STAGES OF FORMING STUDENTS' INDEPENDENT LEARNING SKILLS IN DIGITAL ELECTRONIC TEXTBOOKS

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Abstract:

This article presents ideas and considerations about the tasks of teachers and students in the process of using digital textbooks to form independent learning skills of students studying at technical universities, as well as the stages of forming independent learning skills.

Keywords: Independent learning, digital textbook, web quest, electronic library and electronic portal, praxeological, online, chat, forum, offline email.

Introduction

You can't imagine the developments in the scientific, economic, and technological fields of the world, including digital technologies. The widespread use of digital technologies in all fields requires future specialists to master this field well and constantly improve their knowledge and skills. To achieve such results, it is important to develop independent work skills in students using digital educational resources[1].

The teacher will interact with students as they complete independent work on topics presented in the digital learning environment. In the interaction under consideration, the role of the teacher is oriented towards mentoring, he becomes a kind of "navigator" in the electronic information and digital learning environment[2]. The teacher acts as a consultant, whose goal is to teach students "how to learn". The student is guided through introductory and general lectures, the procedure for completing independent work, and the provision of resources on the topic of independent work, and these connections are organized using electronic educational resources. Since the educational activity of a future specialist is focused on solving the problem of "self-education" [3], the teacher must create conditions for independent learning.

In this interaction, the main functions of the teacher are aimed at forming students' motives for independent learning; participating in setting goals and objectives at the initial stage of independent learning, organizational activities, searching for and selecting digital educational resources; developing a methodology and educational methodological documents on the use of digital resources in order to form independent learning skills of future engineers; managing the process and results of students' independent learning activities; determining reporting forms, workload, and deadlines; determining types of advice and assessment criteria. The interaction

between teacher and student in the digital learning environment is carried out online (chat, forum) and offline (e-mail).

The concept of "independent learning" is considered as the activity of students in acquiring knowledge and skills, which is carried out without the direct participation of the teacher, but is guided by him [4]; it is carried out in a certain system with the participation of the teacher in planning it and assessing the achievement of specific results. From this perspective, individual independent work of students on practical projects in the electronic information educational environment is one of the leading forms of organizing this independent educational activity.

By conducting independent learning separately with alternative digital learning resources, future engineers have the opportunity to find the necessary information and use it to develop projects; create projects, test their usability, and present them through participation in competitions and conferences. The use of digital resources in the individual independent work of future engineers in developing projects contributes to the formation of skills in independently organizing and planning their own work, the emergence of interest and demand for solving problem situations, and the search for new optimal solutions to professional problems.

The presence of computers and modern digital tools in educational institutions does not guarantee their positive impact on the formation of independent learning skills of future specialists[5]. Teachers are a determining factor in the willingness and willingness to use the capabilities of digital educational resources to organize and support students' independent learning activities [6]. The development of independent learning skills in future engineers is carried out step by step. The following stages of the formation of independent learning skills can be distinguished: basic skills, general skills, and highly developed skills[7]. The following three effective stages of developing independent learning skills in future engineers are considered:

The goal of the first stage of developing independent learning skills in future engineers is to guide students towards socially significant independent learning activities in their future professional careers. This stage is aimed at stimulating students' motivational attitude to independent professional activity through the need to search for new knowledge and methods of action using contextual tasks. During the orientation phase, students will be introduced to areas of computer technology and information technology that require analyzing and processing data from electronic libraries and electronic portals using web quest technology. At this stage, the simplest types of work with electronic resources are used, such as electronic textbooks, electronic teaching methodological complexes for subjects, and educational websites.

The second stage is praxeological, its goal is to involve future engineers in independent educational activities to solve professional problems using a digital learning environment. At this stage, students complete laboratory and practical tasks in general professional subjects and professional modules, develop a course project, and actively participate in conferences and competitions. The praxeological stage is the longest and most difficult stage, in which students are involved in independent design activities, which not only helps to deepen knowledge in the

field of project development, but also helps to develop goal-setting and activity planning skills, practical-oriented tasks, skills for self-assessment of the results of independent educational activities, and the rational use of information provided in digital educational resources to find solutions. At this stage, students use electronic teaching methodological complexes, educational websites and portals, and electronic libraries.

The third stage of developing independent learning skills in future engineers is considered effective. Its goal is to use and strengthen independent learning skills in various competitions with the participation of students. The final qualification work of future engineers involves the implementation of professional activities in the development and production of computer projects.

The outcome assessment block includes the basis for selecting levels, criteria, and indicators for the formation of independent learning skills of future engineers through digital resources and process results. It serves to determine the level of development of independent learning skills in future engineers.

The first stage of developing students' skills in using digital educational resources is aimed at learning to use digital educational resources independently. We have created a simple and easy-to-use digital educational resource program for the subject of "Information Technologies" using the C++ Builder 6 programming language. In our digital educational resource provided through this software application, we have provided several methods for independently mastering the topics covered in the curriculum and monitoring the level of mastery of the topics. Using this software application, students will not only consolidate the knowledge and skills they have acquired during class, but also gain the ability to independently monitor their own learning. Below is a window displaying information on the topic "Spreadsheets. MS Excel" from a software application created in the subject "Information Technologies". After students become familiar with each topic, they will have the opportunity to test their knowledge and skills by taking tests on the topic, and they can draw conclusions based on the test results (1 picture).
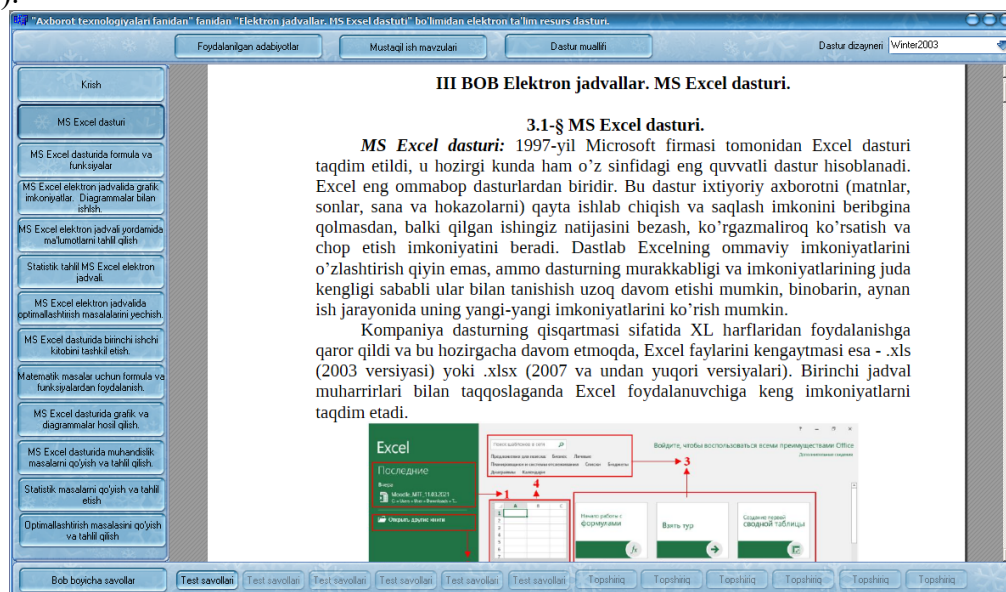
1- picture. Electronic learning resource software application.

Using the software application, students are presented with a sequence of tasks to complete during practical exercises, allowing them to independently complete tasks according to the options. Through the Assignment section located at the bottom of the practical training window of the software application, students have the opportunity to assess their knowledge and skills on the subject, that is, self-monitor. (2- picture).
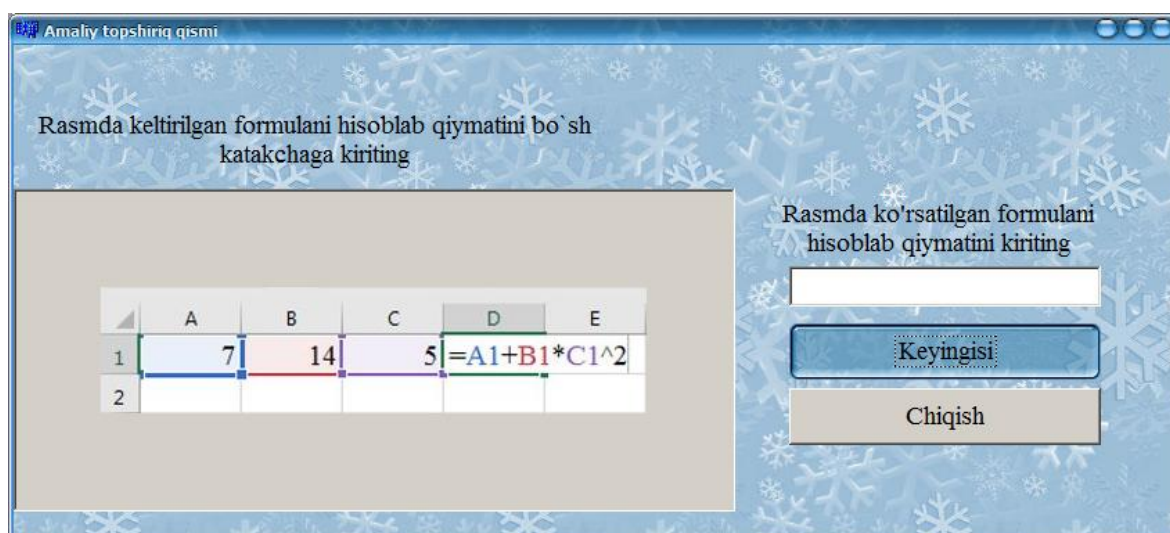
2- picture. Task execution window.

While completing these tasks, students will develop skills in working with formulas in MS Excel, as well as independently learn the rules for writing formulas and calculating.

In conclusion, it should be said that the role of digital educational resources in the formation of independent learning skills in future engineers is invaluable. Electronic educational resources serve to form and develop students' skills such as self-improvement, independent decision-making, and continuous research, in addition to developing their ability to work independently.

References

1. M.A.Tursunov The role and importance of independent learning in continuing education (on the example of creating electronic educational resources in the subject "Information Technologies") Modern Education № 2(99) -2021.

2. Information and communication technologies in education / I.V. Robert, S.V. Panyukova, A.A. Kuznetsov, A.Yu. Kravtsova; edited by I.V. Robert. - M.: Drofa, 2008. - 312 c.

3. Novikov, A.M. Methodology of educational activity / A.M. Novikov - M.: Publishing house "Egves", 2005. - 176 c.

4. Izmailova, M.A. Organization of extracurricular independent work of students: a methodological manual. / M.A. Izmailova. - M .: Publishing and trading corporation "Dashkov and K", 2008. – 64 c.

5. Zabbarova, M.M. Information technologies as a factor in self-education of future music

teachers: Abstract of dissertation... candidate of pedagogical sciences. - Moscow, 2014. 22 c.

6.Kuznetsova, I.M. Pedagogical guidance of self-education of students of technical universities: Abstract of diss. candidate of pedagogical sciences/St. Petersburg, 2009.-23c.

7. Platonov, K.K. Questions of labor psychology / K.K. Platonov. Moscow: Science, 1970. -280c.

8.Tursunov M.A. The role and importance of independent learning in continuing education (on the example of creating electronic educational resources in the subject "Information Technologies"). Modern education № 2(99)-2021. 16-23-b.

9.Tursunov M.A. The importance of using electronic resources ineducation Academicia: an international multidisciplinary research journal V. 11 2021-y. 642-646 p

10Shodiyev Rizamat Davronovich, and Ergashev Nuriddin Gayratovich. "ANALYSIS OF EXISTING RISKS AND METHODS OF COMBATING THEM IN CLOUD TECHNOLOGIES". American Journal of Pedagogical and Educational Research, vol. 18, Nov. 2023, pp. 190-8, https://www.americanjoumal.org/index.php/ajper/article/view/1522.