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ИНФОРМАТИКА КУРСЫНДА ДЕРЕКТЕР ҚОРЫН ОҚЫТУ КЕЗІНДЕ БЕЛСЕНДІ ӘДІСТЕРДІ ПАЙДАЛАНУ

Белсенді оқыту әдістері бүгінгі күні мектепте және жоғарғы оқу орындарында оқытудың ең танымал түрі болып табылады. Себебі, бала үшін ұйымшыл және ең сүйікті іс-әрекет түрі ойын болып табылады, сондықтан ойын мен оқу-тәрбиелік үдерісін біріктіре отырып, алдарыңа айтқандай, білім беру мақсатына қол жеткізу үшін үйрету іс-әрекеттерін ұйымдастырудың ойындық түрін қолданып, оқытуға арналған іс-әрекеттерді ұйымдастырудың осы түрін пайдалану қажет. Мектептің информатика курсында «Деректер қоры» тақырыбын зерделеудің негізгі мақсаты компьютер көмегімен деректер қорын құрудағы білімді, іскерлік пен кәсіптерін қалыптастыру болып табылады.

Информатикалық бейіндік курсында деректер қорын оқыту кезінде оқушыларның ақпаратты сақтаудың және қайта өңдеудің әдістері мен құралдары туралы білімінің негізін беріп және сызбалы мәтіндерін қалыптастыру; ертүрлі пәндік салалардағы тәжірибелік есептерді шешу үшін деректер қоры технологиясын қолдануды үйрету; ақпаратты іздестіру және өңдеу әдістерінің негізінде алгоритмдік мәселелерді құрастыру арқылы информатика бойынша білімін тиімділігін және тереңдету, компьютерді оқу және тәжірибелік іс-әрекеттің құралы ретінде пайдалануын тәжірибелік дағдыларын үйрету қажет.

Түйін сөздер: Деректер қоры, коллаборативті информатика, оқыту әдістері, белсенді оқыту әдістері, іскерлік ойын, оқу үдерісі.

Introduction

Active learning methods today are the most popular form of education at school and in high school. The reason for this is that the usual and most desirable form of activity for the child is a game, so you need to use this form of organization of activities for learning, combining the game and the educational process, or rather, using the game form of organizing students' activities to achieve educational goals.

Today, active teaching methods are used in almost all disciplines. Consider the influence of active methods in teaching databases in the course of informatics. Today, the "Databases" have become part of the majority of modern information systems that function on the basis of their accumulation and processing.

This topic has been studied for a long time, and many scientists offer various options for learning databases. For example, V. Vekuler in his article "Basic approaches to the study of the topic" Databases "in the school course of informatics" writes that when working with submission in different forms of the material under study, it is important to take into account the age characteristics of adolescents. In adolescence, from 11-12 years old, formal thinking is developed. The teenager can already reason without associating himself with a specific situation; focus on general messages alone, regardless of perceived reality. In other words, the adolescent can act in the logic of reasoning. [1]

In recent years, European universities have adapted their curricula to the new European higher education space, which implies the use of active learning methodologies. In most database courses, project-based learning is a widely used active methodology, but the authors of "Improving database course learning using collaborative learning methods" face context limitations regarding its use. This article presents a quantitative and qualitative analysis of the results obtained from the use of joint training both within the framework of interdisciplinary and subject-related competencies of the Introduction to Databases course at the Barcelona School of Computer Science. Accordingly, this analysis demonstrates the positive impact that this methodology has had, which allows us to conclude that not only project-based training is suitable for such courses [2].

That is why, there is a need to acquaint students with this concept, and form in them a set of knowledge, skills and abilities, with blocks of structured data. This question becomes one of the key and most difficult in the modern course of computer science of secondary school, and requires a special relationship when studying it. First of all, it is connected with the global nature of the notion "Database", as a type of information systems. In the second place - with the practical application of software processing the database.

In the section of informatics in relation to the topic "Databases" it is noted that the study of the subject area should provide "concepts of databases and means of access to them, the ability to work with them."

The main purpose of studying the topic of "Database" in a computer science course is to create knowledge, skills and abilities to create databases using a computer.

When teaching databases in a computer science course, it is necessary to form a strong and conscious mastery of basic knowledge of the methods and means of storing and processing information in modern society; learn to use database technology to solve practical problems from various subject areas; to consolidate and deepen knowledge of computer science through the consideration of algorithmic problems underlying the methods of searching and processing information; to inculcate practical skills of using a computer as an educational and practical tool.

When planning a course, we set the following three goals:

1. To acquaint students with the theoretical foundations of databases.

2. Teach students how to design a database.

3. To acquaint students with examples of the work of specific DBMS.

This topic concentrates in itself a sufficiently large theoretical and practical material used to effectively solve problems associated with databases and their applications.

When studying databases, it is necessary to come to the following results: the formation of a responsible attitude to learning, readiness and ability of students to self-development and self-education based on the motivation to learn and learn; the formation of a holistic worldview corresponding to the current level of development of science and social practice; the formation of communicative competence in the process of educational, educational research, creative and other activities.

Research methods

The methods that stimulate the cognitive activity of students include active learning methods. They are built mainly on a dialogue that presupposes a free exchange of views on how to solve a particular problem. They are characterized by a high level of student activity.

With the help of active methods, you can effectively solve problems, but their goals and objectives are not limited to them, and the possibilities of active methods are different not only in the sense of "activating educational and training and production activities", but also in terms of the variety of educational effects achieved. In addition to dialogue, active methods also use polylogue (a conversation between several participants), providing multi-level and diversified communication of all participants in the educational process. And, of course, the method remains active regardless of who uses it, another thing is that in order to achieve high-quality results of using active teaching methods, appropriate training of an informatics teacher is necessary[3, 4].

Active database training methods are based on practical orientation, game action and creative nature of training, interactivity, various communications, dialogue and polylogue, use of students' knowledge and experience, group form of organizing their work, involvement of all senses in the process, activity-based approach to learning, movement and reflection.

Due to the current situation of updating the curriculum in schools of the Republic of Kazakhstan, active methods show themselves as high quality and reliable methods of teaching students. One of the most effective active methods is the business game method [3].

The use of this teaching method could have a positive effect on students' progress and interest in the topic being studied. Consider one of the options for conducting classes in the form of a business game.

The goal of a lesson based on active learning methods will be the creation of databases. First of all, it is necessary to make sure that the theoretical knowledge of the students about the databases is sufficient for their application in practice. Students will learn how to use the capabilities of MS SQL Server DBMS to create databases. We will learn how to create databases by solving problems that may arise in a real situation. Imagine that there are three groups of like-minded people here who have decided to engage in three different types of activities, in this case three different types of business:

- Sale of apartments;
- Car rent;
- Search for a four-legged friend.

Next class is divided into 3 groups. Each group will have to develop and create a database for the industry it has acquired, present the resulting software product to the class, protect it, i.e. Give examples of tasks that the created database will allow to solve, prove that its structure is sufficient to meet the needs of clients.

The guys analyze the material proposed by him, analyze the task received and begin designing the database.

Students take their places at the computers and proceed directly to the creation of databases (Fig. 1). The teacher performs the role of a consultant, approaching groups as needed, helping and correcting work directions.

Fig.1 Database creation in MS SQL Server

The students of each group choose their own "captain" who will fulfill the role of the Head. The team leader assigns roles to each remaining team member. For example, this could be an expert, programmer, analyst, and so on. The students of each group choose their own "captain" who will fulfill the role of the Head. The team leader assigns roles to each remaining team member. For example, this could be an expert, programmer, analyst, and so on.

As a rule, in the first stage of creating a database (creating a database structure) all members of a group participate. Headers are defined for fields, their types, properties, as well as relationships between tables (Fig. 2). At the second stage – data entry and editing – part of the group members turns out to be free. They begin to formulate the possible needs of clients, the tasks that the created database will solve. (For example: a client wishes to purchase a two-room apartment on Abai st., Not higher than the fourth floor, but not lower than the second).

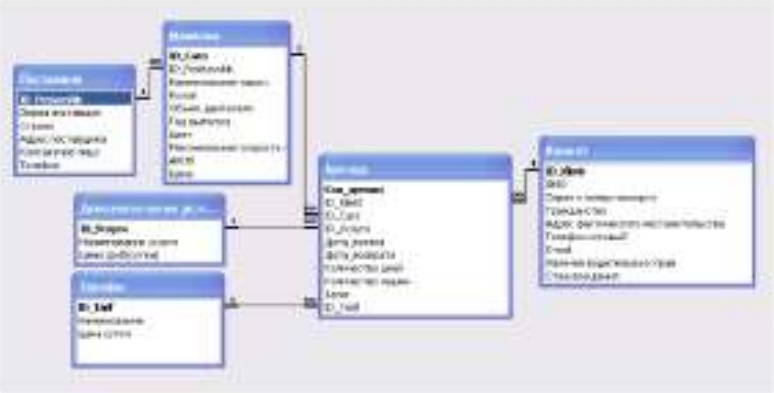

Fig. 2 Definition of table links, field names and their titles

Protection of the work takes place as a team with the performance and presentation of its database. For the performance is given 5-7 minutes. The task of other groups is to articulate the needs that customers may have, but the presented database will not be able to solve. Theoretical questions may be asked on the topic: "Databases". As a result of the discussion, there are suggestions for improving this database.

The teacher assesses the participants in each group based on the percentage of each person's participation in the practical part and activity at the reporting stage of their own group and groups of opponents. This training method is very widely used in a foreign study program. Using it in our computer science training program, and in particular to databases, can contribute to the manifestation of the desire and desire to study computer science from students. Also, active teaching methods contribute to the development of teamwork skills, teach to take responsibility for their comrades, develop an interest in the topic based on personal desire to learn the discipline, rather than on the basis of compulsory education, and the most important thing is developing complete independence from the student [6, 7].

Results

In the course of the study, the plan for conducting one of the lessons of informatics devoted to the study of databases in the form of a business game presented in this article was developed. As a result, we can say that the effectiveness of the process and learning outcomes using active methods is determined by the fact that the development of methods is based on a serious psychological and methodological basis.

Directly active methods include the methods used within the educational event in the process of its implementation. For each stage of the lesson, their own active methods are used to effectively solve the specific tasks of the stage.

During the study, the following results were obtained:

1) Developed lessons using active learning methods. When using active teaching methods, and in particular the business game of creating databases, where students learned about the theoretical foundations of databases, learned how to design databases, and got acquainted with examples of the work of specific DBMS.

2) It was revealed that when using active learning methods, a responsible attitude to learning, readiness and ability of learners to self-development and self-education is formed on the basis of motivation to learn and learn; the formation of a holistic worldview corresponding to the current level of development of science and social practice; the formation of communicative competence in the process of educational, educational research, creative and other activities.

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ИСПОЛЬЗОВАНИЕ ОБОРУДОВАНИЯ CISCO ДЛЯ МОДЕЛИРОВАНИЯ СИСТЕМЫ ВИДЕОНАБЛЮДЕНИЯ ПО СУЩЕСТВУЮЩЕЙ АРХИТЕКТУРЕ ПРЕДПРИЯТИЯ

Аннотация

На сегодняшний день рынок информационных технологий предлагает разнообразные наборы решений по автоматизации и оптимизации производственных процессов. Совокупность таких решений постепенно превращается в целостную систему, которая состоит из оборудования и программного обеспечения, поддержки, обучения персонала, аудит и т.д. Исследовательская работа основана на процессе моделирования ИТ-инфраструктуры организации, специализирующейся на подборе оборудования и конфигурирования системы видеонаблюдения предприятия при переходе на оборудование Cisco. Описаны принципы и особенности функционирования системы безопасности, методы организации передачи данных и протоколирования. Изучены методы решения задач средствами существующего ПО. Указаны ключевые рекомендации по аудиту системы и подбору набора конфигурации. Новая модель локальной сети выполнена на эмуляторе CiscoPacketTracer и передана руководству компании-заказчика.

Ключевые слова: система безопасности, данные, информация, видеонаблюдение, система, ip-камера, аналоговое видео-камеры.