CASE STUDY

on the discipline
"Computer science"

Zimina E.I.

Case study on the course "Computer science" - /under the edition of Ayulov A.A., professor, Doctor of Economics, - K.: HTA, 2016

Kokshetau 2016

Content

1. Introduction

1.1. Information about the teacher

1.2. Brief description of the pilot of the target audience and pedagogical context

1.3. A brief analysis of pedagogical problem

1.4. Development of E-learning in HTA

2. Design

2.1. The goals and objectives of a lesson

2.2. scenario description

2.3. Methods and techniques planning to rating of students

3. Development

3.1. Development of electronic materials

3.2. Where the developed materials were loaded?

3.3. How the students were informed about the method of delivery of the material?

4. Carrying out the classes

4.1. How the classes were carried out

4.2. How the communication with students was hold?

5. Rating

5.1. Has student performance improved during the application of a new technique?

5.2. What kind of suggestions, recommendations suggested students

5.3. What difficulties have been in the preparation and implementation of activities?

5.4. What the lessons were learned in the preparation of e-learning course?

5.5. Advice to colleagues who face the same pedagogical situation?

1.Introduction

1.1. Information about the teacher

Name of the teacher	Zimina Yelena Ivanovna
Job	Humanitarian-Technical Academy
Contacts	zimina.77@mail.ru
Faculty	Economical
Department	General education and technical disciplines
Position	Senior Lecturer
Education	Shokan Ualikhanov Kokshetau State University, Physics and Mathematics Faculty, teacher of mathematics and computer science. Kokshetau Institute of Economics and Management, Information Systems Specialist

Disciplines	*Computer science, algorithms, data structures and programming, Programming Technology*
Work experience	*13 years*
Experience in the use of ICT	Experience in the use of ICT: text editors (MSWord), spreadsheets (MSExcel), creating presentations MicrosoftPowerPoint, work with video and audio in MovieMaker, the creation of electronic books in the program FrontPage, AdobeCaptivate
Training	2011 - Case method. preparation and application of technology in the learning process. Almaty. 2012 - Information and communication technologies and distance education. KSU named after Sh.Ualikhanov 2015 - The use of different "e-learning» tools in the educational process of the Academy. HTA 2016 - The use of e-learning tools to improve the efficiency and quality of teaching at a university. E-learning course development technology. HTA

1.2. **Brief description of the pilot of the target audience and pedagogical context**

Educational program	5B050600 «Economics»
Semester	*2 Semester*
Amount of students in a group	*18*
Age of students	*18-19 years old*
Name of discipline	*Computer science*
Form of studying	*Full-time*
Type of studying	

1.3 **Pedagogical problem:** to make lections for fill-time education more interactive, also training materials for distance learning.

1.4.**E-learning development in HTA**

The Humanitarian and Technical Academy has a center of E-learning, which provides organizational, methodological, informational support of the learning process with the tools of E-learning.

Goals of E-Learning center: in order to improve the competitiveness of the university in the educational market to increase competence in the field of information and communication technologies for teachers and students, it means:

1) allow students to learn anywhere and anytime

2) assisting teachers to improve teaching methods, i.e. increasing the diversity of used didactic approaches.

Students have access to the file store, the Academy's website, and information and learning environment Moodle. What was done for the EL stability in the university:

1. Constant development and support of center infrastructure of EL;

2. Increasing staff competence in EL center;

3. The development of training programs for teachers to improve skills;

4. Dissemination of the results of the project at the national and international level

5. Financial encouragement of teachers who engaged in the development of electronic educational resources in the pilot implementation of eLearning in the academy.

2. DESING.

2.1. What goals and objectives of a lesson have you formulated?

Goal: familiarize students with theoretical and practical information, which reflect the main trends of informatics development, maintenance and acquisition of knowledge and skills of students in the use of modern software tools in the subject area, the development of efficient algorithms for solving scientific and engineering problems of mathematical and numerical modeling using modern programming languages, submit the basics of computer graphics, database design, basic concepts of network technologies.

Objectives: teaching students the basics algorithmization tasks, construction of efficient algorithms, basics of programming in high level languages, the study of modern information technology capabilities.

have practical skills of work on the use of modern software, modern computing, communications and transmission systems.

know the basics and prospects for the development of new information technologies, local and global networks.

be able to use this knowledge in the subject field.

2.2 *Scenario description*

Lectures are held in auditoriums, remotely

The component of the course / class	Time	Goals and objectives of education	Electronical tools	Rating
Theme1. *Subject Computer Science. Number systems.* Lectures in the form of presentations, with viewing the educational videos for teaching translation in different number systems.	1 hour	know the basic methods of working with the positional number system, learn how to convert numbers from one number system to another	Electronic resource with video and tests.	points for the answers to the tests offered in the end of the presentation
Theme2. *History development of computer facilities* Lectures, watching a video.	1 hour	To familiarize students with the mechanical original sources, build a chronological sequence of the development computer equipment.	Video, presentation	
Theme 3. *PC tools* Lectures - presentation in which the basic elements of the PC are considered	1 hour	To familiarize with external and internal computer devices in detail.	Video, presentation	Points for tests and crossword
Theme4. **Modern programming tools**. Lecture in a traditional form using presentations	1 hour	To familiarize students with modern software	Presentation with tests	Points for tests
Theme 5. **Computer networks, networking and telecommunication technologies.** Lectures in the traditional form.	1 hour	To familiarize with the basic concepts of network terminology, components LAN (network adapters, network operating systems, network services, and others.) And the requirements for networks.	Video, presentation	Points for crossword
Theme 6. **Introduction to Programming. Basics of algorithms**	1 hour	Learn the concepts: the concept of the algorithm as a fundamental science, ways to describe the basic types of algorithms, to learn the principles of problem solving	Presentation, tests	Points for tests

		using basic algorithmic structures.		
***Theme 7. Basics of information protection.** Lecture in the form of viewing the presentation	1 hour	familiarity with well-known encryption algorithms, skills of software implementation.	presentation	Points for crossword
***Theme 8.** Programming languages.	1 hour	Give a brief overview of programming languages	presentation	Points for crossword
***Theme 9.** The main objects and Windows management techniques .	1 hour	To introduce the basic elements of Windows	Video, presentation	Points for tests
***Theme 10.** Word Text Editor	1 hour	To acquire entering skills, editing, formatting,information while working with text editors, to master the techniques to create tables, lists, drawings;	presentation	Points for crossword
***Theme 11. spreadsheet Excel** Lecture in a form of presentation, with watching teaching video	1 hour	be able to work with MS Excel interface program; master the techniques of auto-cells; know the features of entering the formulas;	Video, presentation	Points for crossword
***Theme 12.** DMBS MSAccess	1 hour	be able to work with diagrams, to use operator conditions properly; use functions for calculations in spreadsheets; master work with macros.	presentation	Points for crossword
***Theme13.** MSPowerPoint.	1 hour	learn how to manage the process of presentation, transitions between slides; installation of the parameters of appearance, display and appearance of the slide work with text, tables, graphics, animation, sound,	presentation	Points for crossword

		video, and Word objects, Excel and the Internet.		
Theme 14. Anti-virus programs. Lecture in a form of presentation,with watching teaching video	1 hour	explore the principles of the anti-virus tools and their use for protection against harmful software effects.	Video, presentation	
Theme 15. Internet ABCs. Material for reading, video	1 hour	to know what services are provided to the user of Internet network; have an understanding of the structure, addressing and transmission protocols in the Internet.	presentation	Points for crossword

2.3. **Planning methods and ways of evaluating students.**

The tests were developed to every lecture, which allow to evaluate how a student had mastered the material, what he or she mentioned, what missed. Also some lectures have elements of game, such as crosswords. The final survey was conducted by using the application Google form.

3. DEVELOPING

3.1. What electronic materials have you developed? (Video, audio, etc.)

While creating e-manual on Informatics in AdobeCaptivate I developed 15 lectures. Electronic textbooks should have fundamental differences from textbooks produced by using printing, namely the possibility of multimedia, the high degree of interactivity, so the development of electronic aids I used videos (videos from websites), animations, interactive elements, tables.

3.2. Where the developed materials were loaded?

Created materials have been uploaded to the file server, and the Moodle educational portal, which designed a content, communicative and evaluative elements.

3.3. How the students were informed about the method of delivery of the material?

About the delivery of materials, students were informed via social networks, via e-mail.

4. CARRYING OUT THE CLASSES

4.1. How the classes were carried: note the positive, in your opinion, moments and the problem (and from pedagogical point of view and from a technical).

Classes were held in specially designed classrooms equipped with interactive whiteboards, monoblock conferencing with connection to broadband Internet and a file server, an interactive whiteboard.

Advantages:

- multimedia technology creates a learning environment with a bright and clear presentation of information, which is especially attractive for students;

- integration of the large amounts of data on a single storage medium;

- the ability to test quickly and efficiently or to check in any other way the knowledge of students.

Disadvantages: The media which is used in large quantities during creating electronic lectures is often redundant. They distract from the main text.

On the technical side there were no problems.

4.2. How the communication between you and the students was held? Communication between me and the students carried out via social networks, via e-mail.

5. RATING: describe the results after an assessment on the following criteria:

5.1. **Have students improved academic performance in the application of a new technique?**

After assessing following conclusions can be drawn:

To say that the performance has improved significantly, I can not yet, but interest in the study of the discipline has increased, soothe performance will improve.

5.2. **What recommendations have students suggested?**

Stadents decided that it is much more easy to assimilate topics, while not only listening, but also watching a video, it's comfortable to recapitulate the lecture

5.3. **What difficulties have you experienced during the preparation and implementation of activities?**

The training process takes a lot of time.

5.4. **What lessons have you learned for yourself and what will you do differently in the future?**

While creating scripts for e-learning, multimedia tools used in large quantities, are often redundant. They are distracting, annoying, do not allow to focus. Expressive means should not replace the substantial part.

5.5. **What advice would you give to colleagues who face the same teaching situation?**

Before the beginning of the development of e-learning program should be examined, it is desirable even to pass the preparatory courses for the development of multimedia educational content with the insertion of more complex interactive elements.

Examine the program Adobe Captivate watching lessons on training sites on your own. The center of E-Learning can help in developing e-learning courses.