meta-subject results are a prerequisite and a resource for socialization in the future.

in terms of educational research and project activities, formulates the expected results when the graduate learns: to plan and carry out educational research and educational project using equipment, models, methods and techniques appropriate to the problem under study; select and use methods relevant to the problem under consideration; recognize and pose questions, the answers to which can be obtained through scientific research, select adequate research methods, formulate conclusions arising from the study; use mathematical methods and techniques - abstraction and idealization, proof, proof by contradiction, proof by analogy, refutation, counterexample, inductive and deductive reasoning, construction and execution of the algorithm; use such natural science methods and techniques as observation, problem statement, putting forward a "good hypothesis", experiment, modeling, the use of mathematical models, theoretical justification, establishing the limits of applicability of the model / theory; use some methods of obtaining knowledge that are characteristic of the social and historical sciences: problem statement, surveys, description, comparative historical description, explanation, use of statistical data, interpretation of facts; clearly, logically and accurately express their point of view, use language tools that are adequate to the problem under discussion; to distinguish facts from judgments, opinions and assessments, to be critical of judgments, opinions, assessments, to reconstruct

their foundations; to see and comment on the connection between scientific knowledge and value attitudes, moral judgments in obtaining, disseminating and applying scientific knowledge.

In terms of teaching and research and project activities, he also formulates the expected results when the graduate gets the opportunity to learn: independently conceive, plan and carry out educational research, educational and social project; use conjecture, insight, intuition; use such mathematical methods and techniques as enumeration of logical possibilities, mathematical modeling; use natural science methods and techniques, such as abstraction from incidental factors, checking for compatibility with other known facts; use some methods of obtaining knowledge, characteristic of social and historical sciences: questioning, modeling, search for historical samples; use some methods of artistic knowledge of the world: a holistic reflection of the world, figurativeness, fiction, organic unity of the common special (typical) and individual, originality; purposefully and consciously develop their communication skills, master new language means; be aware of their responsibility for the reliability of the knowledge gained, for the quality of the completed project.

It is recommended to take into account that the goals and objectives for the need to implement both in academic work and through extracurricular activities. Under the teaching and research activities of schoolchildren is understood the process of solving scientific and personal problems, which has as its goal the construction of subjectively new knowledge. Teachers are encouraged to use pedagogical technologies in the classroom based on the use of a research approach in teaching and other research technologies.

The research activity organized by the teacher in the classroom has the most direct impact on extracurricular work in the subject. It is known that the lesson does not always provide an opportunity for a detailed and in-depth understanding of facts, phenomena and patterns. A logical continuation of a lesson or a series of lessons on a topic can be any form of scientific and educational, search and creative activity during extracurricular time (scientific and practical conference, quizzes, competitions, olympiads, debate clubs, creative workshops, competitions of social projects), material to which the works serve students completed as educational projects or independent research. It is recommended that teachers introducing a research approach in teaching (methods, techniques, forms of research teaching) take into account some issues from the theory of this problem in their practical pedagogical activity. Exploratory learning is a system of techniques, methods and forms of learning that model the main stages of the research process: problem statement, collection of material, comparison of existing methods of analysis,

actual analysis of the material, generalization, presentation of the material.

The purpose of research training is the development of analytical thinking, the ability to see the logical relationships between facts, the formation of skills for synthesizing a new information based on the analysis of primary sources. In exploratory learning, the emphasis shifts from the acquisition of knowledge to the development of personality and thinking. Exploratory learning is implemented not in the content of learning, but in special ways of learning - approaches, methods, techniques and forms that have a basis in problem-based learning, i.e. Students, faced with the contradictions of scientific knowledge, learn how to solve them.

The purpose, tasks of research training require the practical application of active methods, among which the most significant problematic conversation, heuristic (search) conversation, educational research. It is recommended to consider the general characteristics of these methods.

Problem conversation is a method of presenting the material in which the teacher's monologue is interspersed with discussions provoked by his problem questions.

The teacher effectively realizes the goal of a problematic conversation if: he explains the material in the form of a dialogue on pre-conceived problematic issues; for each a problematic question, students express a variety of ideas and hypotheses, the addition of a friend's answer is encouraged; provides a joint analysis of the proposed hypotheses, selection of 2-3 most true and essential; authors are invited to argue them, the audience either finds a weak point in the argument, or comes to the conclusion about fidelity of the statement; in conclusion, the teacher offers a terminologically precise formulation of the judgment.

A heuristic (search) conversation is a system of logically connected teacher questions and student answers, as a result of which students synthesize new ones for themselves knowledge. The teacher acts pedagogically appropriate if: presents a chain of analytical questions that break the learning problem into a series of small problems, accessible to students; carries out fixing the results of solving these minor problems, their logical combination to build new knowledge - the solution of the primary educational problem.

It is recommended to take into account that in the heuristic (search) conversation, the facilitator function of the teacher is actualized, whose task is not to impart knowledge, but to help students to discover and verbalize knowledge, reach a new level of generalization. It is advisable to use tasks for the development of the logic of thinking, the purpose of which are deciphering and compiling cryptograms, labyrinths, exercises for comparison or opposition. It is recommended to highlight in the mass of educational information semantic elements,

solving non-standard problems, drawing up logical chains, etc. It is important to consider that solving paradoxes and non-standard tasks develops the ability to think outside the box.

The innovativeness and socio-pedagogical effectiveness of the research approach in teaching require taking into account the following most important mechanisms for effective teaching and research activities of students: creating a creative atmosphere, motivating interest in research, design, and creative activities; initiation and comprehensive support of search, research, project activities; support of research and project activities; creation of conditions for support, implementation and dissemination of the results of activities.

Conclusions

The process of working with CT has the following components: perception, understanding, forecasting, interpretation, extracting the meaning of information, evaluation of what is read.

When working with CT, the pedagogical principles underlying the following technologies were taken into account:

- algorithmization technology,
- visualization technology,
- case technology,
- technology for the development of critical thinking,
- technology of cooperation.

Innovative pedagogical technologies are interconnected, interdependent and make up a certain didactic system:

- awareness of practical and mental operations;
- systematization of operations and knowledge;
- penetration into the structures of objects and phenomena of the external world;
- fostering the habit of thinking about the rationality of different ways of acting.

CT - the widest opportunities for various aspects of learning:

several channels of perception are used simultaneously;

ability to simulate experiments;

visualization of abstract information;

process dynamics;

cognitive structures develop: students independently interpret various subjects of study.

The teacher needs to use CT in lessons, as it contributes to: better implementation of visibility and accessibility; time efficiency; creating problem situations and updating project activities.

The most important condition for the practical implementation of the research approach in teaching is the formation of a research culture of students, which will allow students to master intellectual technologies that are independently applied in all academic subjects, in relation to any content.

Teaching students the beginnings of scientific research is possible and quite feasible through a lesson, additional education, defense of projects and abstracts, scientific and educational and search and creative activities with the systematic application of a research approach in teaching.

It is very important to take into account that the process of teaching the principles of scientific research is a step-by-step, age-specific, purposeful formation of all components of a student's research culture, including: mental skills and abilities: analysis and highlighting the main thing; comparison; generalization and systematization; definition and explanation of concepts: concretization, evidence and refutation, the ability to see contradictions; skills and abilities to work with a book and other sources of information; skills and abilities related to the culture of oral and written speech; special research skills and abilities.

The new generation of federal state educational standards for general education actualizes the role of productive technologies that ensure the effectiveness of the educational process and the formation of competencies. It is proved that the research approach in teaching, not being a universal pedagogical tool, performs many tasks of developing the creative potential of children, thereby contributing to the achievement of the state task of forming a new generation of competitive specialists based on high-quality school knowledge.

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