

Loading the app's reference information		
GetListSpecializations() - List of specialties doctors'	Absent	Specialty GUID, name specialties
GetListDoctors() - List Of doctors	Absent	Doctor's GUID, full name, ID specialties, name specialties
GetListStatus() - List Of status of consultations	Absent	Status ID, name status's

In this article we developed a secure mobile client based on Android OS to improve the speed of first aid. At the initial stage, the work was considered in detail existing solutions, methods of conducting telemedicine consulting, tools for mobile app development. At the application development stage, the requirements for mobile client, designed its architecture, was developed interface for interaction between the API and the TMS Web service.

Literature

1. Dawn Griffiths, David Griffiths Head First. Programming for Android. — SPb.: Peter, 2016. - 704 p.: ill. — ("Head First" Series O'reilly»)
2. Visual Studio and Xamarin [Electronic resource]. - URL: <https://msdn.microsoft.com/ru-ru/library/mt299001.aspx> (date of request: 01.04.2017)
3. The security of Android applications. Yandex lecture [Electronic resource]. - URL: <https://habrahabr.ru/company/yandex/blog/310926/> (date requests: 08.06.2017)

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SMART INTERACTIVE TEACHING TECHNOLOGIES

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Annotation. The article discusses the use of SMART-technologies in the educational process. Interactive computer technology allows you to speed up learning and improve the quality of education, through a deeper and more visual study of the material.

Keywords: e-learning, information and communication technologies, digital devices, SMART technologies, interactive equipment, Smart devices.

An important area of modernization of education in Kazakhstan remains the informatization of the educational process, the expansion of the use of interactive forms of learning in the educational process, the introduction of special online education curricula. In the program article "Social Modernization of Kazakhstan: Twenty Steps to the Universal Labor Society", President N. Nazarbayev noted that "one of the key factors in the success of the entire modernization process of the country is the success of updating the national education system" [1], which is why it is necessary. " ..intensively introduce innovative methods, solutions and tools into the domestic education system, including distance learning and on-line training, accessible to everyone "[2].

In the modern world, the possession of information and communication technologies is becoming one of the most important competencies of a modern person, since "technologies can serve as a powerful tool for education - and they must be correctly integrated into the educational process and accompanied by new learning models. To achieve this, many countries require a transition to a more interactive and project-based learning process using innovation and technological solutions" [3].

Now that most children are surrounded by digital devices in their daily lives, new ways of involving students in the educational process are needed. The development of SMART technologies and the intensity of their penetration into everyday life open up opportunities for the variability of

educational activity, its individualization and differentiation, allow for a new way to organize the interaction of all subjects of education, to build an educational system in which the student becomes an active and equal participant in educational activities. Teachers, using relevant online resources ready for work in the classroom, developed by educators from around the world, are learning to integrate technology and digital content into curricula. They can connect with colleagues living anywhere in the world and share lesson materials, ideas, thoughts and successful examples by connecting to a networked community that provides access to various resources, including high-quality training sessions; they can discuss them online using the services of Facebook, YouTube, Twitter, blogs, web pages, etc. The use of such technologies in the educational process, the placement of content on social networks will increase its quality.

SMART technologies make it possible to have quick access to educational materials and programs, educational resources, complete assignments, communicate with a teacher anytime, anywhere, increase motivation of students through the use of familiar technical means and a virtual environment, develop skills and abilities for continuous lifelong learning. The form of training is radically changing, which corresponds to the idea of “lifelong learning” and prepares students for modern living and working conditions.

Smart education technologies mean educational content that is freely available for students, feedback from teachers and students, the exchange of knowledge between them, and automation of administrative tasks. In many educational organizations, interactive equipment is already widely used (SMART Boards interactive whiteboards, interactive projectors, interactive displays, etc.). But this is not only equipping educational institutions with modern tools and equipment. This is introducing students to the practice of gaining knowledge independently in electronic form, as well as unique universality for their effective use in the full-time system for organizing high-quality and effective independent work of students, the distance education system of working students, advanced training of specialists, and the system of general non-formal education of the population.

Modern information and communication technologies, including SMART technologies, as a learning tool help solve the problems of developing a student’s personality, realize methodological goals that correspond to didactic principles, such as:

- individualization and differentiation of the learning process;
- control with feedback, with the diagnosis of errors and the evaluation of performance;
- self-control and self-correction; carried out in the process of assimilation of educational material, training and self-training of students;
- release of study time.

The introduction of new information and communication technologies involves the use of such smart devices and gadgets as smartphones, iPads, tablets and ultrabooks, interactive SMART boards, special nozzles on plasma panels, etc., with which, according to researchers, the opportunity is achieved group and individual work, collecting and storing material, Internet access, the ability to create training tasks, the ability to record and create an audio or video file, etc.

The technologies of electronic and smart training provide, firstly, the opportunity to receive a practice-oriented education, as electronic content will be regularly updated by both teaching and students, supplemented by "fresh" information from professional sites and blogs; secondly, technology allows you to build an individual learning path. Students will be given the opportunity to independently study educational disciplines in electronic courses, “attend” virtual seminars, take part in webinars, watch lectures online or in recordings, as well as perform test work in the electronic learning environment.

The opportunities offered by e-learning and SMART education should be especially attractive for people with disabilities.

To date, the world has the necessary prerequisites for the successful implementation of the smart-training system:

- Web2.0 information and software tools well-oriented for solving smart education problems have been created;
- Cloud technologies have become quite widespread;

- Developed educational resource management systems (LMS).

The introduction of ICT technologies and the development of digital devices and equipment, i.e. a change in the technological environment has led to a change in the learning environment through innovative teaching methods, to the creation of an intellectual environment for the continuous development of competencies of participants in the educational process, including activities of the formal and informal learning process.

The technical basis for the implementation of such an education is the entire available fleet of devices, both belonging to students and educational institutions: computers, laptops, tablets, smartphones and other devices.

An important feature of interactive SMART technologies is tactile control, which simplifies working with an interactive whiteboard and makes it intuitively simple and understandable even for an inexperienced user. On the surface of an interactive SMART board, you don't need to write with a special pen, but you can use any object - for example, a pointer, a marker, you can even write with your finger, which is the only way for children with disabilities to work on the board. Using interactive SMART technologies (SMART interactive whiteboards, interactive displays, tablets), the teacher has the opportunity to simulate the lesson together with students in a brainstorming mode, demonstrate training material, make written comments on top of the images on the screen, record generated ideas and, thus, create along with students educational content.

To implement smart education, the following conditions are required:

- recognition along with formal, non-formal and informal education;
- competency-based - updating the content based on certain models and profiles of competencies;
- the introduction of tools for self-diagnosis of the educational environment to ensure the stable functioning of all elements of the educational environment;
- the use of software for the organization of the educational process adaptive to all existing operating systems, including through the use of cloud technologies, content design based on common data description standards;
- high rate of updating educational content through the use of micromodules, the ability to update content from various devices;
- the use of educational content development tools that provide the ability to create objects in device formats used in an integrated intellectual environment;
- shift of focus from the duration of training to its effectiveness;
- the need for accurate metrics to determine competency before and after training [5].

According to Claudio Dondi, Secretary General of the European Foundation for Quality Assurance in E-Learning (EFQUEL): "Education for the future is open, using ICTs, student-oriented, more globalized, striving for standardization. Much changes in education: motivation, content, inclusiveness, quality, teaching, learning objectives, competencies, management, methods for assessing knowledge"[6].

The use of information technology will lead to changes in the use of intellectual potential, will form a new innovative culture of educational organizations based on the creative self-realization of teachers, recognition and evaluation of each contribution, the use of project forms of cooperation, professional growth and high self-esteem of each participant in the educational process.

Literature

1. Nazarbayev N.A. Social modernization of Kazakhstan: Twenty steps to the Universal Labor Society. Global trend of social modernization. Electronic resource: <http://www.zakon.kz/4501497-socialnaja-modernizacija-kazakhstanana.html>
2. Message from the President of the Republic of Kazakhstan N.A. Nazarbayev to the people of Kazakhstan "Strategy" Kazakhstan-2050: a new political course of a successful state. " - Astana, Akorda, 2012.
3. Information and communication technologies in education: Monograph / Ed.: Badarch Dendeva - M.: UNESCO IITE, 2013.– 320 p.

4. Dmitrievskaya N.A. Smart education. Electronic resource: <http://www.myshared.ru/slide / 72152 />
5. On educational trends. Electronic resource: <http://ntihomirova.livejournal.com/44526.html>
6. Smart Learning Program for Specialists of the Republic of Kazakhstan Professional development for teachers based on Smart Learning. Korea Soongsil Cyber University. 2014.

BLOCKCHAIN IN EDUCATION: HOW TO MANAGE STUDENT CREDITS OF HIGHER EDUCATION THROUGH THE BLOCKCHAIN?

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Abstract

Currently, technologies are developing very quickly and the need for information security is constantly increasing. In this connection, Blockchain technology is becoming in demand, which allows us to keep information safety and integrity. In addition, the technology enables the creation of a decentralized environment where transactions and data are take place without any third party organization.

We proposed a decentralized web resource based on the Ethereum platform for managing student credits. The decentralized application (Dapp), will process, manage and control tokens, which represent credits that students gain for completed certain courses. The credit system is a first step towards a more transparent and technologically advanced form which could be used by universities and students to manage credits.

Key words: blockchain, higher education, credits, tokens.

1 Introduction

Blockchain technology is becoming popular not just a financial sphere, but also are entering into more and more new spheres such as medicine, Internet of things, education, voting etc. This technology has not been ignored in the field of education. Currently, there is already a number of works interested in various aspects of the application of blockchain technologies in education, for example, [13-19] and others. However, these works are mainly focused on theoretical nature, considering the prospects of applying blockchain technologies to various issues of digitalization of education.

One of the relevant issues of education system is to create a web-based information resource based on Blockchain technology. Thanks to this resource, it becomes possible to keep records and receive reliable information about the student achievements. This completely eliminates the possibility of making changes to existing records.

This paper aims to show some practical implementation to solve this kind of problems via using blockchain. The paper considers technical details of building the appropriate decentralized application (Dapp), which could be used by universities and students to manage credits. That means, after each successful completion of a semester an employee (teacher) of the university with certain access rights could issue credits to students as tokens, when fully getting the needed number of credits/tokens, students could see their achievements, as well as could show to their potential employers or to another university.

Remainder of the paper is organised as follows. Section 2 defines the problem. Section 3 provides related works. Section 4 provides implementations. Section 5 concludes this paper.

2 Problem definition

Today, most higher education institutions keep their students' records including credits in various applications. However, these databases are designed on a centralized approach that leads to