

T. I. Apanovych, Tavrida V. I. Vernadskiy National University

**COMBINATION OF TRADITIONAL EDUCATION
AND COMPONENTS OF DISTANCE LEARNING IN THE PROCESS
OF STUDYING THE COURSE “HIGHER MATHEMATICS”**

Apanovych T. I.

Combination of Traditional Education and Components of Distance Learning in the Process of Studying the Course “Higher Mathematics”

The article deals with the harmonious combination of the traditional teaching and distance teaching elements to improve extracurricular individual work of the first-year students of Tavrida National V. I. Vernadsky University in the field of tourism while studying the course of “Higher Mathematics”.

The combination of traditional teaching and elements of distance teaching has the following benefits for students: it contributes to the effectiveness and quality of educational activities, it increases motivation and enhances the activity of learning, it provides an opportunity to study at a convenient time, it facilitates individualization of learning and allows to choose the individual pace of learning, it implements a methodical variety of forms, methods and techniques of training, it increases the availability of education. Such combination also has benefits for teachers: it helps to increase the individual activity of students, develop their capacity for independent learning, build research skills and encourage continuous self-education.

Our work deals with Moodle distance teaching system. Such a choice is caused by a wide range of characteristics of Moodle distance teaching system. Distance course is available on the website of distance teaching of Tavrida National V. I. Vernadsky University. The address is <http://dl.crimea.edu/>.

Key words: distance education, higher mathematics, modern information technologies.

In recent years development of information technologies has made modernization of an educational system an urgent problem. The essence of such modernization is captured in the concept of the distance learning (DL) [2] which, thanks to the Internet as a global phenomenon, covers various strata of society and becomes the most important factor of its development. Such modernization of an education system is of particular importance in Ukraine. According to some researches, in Ukraine about 30% of educational institutions declared that they

already have or plan to organize studying in a distance mode, and Tavrida V. I. Vernadsky National University hasn't become an exception .

Distance learning is a new, specific form of education, different from habitual forms of full-time or correspondence study. It provides training with the use of the computer and telecommunication technologies providing interactive interaction of teachers with students.

There are some definitions of distance learning, we shall consider some of them:

distance learning is the complex of educational services intended for vocational training and retraining with use of the advanced information technologies. Provides broadcasting of knowledge to the person who studies, mainly by means of electronic systems of information delivery, conducting of examination in a workplace (or at home) [5];

distance learning is a way of realization of the training process, based on use of modern information and telecommunication technologies, that allow to carry out training at a distance without direct, personal contact between the teacher and the person, who studies [7];

the system of distance learning (remote education) is understood as a complex of the educational services provided to various strata of society with the help of specialized information-educational environment focused on means of information exchange at any distances [4].

Analyzing publications that concern introduction of distance form of learning, it is possible to draw a conclusion that authors point to peculiar *advantages* of DL (to study according to one's pace, personal features and educational requirements; not to limit oneself in a choice of educational establishments and educational opportunities, irrespective of one's location; to use modern technologies in the course of study, that is to master simultaneously the skills which will be necessary in work; to be able to arrange one's time and studying schedule, and also the list of subjects studied; to study in the most pleasant surrounding that promotes working productivity; DL allows to get an education to people with limited physical abilities and so forth) and

disadvantages of DL (lack of personal contact between the teacher and the student; need for the student to have strong personal motivation, ability to study independently, without continued support of the teacher; lack of possibility of immediate practical use of the knowledge obtained with the following discussion of arising questions with the teacher).

Summarizing the above said, considering the points of view of various authors, we shall define distance learning (training) as new form of education that corresponds to educational standards, which is realized by means of the computer and telecommunication technologies and is capable to satisfy educational requirements for a various strata of society, irrespective of time and a place of their arrangement in relation to educational institutions. Distance form of education suits almost to all because gives the chance to combine study and everyday life harmoniously.

The objective of the article is to show application of elements of distance learning in the organization of individual work for students of tourism specialty when studying the Higher Mathematics course.

Combination of traditional training and elements of distance learning

for students: promotes the increasing of efficiency and quality of studying, increases motivation and activity of training, provides possibility of training in convenient time, promotes an individualization of training and possibility to choose individual pace of training, realizes methodological variety of forms, methods and techniques of training, increases availability of education;

for teachers: gives the chance to increase individual activity of students, to develop in them abilities to independent activity, to form research skills, and also requirement in continuous self-education.

In our work the system of distance learning called Moodle (Modular Object-Oriented Dynamic Learning Environment) was chosen. Such choice is caused by a wide range of Moodle distance learning system characteristics.

The distance course is created according to the author's working program to discipline "Higher mathematics" for first-year students of specialty 6.020107 tourism. Its main objectives are:

- formation of basic knowledge system, of mathematical skills;
- mastering by students of modern distance technologies of training;
- development of skills on use of modern information technologies;
- development of skills of students individual activity.

The distance learning course is located on a distance learning website of Tavrida V. I. Vernadsky National University on address <http://dl.crimea.edu/> (fig. 1).

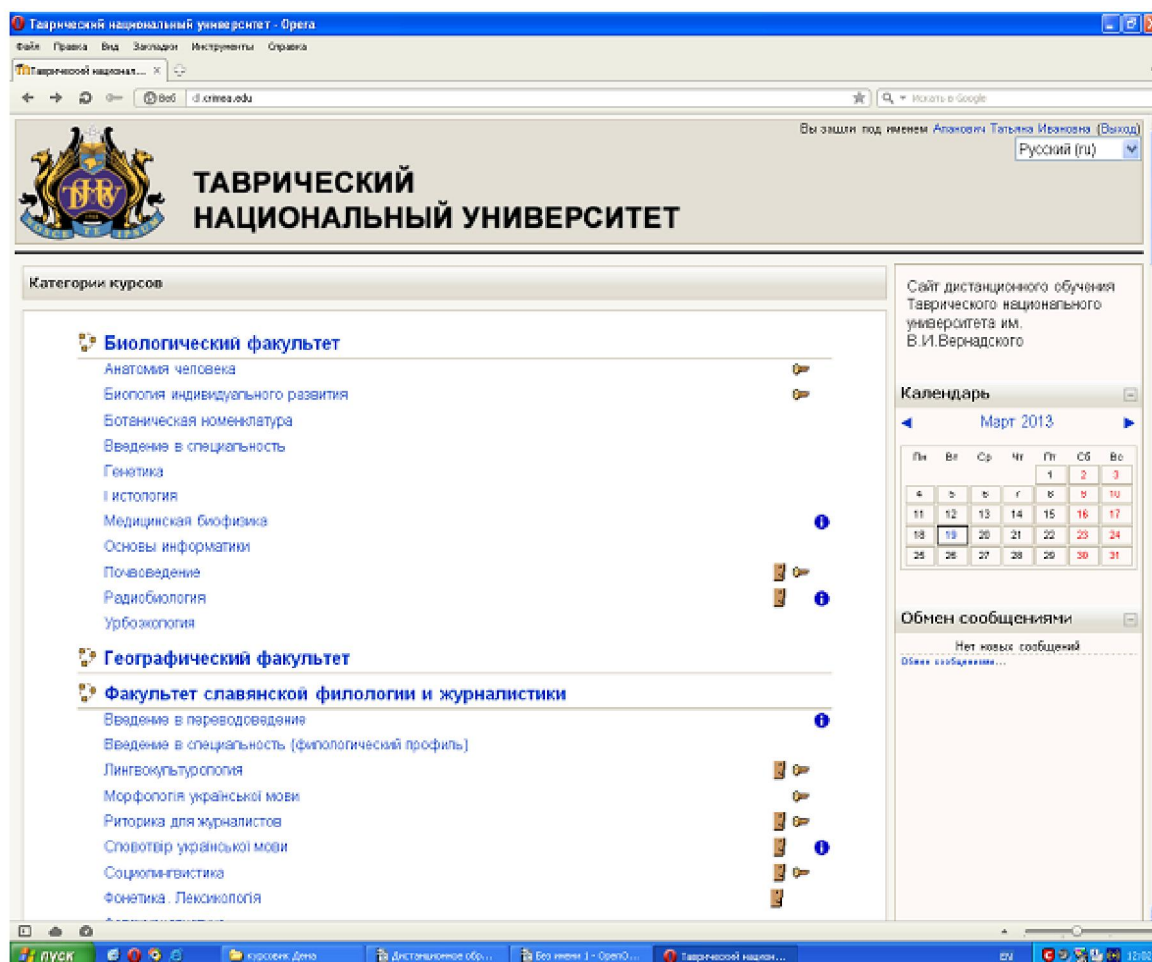


Fig. 1. Distance learning website of Tavrida V. I. Vernadsky National University

In Ukraine there is no unified structure for development of distance learning. In this research we shall adhere to structure of a distance learning (fig. 2) which was offered by N. V. Morse and O. G. Glazunova [3].

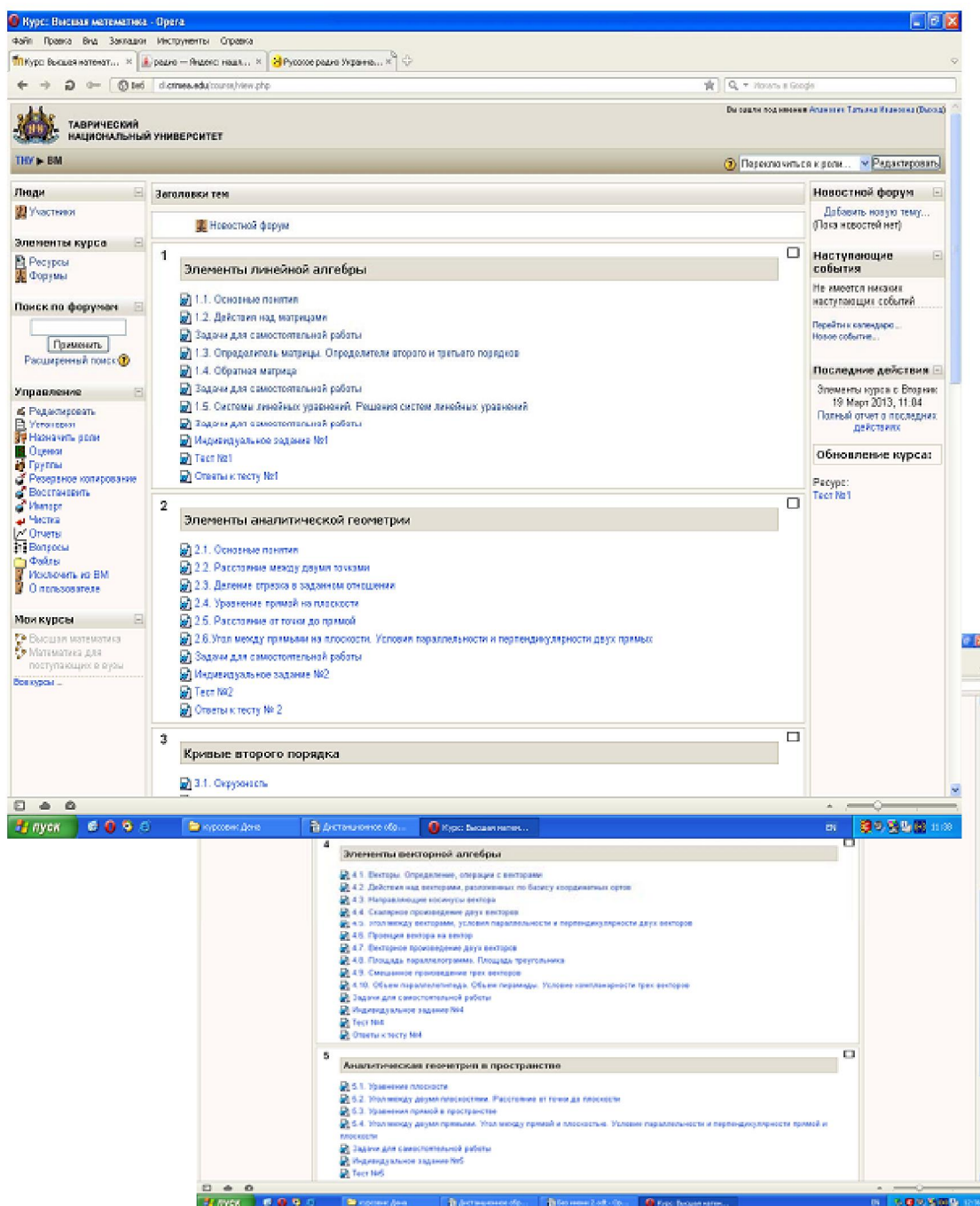


Fig. 2. The structure of the distance course “Higher Mathematics”

Authors of the research suggest to choose modular structure of a distance course as a basis that corresponds the most to credit modular and rating system of training.

Modular structure of the organization of a training material in the distance learning course gives the chance to provide students with the necessary training material united by thematic principle and appropriately structured (theoretical

material, solutions of the main standard objectives, questions, tests, etc.); to organize their individual work (types of independent work, options of individual tasks); carrying out timely current, intermediate and final control (self-checking when processing a theoretical material, test tasks).

The main parts of a distance learning course on Higher Mathematics includes the following components:

- introduction – general information about the course. It contains the purposes and tasks for the course which is studying, the working program, the recommended literature, methodological recommendations and reference materials.

- The main part – educational modules that contain theoretical material, main types of out-of-class individual work on each subject, tasks for control and individual work, test tasks for self-assessment and assessment of the gained knowledge, skills, control questions. Studying of each module comes to the end with modular control in a test form.

- The final part – total certification, that contains control questions to credits and examinations, final test control.

The advantages of distance learning course on the Higher Mathematics are: providing each student with the necessary materials for independent training (lecture material, examples of completing the tasks, control and individual tasks, tests, useful links, Internet resources, etc.), existence of feedback and efficiency of control of out-of-class individual work.

References

1. **Averyanov L. Ya.,** Runov A. V. Sovremennye problemy Internet-obucheniya [Modern problems of Internet studying] // Informatics and education, 2003, N 5. – 70 – 75 p.

2. **“Kontseptsiya rozvitku distantsiynoyi osvity v Ukraini”** [Ukraine Distance Learning Development Concept] Approved by the Decree of the Ministry of Science of Ukraine by V. G. Kremen’ on December 20, 2000 [Electronic resource] – the Mode to access : <http://moodle.bsmu.edu.ua/mod/resource/view.php?inpopup=true&id=998>

3. **Modeli** efektyvnoho vykorystannya informatsiyno-komunikatsiynykh ta distantsiynykh tekhnologiy navchannya u vyshchomu navchalnomu zakladi [Models of Efficient Application of Information-Communicative and Distance Technologies of Studying] [Electronic resource] / N. V. Morse, O. G. Glazunova // Informatsiyni tekhnologiyi i zasoby navchannya [Information Technologies and Means of Studying]. – 2008 . – No. 2 (6). – Mode to access : <http://www.ime.eduua.net6/emg.html>
4. **Ob utverzhdeniyi** Polozheniya o distantsionnom obuchenii. [“On the adoption of Provision on distance learning”]. [Electronic resource] – Mode to access: [http://www.osvita.org.ua/distance/pravo/00.\(05.10.2012\)](http://www.osvita.org.ua/distance/pravo/00.(05.10.2012)).
5. **Slovar** [Dictionary] // [Electronic resource]. – Mode to access: <http://slovari.yandex.ua/~knigi/Okhrana%20truda/Distsionnoye%20obrazovaniye>
6. **Khutorskoy A.** Distsionnoye obucheniyе i yego tekhnologiyi. [Distance learning and its technologies] // Computerra.– 2002 . – No. 36. – Page 26 – 30.
7. **Economic** dictionary//[Electronic resource]. – Mode to access : [http://slovari.yandex.ru/distsionnoye%20obucheniyе%20eto/Ekonomicheskiy%20slovar/Obucheniyе%20distsionnoye/\(23.02.11\)](http://slovari.yandex.ru/distsionnoye%20obucheniyе%20eto/Ekonomicheskiy%20slovar/Obucheniyе%20distsionnoye/(23.02.11)).

Апанович Т. І.

Поєднання традиційного навчання та елементів дистанційного навчання при вивченні курсу „Вища математика”

У даній статті розглядається гармонійне поєднання традиційного навчання та елементів дистанційного навчання для підвищення ефективності позааудиторної індивідуальної роботи студентів першого курсу Таврійського національного університету ім. В. І. Вернадського напряму підготовки туризм при вивченні курсу „Вища математика”.

Об'єднання традиційного навчання та елементів дистанційного навчання

- для студентів: сприяє підвищенню ефективності і якості початкової діяльності, підвищує мотивацію і посилює активність навчання, забезпечує можливість навчання в слушний час, сприяє індивідуалізації навчання і можливості вибору індивідуального темпу навчання, реалізує методичну різноманітність форм, методів та прийомів навчання, підвищує доступність освіти;

- для викладачів: дає можливість підвищувати індивідуальну активність студентів, розвивати в них здібності до самостійної діяльності, формувати дослідницькі уміння і навички, а також потребу до безперервної самоосвіти.

У нашій роботі була вибрана система дистанційного навчання Moodle. Такий вибір викликаний широким спектром її характеристик. Дистанційний курс

розташований на сайті дистанційного навчання Таврійського національного університету ім. В. І. Вернадського за адресою <http://dl.crimea.edu/>.

Ключові слова: дистанційна освіта, вища математика, сучасні інформаційні технології.

Апанович Т. И.

Объединение традиционного обучения и элементов дистанционного обучения при изучении курса „Высшая математика“

В данной статье рассматривается гармоничное сочетание традиционного обучения и элементов дистанционного обучения для повышения эффективности внеаудиторной индивидуальной работы студентов первого курса Таврического национального университета им. В. И. Вернадского направления подготовки туризм при изучении курса “Высшая математика”.

Объединение традиционного обучения и элементов дистанционного обучения

- для студентов: способствует повышению эффективности и качеству учебной деятельности, повышает мотивацию и усиливает активность обучения, обеспечивает возможность обучения в удобное время, способствует индивидуализации обучения и возможности выбора индивидуального темпа обучения, реализует методическое разнообразие форм, методов и приемов обучения, повышает доступность образования;

- для преподавателей: дает возможность повышать индивидуальную активность студентов, развивать у них способности к самостоятельной деятельности, формировать исследовательские умения и навыки, а также потребность в непрерывном самообразовании.

В нашей работе была выбрана система дистанционного обучения Moodle. Такой выбор вызван широким спектром ее характеристик. Дистанционный курс размещен на сайте дистанционного обучения Таврического национального университета им. В. И. Вернадского по адресу <http://dl.crimea.edu>.

Ключевые слова: дистанционное образование, высшая математика, современные информационные технологии.

Information about the author

Tatyana Ivanovna Apanovich – teaching assistant at the Differential Equations and Geometry Department of Tavrida V. I. Vernadskiy National University. Circle of scientific interests are concentrated on features of teaching of Mathematics to humanists, mathematical modeling, application of mathematical methods in information and telecommunication technologies, innovative technologies of control and assessment of knowledge.

The article was received by the Editorial Office on 08.04.2013

The article was put into print on 26.04.2013