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FORMATION OF ICT COMPETENCES IN TEACHING OF THE SUBJECT «INFORMATICS AND ICT» AT SCHOOL

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ФОРМИРОВАНИЕ ИКТ КОМПЕТЕНЦИЙ В ОБУЧЕНИИ ПРЕДМЕТУ «ИНФОРМАТИКА И ИКТ» В ШКОЛЕ

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МЕКТЕПТЕ «ИНФОРМАТИКА ЖӘНЕ АКТ» ПӘНІН ОҚЫТУДА АКТ ҚҰЗЫРЕТТІЛІКТІ ҚАЛЫПТАСТЫРУ

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Annotation

The article describes the process of formation of information and communication technologies of school students. The competencies that the teacher and students should possess are considered. The role of ICT in education as a whole, the interaction and interrelation between computer science and other sciences, the main stages of the formation of ICT competencies in the process of learning are shown.

For a modern teacher, ICT competence lies in its ability to apply information and communication technologies to carry out information activities, namely, search for necessary information, its assessment and ability to structure, analyze and use it, and also to create and disseminate information knowledge in various areas activities depending on the situation. The old model of learning management is changing, based on strict control of learning, hierarchy and repetition. The teacher for ICT use in the classroom needs theoretical and practical training to ensure the formation of information competence of students who already know how to independently and actively act, and make decisions, flexibly adapt to the challenges of the information society. Great importance is given to the modern teacher in order to optimize time in the process of obtaining by the student knowledge, reproduction, memorization and their storage at the level of the school system of education.

Key words: Information and communication technologies, informatics, competence, ICT competence

Аннотация

В статье описывается процесс формирования информационно–коммуникационных технологий учащихся школ. Рассмотрены компетенции, которыми должен обладать учитель и ученики. Показана роль ИКТ в образовании в целом, взаимодействие и взаимосвязь между информатикой и другими науками, основные этапы формирования ИКТ компетенций в процессе обучения.

Для современного учителя ИКТ– компетентность заключается в его способности применять информационные и коммуникационные технологии для осуществления информационной деятельности, а именно, поиска необходимой информации, ее оценивания и умения структурировать, анализировать и пользоваться ею, а также для создания и распространения информационных знаний в разных сферах своей деятельности в зависимости от ситуации. Изменяется старая модель управления учебным процессом, основанная на жестком контроле обучения, иерархии и повторении. Учителю для применения ИКТ на уроках нужна теоретическая и практическая подготовка по обеспечению формирования информационной компетентности учащихся, которые уже умеют самостоятельно и активно действовать, и принимать решения, гибко адаптироваться к вызовам информационного общества. Большое значение современному учителю отводится на то, чтобы оптимизировать время в процессе получения учеником знания, воспроизведения, запоминания и их хранения на уровне школьной системы образования.

Ключевые слова: Информационные и коммуникационные технологии, информатика, компетенция, ИКТ–компетенции.

Аңдатпа

Мақалада оқушылардың ақпараттық–коммуникациялық технологияларын қалыптастыру процесі сипатталған. Мұғалім мен оқушылардың өздері ие болуға тиісті құзыреті қарастырылады. Жалпы білім берудегі АКТ рөлі, информатика және басқа ғылымдар арасындағы өзара әрекеттесу және өзара байланыс, білім беру процесінде АКТ құзыреттіліктерін қалыптастырудың негізгі кезеңдері көрсетіледі.

Қазіргі заманғы мұғалім үшін ақпараттық– коммуникациялық технологияларды ақпараттық–коммуникациялық технологияларды қолдануға, атап айтқанда, қажетті ақпаратты іздестіруге, оны бағалауға, құрылымдау, талдауға және қолдануға қабілетті болуына, сондай–ақ оның әртүрлі салаларында ақпараттық жағдайға байланысты қызмет. Оқуды басқарудың ескі моделі оқытудың қатаң бақылауына, иерархиясына және қайталануына негізделген өзгереді. Сыныпта АКТ–ны пайдалану мұғалімі тәуелсіз және белсенді түрде әрекет ететін білімді студенттердің ақпараттық құзыреттілігін қалыптастыруды қамтамасыз ету үшін теориялық және тәжірибелік дайындықты қажет етеді және шешімдер қабылдайды, ақпараттық қоғамның қиыншылықтарына икемді түрде бейімделеді. Студенттердің білімі, көбеюі, естелуі және оларды мектеп білім беру жүйесі деңгейінде сақтау барысында уақытты оңтайландыру үшін заманауи мұғалімге үлкен мән беріледі.

Түйінді сөздер: Ақпараттық–коммуникациялық технологиялар, информатика, құзыреттілік, АКТ–құзыреттіліктер

The development of ICT competence of teachers is one of the priorities in the direction of informatization of education, which allows the transition from the reproductive model of teaching and learning to research methods.

For a modern teacher, ICT competence lies in its ability to apply information and communication technologies to carry out information activities, namely, search for necessary information, its assessment and ability to structure, analyze and use it, and also to create and disseminate information knowledge in various areas of its activities depending on the situation. The old model of learning management is changing, based on strict control of learning, hierarchy and repetition. The teacher for ICT use in lessons needs theoretical and practical training to ensure the formation of information competence of students who already know how to independently and actively act, and make decisions, flexibly adapt to the challenges of the information society.Great importance is given to the modern teacher in order to optimize time in the process of obtaining by a student knowledge, reproduction, memorization and their storage at the level of the school system of education.

A modern student in the 21st century needs to form at the lessons of informatics and ICT, starting from the initial stage of education, skills in searching, selecting, analyzing, synthesizing and evaluating the necessary information for training.

Note that an important key point in the potential of ICT training is the ability of ICT technologies to act as a common network. Therefore, the teacher must be prepared to interact with students in the ICT learning process in order to be able to effectively learn, both individually and collectively. We offer to expand the understanding of teachers, colleagues working in the school. We understand that a modern child, whether he is a preschooler, already has the skills of «communication with a PC» before entering a general education institution. How to apply ICT competence, ICT technology in teaching at school lessons? The teacher in practice must try to think, feel, and behave as if «YOU» are a student. The child inside each of us with joyful excitement watches a series of exciting events that can be actively explored.

Content of ICT competence of a teacher:
– technological (computer awareness as a learning tool);
– algorithmic (awareness of the computer as an executor of algorithms and means of constructing algorithms);
– model (computer awareness as a means of information modeling);

–   research (awareness of computer as a technical means of automating educational research);

–   methodological (awareness of the computer as the basis for creating a technological and – information– teaching environment).

Consider the concepts of competence and competence, ICT literacy.

Competences are the generalized and formed qualities of a personality, its ability to most universally use and apply the acquired knowledge and skills; a set of knowledge and skills that allow the subject to adapt to changing conditions, the ability to act and survive in these conditions.

Competence – a person's special ability to perform a specific action in a particular subject area, including highly specialized knowledge, skills, ways of thinking and a willingness to take responsibility for their actions.

What are their differences?

Competence is the result of education, expressed in the willingness of the subject to effectively organize internal and external resources to achieve the goal.

Competence – the ability to solve problems arising in the surrounding reality, by means of the subject. Competent is a person who is able to practically resolve non– standard, meaningful situations for themselves, using for this knowledge, skills, abilities, experience, etc.

ICT literacy is the use of digital technologies, communication tools and / or networks to access, manage, integrate, evaluate and create information for functioning in modern society**.**

ICT – the presentation of information in electronic form, its processing and storage, but not necessarily its transfer. Information and communication technology is an association of information and communication technologies.

The history of computers and information and communication technologies (ICT) dates back to the middle of the 20th century. From this time on, the process of informatization of various areas of people's activities begins, the formation of an information– oriented society takes place. Problems of the information society is studying the section of computer science, which is called social computer science. Currently, in almost any field of activity, a profession related to information processing, there is its own specialized software, its own information technology tools. What is information technology?

Information technology – a set of mass ways and method so faccumulation, transmission and processing of information using modern hard ware and soft ware.

The best way for a modern teacher to interact with modern students in the classroom is to carry out practical work, computer workshops, solve various tasks – the base of the school's local network, which ensures efficiency and flexibility in decision making.

In our time, the level of development of the country and the quality of life of the population depend on the level of education and computer literacy of people. Requirements for the quality of education are constantly growing. We, the teachers, are well aware that an individual approach is needed in working with students. Consider the concept of ICT competence of the student.

ICT competence – confident possession of students of all ICT skills to solve emerging issues in educational and other activities.

Content of ICT competence of a pupil:

–   integration;
–   control;
–   receiving;

- definition:
- broadcast;
- representation;
- creature;
- evaluation.

The course of Informatics and ICT in the 7–9th grades of the basic school summarizes the formation of ICT competence of students, systematizes and complements the knowledge of students, gives their theoretical generalization, fits specific technological activity into the information picture of the world. It may include preparing a student for a particular type of formal certification of ICT competence. Of course, the structure of the educational process of this course in its ICT component will be very diverse, depending on the already formed level of ICT competence. The spectrum here extends from the complete lack of efficient ICT tools (still taking place in individual schools) and the traditional model of Computer Science and ICT lessons in the «computer class» – the only place where ICT tools are presented that students can use to the modern, appropriate program, which as the main represented in this program. The informatics component, which also contributes to the formation of ICT competence, is more invariant in the course, but also depends on the mathematics and informatics training received by pupils in elementary school and the preceding grades, as well as on practical experience of ICT students.

Conclusion

The role of the computer science teacher can, if he wishes, be complemented by the role of the ICT coordinator, the methodologist on the use of ICT in the educational process, advising other school workers and organizing their advanced training in the field of ICT.

A modern school is a school of high level of informatization, in which all subjects are supported by ICT means, a local network and (controlled) Internet are available in all rooms where the educational process is taking place, teachers and other school employees have the necessary professional ICT competence, technical and methodical services.

Thus, the school informatization affect not only the content of school subjects and tools of the educational process, but also the very life style of its participants, the basics of professional pedagogical work.

The need for informatization of the entire educational process, the formation of ICT competence of teachers and students and the requirement to optimize resources leads to a configuration in which, in addition to equipment, workplaces (mobile or stationary) teachers of various subjects are formed, the number of projectors and screens increases (preferably stationary in the premises of regular frequent use), digital cameras and camcorders, mobile classes with wireless LAN access are added, equipped rooms for independent work of students after school (library reading room, etc.).

We offer to use teachers, teachers, students and not only, ICT technology in the classroom on the subject «Informatics and ICT».

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