European Journal of Humanities and Educational Advancements (EJHEA)
Available Online at: https://www.scholarzest.com
Vol. 2 No. 9, September 2021
ISSN: 2660-5589

APPLICATION OF EQUILIBRIUM-DEVELOPMENT METHOD IN THE TEACHING OF THE SUBJECT "INFORMATION TECHNOLOGIES" IN HIGHER EDUCATIONAL INSTITUTIONS

Zaripova Mukaddas Djumayozovna,
Termez State University
Basic doctoral student of the Department of Information Technology,
Ibragimova Mohigul Komiljon qizi,
Termez State University
Teacher of the Department of Information Technology

Article history:

Received: 8th July 2021
Accepted: 8th August 2021
Published: 22th September 2021

Abstract:

The article is devoted to the organization of the teaching process of "Information Technology" in higher education. Also, scientifically based proposals and recommendations on the use of equalizing and developing methods that allow to fill the gaps in students' knowledge in the process of teaching science have been developed.

Keywords: Adaptation stage, corrective stage, productive-creative stage, purposeful, meaningful and procedural components, equalization-development method.

The current process of globalization requires a high information culture, knowledge, skills and competencies in the use of information and communication technologies, as well as adaptation to innovative conditions in order to work in the development of society. Therefore, the teaching of information technology in higher education is one of the most pressing and priority issues.

The science of information technology is included in almost all educational programs of higher education institutions (HEIs) as a compulsory subject. At the same time, the system of all courses related to information technology consists of courses related to various computer technologies of a general nature. In general education, the course of general information technology, which is usually taught at the beginning of training, is an important link in the system of preparing students to read first, and then to use it consciously and rationally in their professional activities.

Studying the experience of teaching the subject "Operating Systems", "Information Systems", "Information Technology", "Computer Graphics", "Web Programming", etc. in higher education institutions (HEIs), in the education system of foreign and the Republic of Uzbekistan Based on the results and many years of experience, we can see that despite the fact that all higher education institutions still include "Information Technology" as a subject in the curriculum, the methodology of its teaching is not fully formed.

In addition, an analysis of existing teaching practice shows that professors of such information technology courses face the problem that when students start studying the course, there is a big difference in the knowledge, skills and abilities they have acquired in school. The following real facts may be the basis for such a problem [1-4]:

- differences in the material and technical base of schools (the number of computers in the school and, as a ratio between the number of students and computers, the ability of one student to access the Internet, etc.);
- differences in teacher qualifications;
- new information - the emergence of communication technology or a new program, differences in the updating of methodological materials by 5-10% during only one academic year;
- variety of curricula in the course of school information technology (propaedeutic course, basic course, profile course, elective course);
- unequal access of urban and rural students to computer and information technology textbooks, periodicals and personal computers for additional computer learning;
- from the computer at home, in computer clubs, etc. differences in access.

Ignoring this problem by IT teachers in the course of the course leads to the fact that students lag behind others in learning the course and lose interest in science, which in turn reduces the quality of in-depth study of information technology cycles and ultimately prepares a career-oriented higher education specialist. causes the quality to drop. In solving the above problems, it is proposed to consider the use of the method recommended by the authors, ie the method of organizing the process of teaching information technology in higher education, which consists of two complementary components - equalizing and developing parts.

In the equalizing part of the method to overcome the negative attitudes of students who have difficulty in mastering the software department of information technology, to eliminate the gap in knowledge, skills and abilities, and in the developmental part to ensure their progress through the use of information and communication technologies. problems such as developing their attitudes, communicative skills, supporting their interests are solved [5]. In order to successfully solve these problems, students who have just entered higher education and are mastering the subject of information technology can be divided into three groups:

a) low degree;

b) intermediate level;

c) high level.

a) Representatives of the first group. Students with a low level of mastering the subject of information technology will have superficial (with large gaps) knowledge and skills in the field of information and communication technologies. They rarely use this knowledge and skills in their teaching and daily activities, and also use it only for games and entertainment (computer games, chats, chats, work on social networks odnoklassnik). The activities of such students in information technology classes are of a reproductive nature. They need a lot of help from the teacher. They do not realize the need to study information and communication technologies for successful teaching and professional activities [6].

b) Representatives of the second group. There will be special gaps in the knowledge, skills and abilities of intermediate level students in the field of information and communication technologies. In doing so, they will have mastered one or more (in the field of their interest) software products. They use information and communication technologies not only for games, hobbies and hobbies, but also in activities related to their interests, and rarely as a tool in preparation for educational tasks. The activities of such students can be both reproductive and productive, that is, productive only in the areas in which they are interested. In standard cases, they feel confident, but the teacher's help in mastering new material and creative activities will be needed. They understand the need to study information and communication technologies in specific areas in order to carry out successful educational and professional activities [7].

c) Representatives of the third group. High-level students mastering the subject of information technology will gain in-depth knowledge and skills in the basics of information and communication technologies and programming. They can actively apply this knowledge in their daily lives as well as in their teaching and learning activities. They are characterized by the transition from reproductive to productive methods of activity, even learning new software products or applying familiar programs in new interpretations. Such students are not satisfied with the performance of standard tasks and exercises. They strive for productive activity and new types of activities. They understand the need to learn information technology in order to carry out successful training and professional activities.

In the equalizing part of the method, in order to overcome the negative attitudes of students who have difficulty in mastering the subject of information technology, to eliminate the gap in knowledge, skills and abilities, the authors suggests considering the following test in the field of information technology in order to equalize the level. This test should be designed based on the school course program, which determines the level of basic preparation from information technology. (Figure 1).

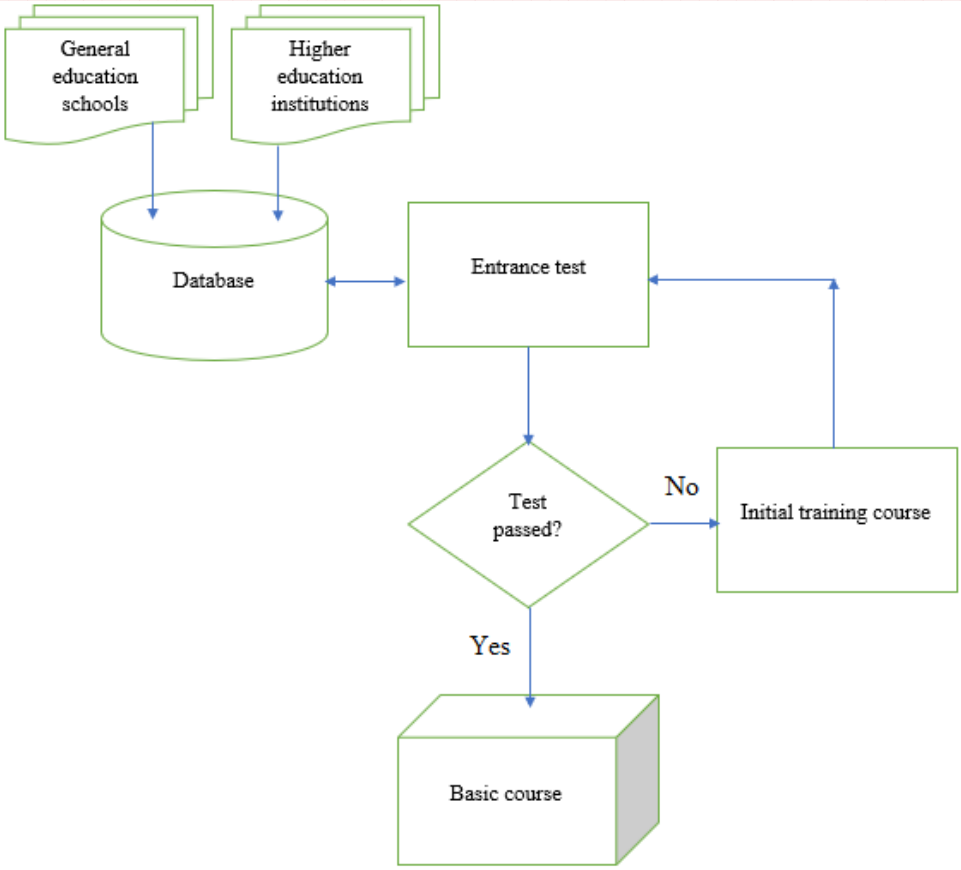

Figure 1. Testing students' knowledge of information technology.

The purpose of the test is to check the knowledge of students in the field of information technology in general secondary education, secondary special vocational education and, if necessary, to organize courses on information technology to equate the level of knowledge of the third group (higher level). This test is important in the equalizing part of the test method.

In addition, based on the analysis of practical experience, it should be noted that students should consider the equalization-development of information and communication technologies as a dynamic process, the logic of which is revealed in the following successive stages: adaptation phase, corrective phase, productive -creative (productive, serunum-creative) stage.

Adaptation (adaptation, adaptation) of students to the methods, forms and means of learning information technology in higher education institutions at the adaptive stage; determination of the level of introduction of students' knowledge on information and communication technologies; it is intended to predict the individual movement paths of students during the course study [5-7].

Improving the formation of students' knowledge, skills and abilities in the field of information and communication technologies on the basis of individual pathways in the corrective phase; it is intended to create a positive impactful background of information technology teaching based on the success status of each student and the individualization of teaching.

At the productive-creative stage, it is intended to generalize the knowledge, skills and abilities of students in independent, creative activities, to develop communicative skills, to expand their worldview.

The method of equal-developmental training of students in information technology in higher education institutions is aimed at solving the problem of large differences in their knowledge, skills and abilities by choosing the content of teaching materials and teaching methods and tools. helps students to successfully master the subjects of the cycle of professional information technology in the future. The method is inextricably linked with the solution of the following components in solving the casting problem:

- target component;
- meaningful component;
- procedural component.

The target component of the method is related to the review of the system of goals, which is determined by the important aspects of the equalizing-developmental parts of the learning process and their stages. The purpose of the adaptation phase is to involve the student in the process of determining and realizing the level of their real knowledge, skills and abilities in information technology, to identify gaps in knowledge, skills and abilities in weak, vacant students, to further develop the knowledge, skills and abilities of good students. is to look for ways [8-11].

The purpose of the correctional phase is to assist weak students in creating and conducting individual projects on the study of information technology aimed at filling gaps in their knowledge, skills and abilities and systematizing the knowledge of strong students. The purpose of the productive-creative stage is to involve students in the independent and creative application of knowledge and skills in information technology in various educational, cultural or professional situations. formation.

The meaningful component of the method is related to ensuring that the equalization-developmental parts of the learning process are implemented based on the two principles of content selection. The non-linear-modular principle of content development assumes that the learning material is divided into modules, each of which is devoted to the study of a separate topic. Nonlinearity allows you to retrieve individual elements of previous modules (in the equalizer section) or to refer to elements of subsequent modules (in the development section).

The principle of universalization of the content of training consists of dividing the training material into five main blocks that allow to master any type of information technology:

1) tasks and functions (function of technology, its functions, types of data to be processed, hardware and software, etc.);

2) basic concepts and objects (invariant to the content of information technology and the option to study information technology, specific software products);

3) specific software product environment (interface, operating modes);

4) typical methods of working with information (basics of data processing in software products, actions, concretization of operations;

5) methods of independent mastering of information technologies (the basis for the search for solutions to new, atypical problems - the basis of the context menu, the uniformity of the interface, the use of data).

The procedural component of the method is related to the selection of training modules that provide for the implementation of equalizing-developmental parts of the learning process.

The advantages of the equalization-development method in teaching the subject of information technology, considered by the authors, play an important role in solving the above-mentioned problems.

REFERENCES:

1. Zaripova M.D. Problems of informatics and information technologies to humanitarian specialties in higher education instituions // Журнал научных и прикладных исследований, 2016, - №12 (47), – С. 135-137.
2. Zaripova, M.D. (2019). Assessment of the quality of education in the higher education system // ISJ Theoretical & Applied Science, 11 (79), - P. 390-392. Doi: https://dx.doi.org/10.15863/TAS.2019.11.79.81
3. Зарипова М.Д. Оценка качества обучения на основе модели Раша // V Международная научно-практическая конференция. «Наука и образование в современном мире: вызовы XXI века». Сборник научных трудов Казахстан. Нурсултан: 2019, - С. 94-99.
4. Зарипова М.Д., Бойматова Д.О. Таълим сифатини баҳолашнинг хориж тажрибаси // Science, Research, Development #25 Economy. Management. State and Law. Berlin: 2020, - С. 42-45.
5. Абушкин Д.Б., Корнилов В.С. Методика выравнивающего и развивающего обучения в вузовском курсе «Практикум решения задач на ЭВМ» // «Математическое моделирование и информационные технологии в образовании и науке» (ММ ИТОН): Материалы V Международной научно-методической конференции, посвященной 25-летию информатики в школе. – Алматы: КазНПУ, 2010. – Том II. – С. 19–21.
6. Фалина И.Н. Методика выравнивающего и развивающего обучения информатике в физико-математических классах: Дисс. … канд. пед. наук. – М., 2000. – 139 с.
7. Забродина О.М. Методика выравнивающе-развивающего обучения информационным технологиям студентов вуза в курсе информатики: Дисс. ... канд. пед. наук. - Волгоград, 2009. - 201 с.
8. Zaripova M.D. Algorithmic model of student knowledge control // Actual Problems of modern Science, Education and Training. – 2020. - №4. – P. 46–51. http://khorezmscience.uz/uz
9. Zaripova M.D. Improving the quality of training of high qualified personnel on the basis of competence level assessment. Journal of Management Value & Ethics. -2021. Jan.-March. 21 Vol. 11 No.01 SJIF 7.201 & GIF 0.626 ISSN-2249-9512. - P. 139-146.
10. Zaripova M.J., Djumaev Z.S., Zaripov J. Technology of designing and realization of computer test for checking the knowledge of students in Visual Basic programming environment. Psychological and Pedagogical Journal, - №2 (22). Tambov. 2013. - P. 111-116.
11. Зарипова М.Д. Компетентлик ёндашуви асосида таълим сифатини таъминлаш ва уни баҳолашнинг математик методлари // Хоразм Маъмун академияси ахборотномаси. Хива: - 2020, - №3 (2), - Б. 94-100.