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STUDYING AND IMPROVING THE KNOWLEDGE CONTROL SYSTEM IN DISTRIBUTED AUTOMATED LEARNING SYSTEMS

Annotation

This article emphasizes the importance of researching the methods of organizing distributed automated learning systems and developing general principles for constructing knowledge control systems based on the model of differentiated responses of trainees. At present, software technologies on the basis of personal computers are being actively introduced into the learning process, used to transfer to the student the educational material and control the degree of its assimilation. At the same time, a large number of training systems, including automated systems, that cover various subject areas, have appeared on the market of the software product over the last decade and are designed to solve the tasks of teaching at various stages of a person's life - from primary school to secondary school in higher educational institutions. At the same time, most of the programs are subjective in nature, reflecting the intellectual level of knowledge of authors in the field of programming, and written in accordance with the views of developers on computer learning technology.

This leads to the fact that a number of programs have extremely limited functionality and do not allow to fully understand the trainee's material, and in some cases even discredit the very idea of AOS on the basis of personal computers. Automated Training Systems are software and hardware complexes that include methodological, educational and organizational support for the learning process based on information technology.

Key words: automated learning, evaluation model, intellectual level,differentiated response

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ИЗУЧЕНИЕ И СОВЕРШЕНСТВОВАНИЕ СИСТЕМЫ КОНТРОЛЯ ЗНАНИЙ В РАСПРЕДЕЛЕННЫХ АВТОМАТИЗИРОВАННЫХ СИСТЕМАХ ОБУЧЕНИЯ

Аннотация

В этой статье подчеркивается важность исследования методов организации распределенных автоматизированных обучающих систем и разработка общих принципов построения систем контроля знаний на основе модели дифференцированной оценки ответов обучаемых.

В настоящее время в процесс обучения активно внедряются программные технологии на базе персональных ЭВМ, применяемые для передачи ученику учебного материала и контроля степени его усвоения. При этом на рынке программного продукта за последнее десятилетие появилось достаточно большое количество обучающих систем, в том числе и автоматизированных (АОС), которые охватывают различные предметные области, и призваны решать задачи обучения на различных этапах жизни человека – от начальных классов средней школы до процесса обучения в высших учебных заведениях. Вместе с тем, большая часть программ носит субъективных характер, отражающий интеллектуальный уровень знаний авторов в области программирования, и написаны в соответствии с

взглядами разработчиков на компьютерную технологию обучения. Это приводит к тому, что ряд программ имеют крайне ограниченные функциональные возможности и не позволяют в полной мере усвоить обучаемым преподносимый материал, а в некоторых случаях вообще дискредитируют саму идею АОС на базе персональных ЭВМ. Автоматизированные Обучающие Системы (АОС) представляют собой программно-технические комплексы, включающие в себя методическую, учебную и организационную поддержку процесса обучения, проводимого на базе информационных технологий.

Ключевые слова: распределенное автоматизированное обучение, интеллектуальный уровень, модель оценки, дифференциальный ответ

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ТАРАТЫЛҒАН АВТОМАТТАНДЫРЫЛҒАН ОҚЫТУ ЖҮЙЕЛЕРІНДЕГІ БІЛІМДІ БАҚЫЛАУ ЖҮЙЕСІН ЗЕРТТЕУ ЖӘНЕ ЖЕТІЛДІРУ

Аңдатпа

Бұл мақалада таратылған автоматтандырылған оқыту жүйесін қалыптастыру және білімді бақылау принциптерінің жалпы әдістерін дифференциалды бағалаудың негізгі өзектілігі қарастырылады. Қазіргі уақытта оқыту үрдісінде программалық технологиялар компьютерлерге қарқынды енгізілуде,оқушыларға оқыту материалдарын қабылдауға және бақылау жүйесін жетідіруге арналған. Сонымен қатар соңғы онжылдықта бағдарлама өнімінің нарығында әртүрлі пәндік салаларды қамтитын автоматтандырылған жүйелерді (АОЖ) қоса алғанда көптеген оқыту жүйесі пайда болды және адам өмірінің әртүрлі кезеңдеріндегі бастауыш мектептен орта мектепке дейінгі білім беру және жоғары оқу орындары үшін де қарастырылған. Сонымен қатар, бағдарламалардың көпшілігі субъективті сипатта, бағдарламалау саласындағы авторлардың білімінің зияткерлік деңгейін көрсететін және компьютерлік оқыту технологиясы бойынша әзірлеушілердің пікірлеріне сәйкес жазылған. Бұл бірқатар бағдарламалардың өте шектеулі функционалдылығына және тыңдаушының материалын толығымен түсінуге мүмкіндік бермейтініне, ал кейбір жағдайларда тіпті жеке компьютерлер негізінде АОЖ идеясын насихаттауға әкеледі. Автоматтандырылған оқыту жүйесі (АОЖ) – бұл ақпараттық технологияға негізделген оқу үрдісіне әдістемелік, білім беру және ұйымдастырушылық қолдауды қамтитын бағдарламалық-техникалық кешендер.

Түйін сөздер: таратылған автоматтандырылған оқыту, зияткерлік деңгей, бағалау моделі, дифференциалды жауап

Introduction

To study and improve the knowledge control system in distributed automated learning systems to ensure an effective and objective assessment of the level of knowledge of students, as well as to identify problem areas in the educational process and their subsequent correction.

Depending on the principles of functioning of program resources, the training system can be conditionally divided into two groups: a clearly supplemented subject system and an instrumental system. The most promising from the point of view of the ratio are automated training systems (ATS), which can be called instrumental systems created to create and maintain the final result and labor costs[1]. The main advantages of ATS:

- ability to use individual training;
- strengthen learning;
- ability to individually adapt training courses to needs;
- ability to use and replicate best practices;
- improving the accessibility of Education
- training of independent work skills
- exemption from repeated actions (lectures, verification work, etc.).

Conditions and methods of research

Currently, due to the results of the development of computing network and

telecommunications technology, the automated training system has reached a new level. One of the most important tasks of a distributed automated learning system is the organization of knowledge control. With the simplicity of choice answers and the absence of formal analysis methods, test questions and differentiation of answers are systematized. However, such an approach limits the possibilities of learning to analyze various test questions and answers that the developer uses in relation to course students. In this regard, knowledge control over the work of the driving organization in a distributed automated training system is relevant. The article describes the step-by-step construction of the development of a training system in a distributed environment. An analysis of classes of training systems is carried out and the structure of the developed system is described.

Improving the quality of training of specialists can be ensured when applying the educational system of three psychological and pedagogical groups: research, design and interaction. Such an example of effective pedagogical Technologies is interactive learning and the use of computer technologies. From the point of view of managing the educational process, training systems can be divided into two groups. The first group is a learning process management system for each user. Includes a summary of the subject of study or its distribution according to its logic on a machine carrier in text and graphic formats[2]. The training system of this group is distinguished by the properties of functionality. The second group: a training system that independently controls the learning process (ATS). In a computer environment, according to its logic, a text with an exposition of an academic discipline or its section, graphics, audio, video formats. Verification tasks for each presentation of the academic discipline in contrast to the first group systems, in these systems the responses and actions of the students have a further impact on the learning processes.

Research results

The degree of management of the educational process directly depends on the degree of adaptation of the system, therefore, the training system of this group is divided into subgroups the degree of their adaptation and adaptation by the way:

– ATS with a linear learning pattern;

– ATS with a branched training model;

– ATS with adaptation in the form of a presentation;

– ATS with adaptation in accordance with the logic of presentation; - aos with multigent adaptation to the object and tasks of training[3] .

When developing the system, a clear list of strictly defined modules was developed. In total, the number of such modules is twenty. The entire structure of the system can be freely divided into 3 parts:

–«Administrator» - a set of modules for entering service information into the program

– «Teacher» – to create lecture materials on subjects, on the topic a set of modules for developing theoretical and practical knowledge control, and also to make the final control of the student's work;

–«Student» - a set of modules, intermediate and final control in subjects delivery, as well as familiarization with lecture materials. After organizing the structure of the system, a specific functional system of the data storage approach was determined. To store data, it was decided to use the Client-Server Database.

Discussion of research results

One of the main modules of a distributed automated training system is the student's training module.

During the implementation of this module, the subject is requested. After entering the value, the topics of the entire discipline and the principles of working on the topics are indicated.The quality of control is carried out in two modules knowledge testing module and practical knowledge module. Theoretical testing module-provided control of knowledge on the topic,questions to the user on the task and options for answers to each of the questions

asked are given.The testing algorithm can be divided into Download testing and perform testing according to the applicant. On testing in a given module, intermediate control or final control is carried out. The volume of questions included in the database on a given test, the time for completing the test task and the score size are also determined by the user's assessment of "excellent".Selection of non-repeated questions on a random basis, making sure that on this basis there is no excess of the scoring system of the assessment, beyond the limits of the test system.The following applicant performs the steps in the given module: 1) switch to the next question; 2)select one correct answer option given; 3) completion of testing. If the execution time is exceeded, the testing time is automatically disabled. Based on the topic of the work, along with additional training opportunities, a distributed learning system will be developed and implemented, in which testing of theoretical and practical knowledge can be carried out.

Conclusion

In conclusion, I would like to say that in order to increase the effectiveness of knowledge assessment, it is necessary to use modern technologies and methods. In particular, adaptive assessment algorithms, artificial intelligence can be used to analyze student responses, as well as integrate the assessment system with other systems. An important task is to create a flexible knowledge assessment system that will take into account the individual characteristics and needs of each student. For example, you can use various combine the efforts of specialists in the field of assessment formats (testing, essay, project, etc. d.), provide feedback and recommendations for improving knowledge.

We are ready to continue researching this topic and develop new methods of knowledge assessment. It is also important to study the experience of other educational institutions and share it with colleagues.

The research and improvement of the knowledge assessment system in distributed automated learning systems is an urgent and promising task.

To solve it, it is necessary to education and information technology.

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