



Differential approach based on students digital from technologies use competence theoretical foundations of development

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Abstract: This article examines the theoretical foundations of a differentiated approach to developing students' competence in using digital technologies. Within the framework of the differentiated approach, a methodology for organizing the educational process is proposed, taking into account the individual characteristics, level of preparation, interests and needs of students.

Keywords: Differential approach, digital technologies, digital competence, student readiness, modern educational technologies, individual approach, optimization of the educational process, competence development, information and communication technologies, innovative educational methods.

Introduction: The first paragraph of the Decree of the President of the Republic of Uzbekistan No. PF-5847 dated 08.10.2019 "On approval of the Concept for the development of the higher education system of the Republic of Uzbekistan until 2030" provides for "establishing mutually beneficial cooperation between education and industrial enterprises and research institutes."

Today, due to the expansion of the scope of application of digital technologies in all areas and the modernization of computer devices and the improvement of appropriate software tools, there is a need to improve the content of subjects included in the category of computer science in the continuing education system, as well as the forms, methods, and tools of teaching.

The Decrees of the President of the Republic of Uzbekistan No. PF-5712 dated April 29, 2019 "On approval of the Concept for the development of the public education system of the Republic of Uzbekistan until 2030" and No. PF-5847 dated October 8, 2019 "On approval of the Concept for the development of the higher education system of the Republic of Uzbekistan until 2030" provide for "continuous changes to the main curricula of general education schools in order to increase the overall level of use of digital technologies for students; taking measures to systematically organize the process of developing multimedia products in education and their application; improving methods of teaching computer science in general secondary schools; implementing the "One Million Programmers" project in schools across the region; organizing distance learning programs based on modern information and communication technologies; Priority tasks have been set, such as the implementation of the "E-MINBAR" platform, which allows online viewing and mastering of lectures and practical exercises, as well as uploading them to electronic information storage devices, and the use of "Cloud technologies" in educational processes [1, 2].

O.K. Tolipov conducted research on the topic "Pedagogical technologies for the development of general labor and professional skills and qualifications in the system of higher pedagogical education" and studied the role of pedagogical technologies in the development of professional skills and qualifications in future teachers and important aspects of their application in the educational process [12]. Kazayirov developed the polytechnic foundations of the formation of design-technological knowledge and skills in future labor education teachers based on the use of computer technology [39], and Sh.S. Sharipov developed scientific directions for preparing future vocational and labor education teachers-students for inventive activity [139]. In the research work carried out by AR Khodjabayev, the pedagogical foundations of the educational and methodological support of a labor and vocational education teacher were theoretically developed and ways of their application in practice were shown [131]. M. Urazova studied the problem of improving the technology of training future vocational education teachers for design activities [133].

Research on computer science teaching methodologies has been conducted by NNZaripov [12], MRFayziyeva [10], and NAOtakhonov [11].

In particular, in the dissertation work of N. N. Zaripov entitled "Improving the methodology of using the programming environment in teaching the subject of "Informatics and Information Technologies" (on the

example of secondary schools)", the methodology of teaching the subject of "Informatics and Information Technologies" in the 10th grade in secondary schools, the chapter "Creating applications in the Delphi environment", is presented. In this work, game and simulator programs, demonstration and multimedia applications designed to teach working with the Delphi programming environment and performing mathematical calculations in it, creating various applications, and the methodology of its use are developed. Also, a set of questions on the use of the Delphi programming environment by students and various applications was developed [12].

In her dissertation work entitled "Creating WEB Systems Adapting to the Educational Process", MRFayziyeva improved the methodology for teaching the subject "Web Programming" based on Web technologies. In her research, information and educational resources in the Uzbek language were developed for a Web system that adapts to the educational process based on the improved content of the subject "Web Programming", and a software system for teaching was created that adapts to the student's level of knowledge and allows for distance learning using computer or mobile technologies. Also, a remote testing platform was put into practice, which serves to determine the level of knowledge of students in subjects where the procedure for conducting intermediate and final tests in the subject "Web Programming" is defined as a test and automatically records it in an electronic journal [210].

In his dissertation work entitled "Methodology of Teaching Object-Oriented Programming Technologies" by NAO Takhanov, a methodology for using various didactic tools and modern pedagogical technologies in teaching object-oriented programming languages in higher education institutions was developed [11].

Although the research of these scientists has put forward the methodology of teaching Delphi, C++, Java programming languages, their research cannot be considered sufficient for today's developing field. Because today, modern programming languages are improving, and new algorithmic programming languages are entering the continuous education system. Therefore, the research and scientific resources related to programming in the continuous education system today cannot be considered sufficient.

DNMamatov's [9] dissertation entitled "Pedagogical design of vocational education processes in electronic information and educational environments" presents the design of electronic information and educational environments within the framework of person-centered education. The design of the educational environment is explained on the basis of developing competence

components, pedagogical conditions, educational functions and methodological approaches [7].

In the pedagogical dictionary [12] the following types of differentiated instruction are distinguished:

- External differentiated education is the organization of special courses, the opening of in-depth training courses , the organization of elective courses, etc.
- Internal differential teaching – every one individual characteristics of the student into account received without , in class the most rational work character is determined [99, 39-b].

Level differential of the concept of education (DDT) one how many definitions there is:

1. Z.Abasov's to the mind according to , level differential education is various capable students with one in the auditorium education to give technology is, that student personality as development for the most comfortable conditions creates.
2. Level differential education — in this students for the material mandatory mastery level determined , educational process step by step done increased , high to degrees achieve opportunity there is It will also be possible for students the material to master readiness , theoretical and practical in terms of into account is obtained [10].

Competence (from the Latin *competere* - to agree, to harmonize) is the ability to apply knowledge, skills and act successfully on the basis of practical experience in solving general problems in a certain broad field. The process of studying fundamental sciences forms the following competencies in the student :

1) general competencies:

- be able to construct oral and written speech logically, logically, and clearly, and acquire the skills to conduct debates [8];
- can independently acquire and use new knowledge in practice, and strives for self-development [8, 39-b]
- processing information in global computer networks [7] ;

2) professional competencies:

- profession in action naturally of sciences basis from the laws use and bachelor of the program to their goals appropriate modern electronic equipment and information and communication technologies management [6]
- analytical activity , practice the field analysis to do methods conceptual , logical , mathematical and algorithmic in degrees to apply capable [12].

As a result of the analysis of pedagogical, psychological, philosophical, scientific, social literature and scientific research on the topic of our research, existing problems were identified and proposals and recommendations were developed to find their solutions. Based on the identified problems, it was determined that the working curriculum should be developed in terms of content, analyzing the qualification requirements, curriculum and subject programs of mathematics and computer science. The relevance of the research topic was substantiated .

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