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BUXORO DAVLAT UNIVERSITETI
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O'ZBEKISTON RESPUBLIKASI
INNOVATSION
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«AMALIY MATEMATIKA VA AXBOROT TEXNOLOGIYALARINING ZAMONAVIY MUAMMOLARI» XALQARO ILMIY-AMALIY ANJUMAN

T E Z I S L A R T O' P L A M I

A B S T R A C T S
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2021 YIL 15 APREL
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ЎЗБЕКИСТОН РЕСПУБЛИКАСИ
ОЛИЙ ВА ЎРТА МАХСУС ТАЪЛИМ ВАЗИРЛИГИ
БУХОРО ДАВЛАТ УНИВЕРСИТЕТИ
АХБОРОТ ТЕХНОЛОГИЯЛАРИ ФАКУЛЬТЕТИ

АМАЛИЙ МАТЕМАТИКА ВА АХБОРОТ ТЕХНОЛОГИЯЛАРИНИНГ ЗАМОНАВИЙ МУАММОЛАРИ

ХАЛҚАРО МИҚЁСИДАГИ ИЛМИЙ-АМАЛИЙ АНЖУМАН

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Тўплам Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2021 йил 2 мартдаги 78-ф-сонли фармоиши билан тасдиқланган Ўзбекистон Республикасида 2021 йилда халқаро ва республика миқёсидаги ўтказиладиган илмий ва илмий-техник тадбирлар режасида белгиланган тадбирларнинг бажарилиши мақсадида 2021 йил 15 апрель куни Бухоро давлат университети Ахборот технологиялари факультетида "Амалий математика ва ахборот технологияларининг замонавий муаммолари" мавзусидаги халқаро илмий-амали анжуман материаллари асосида тузилди.

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Вход в цикл, в процесс движения работы класса. Комментарии и совместная работа. Мониторинг своих пунктов действий и просмотр командных. Значки обратной связи. Получение автоматических отчётов. Постановка задач, определение приоритетов, измерение прогресса на уроке. Неограниченное число команд и членов. Ожидаемые результаты, документы и обсуждения. Возможность использования технологии GTD является основным плюсом данного сервиса. GTD (Getting Things Done) — это технология потоковой обработки действий с целью достижения максимальной личной продуктивности на основе уменьшения количества этапов и упорядочения элементов внутренней и внешней информационной модели. Основными особенностями GTD технологий на уроках математики являются: Быстрый доступ к математическим моделям решения, индивидуальным и типовым заданиям, которые представлены на сайтах педагогов, размещенных, как правило, на бесплатных сервисах Google (еще Dropbox, Evernote и т. д.), что позволяет учащимся иметь доступ к данным ресурсам через мобильные гаджеты, планшеты, нетбуки и т. д. Нет необходимости тиражировать задания или алгоритмы в печатном виде и тратить время на их раздачу. Достаточно сказать адрес или открыть в общем доступе ссылку на необходимый ресурс. У каждого ученика свой адрес и возможность доступа. Таким образом, можно организовывать не только общие «беседы» в системе on-line, но совместный поиск решения творческих заданий. Организована возможность обратной связи. Все вносимые данные либо непосредственно попадают в интернет, либо автоматически синхронизируются и раздаются индивидуально на каждый адрес. Таким образом, достигается уникальный подход к каждому ребенку, в независимости есть ли у него дома ПК или нет, достаточно мобильного современного телефона.Dcnh Раньше наиболее популярным среди подростков и универсальным считался сервис Evernote, который является веб-сервисом и набором программного обеспечения для создания и хранения заметок. Однако, в настоящее время его программный инструментарий стал перенасыщенным, что снизило его эффективность и простоту использования, поэтому сервис Workboard стал более эффективным решением [3,с.146]. Studyboard— бесплатная академическая Q&A платформа для ускорения и оптимизации учебного процесса.
Studyboard — это сервис, не требующий специальных знаний в IT, но позволяющий оптимизировать учебный процесс и обсуждать связанные вопросы. Академическая Q&A платформа позволяет загружать, проверять, оценивать задания онлайн; ускоряет решение учебных задач; помогает справедливо оценить успеваемость и вовлечённость учащегося. Встроенный математический инструментарий позволяет планировать уроки для учащихся с 5–11 класс, а система создания тестов проводить фронтальный блиц-опрос, в котором каждый учащийся заинтересован в результате. Возможен учет скорости внесения ответа, организации обратной связи в режиме реального времени, когда учитель объясняет новый материал с использованием виртуальной онлайн- доски. Таким образом, мобильный телефон на уроке может быть не только средством отвлечения внимания учащегося на уроке, или калькулятором, но и коммуникационным устройством, повышающим эффективность организации учебного процесса и подготовки домашнего задания, так как все материалы, результаты доступны учащимся дома.

THE ROLE OF REQUIREMENTS IN THE CREATION OF E-LEARNING RESOURCES

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Nowadays, the aim of implementation of the electronic learning into educational process is an important priority in realization of the State program of educational development in the Republic

of Uzbekistan. The research of E-learning in system of education as the problem is based on the comparative analysis of existing experience in the world and in Uzbekistan. The situation is improved by Internet access due to the latest technologies in this sphere in Uzbekistan. In the sphere of pedagogical education the positive dynamics in creation of digital educational resources and pedagogical software is observed.

The development of digital educational resources on school disciplines for the E-learning organization at comprehensive schools is carried out during implementation of the educational development in Uzbekistan. It is necessary to start drafting a program and educational production on study programs to implement E-learning to educational process fully. Moreover, it is necessary to develop training workshops and courses for preparation and retraining an academic staff is capable to work successfully, professionally and competently in conditions of E-learning system. E-learning inculcates in the system of comprehensive school of education in Uzbekistan more successfully. The organization of E-learning in the system of Higher Pedagogical Education is carried out without coordination, mainly it is limited by the organization of distance education in the higher educational pedagogical institutions. E-Learning at schools and universities is knowledge-based learning integrated the use of digital technology in setting up learning environments.

An e-Learning environment is one where the educational practices are partly or totally based on information and communication technology. There can be a combination of presentable and distance learning, online and offline, solitary and group learning.

As defined by UNESCO: "e-learning - learning through the Internet and multimedia". For the first time (in a professional environment) the term e-learning (e-learning) was used in October 1999 in Los Angeles at a CBT Systems seminar. UNESCO does not recommend using translation into national languages instead of the term and concept of e-learning, since this term has a very specific content that is not always adequately conveyed by translation. E-learning or "e-learning" is a generic term used to describe a wide range of electronic technologies (television, radio, CD, cell phone, Internet, etc.) in education with a particular emphasis on learning over the Internet. In the past two decades, hundreds of scientific articles, books, materials in conference proceedings have been published, devoted to the study of the possibilities of using advanced technologies in educational programs from kindergarten to university, from the public sector to the corporation.

Created by an electronic educational resource should be unified in terms of the architectures of training systems, structures and data formats for the presentation of training materials, models of learners, educational process control tools, etc., that is, it is necessary to standardize the basic parameters and structures of an electronic educational resource.

The standardization process involves the development of a system of standards and agreements adequate to the conditions of their application. The learning environment for such systems is formed by standards for interfaces, formats, information exchange protocols in order to ensure mobility, interoperability, stability, efficiency and a number of other qualities. A standard is a nationally or internationally recognized technology, format or method, documented in detail and approved by a reputable notified body. The standard usually provides the ability to verify compliance as well as formal certification. The standards are intended to unify and systematize the requirements for processes, objects, documents and methodologies used in the development of high-quality electronic educational resources suitable for certification. The development of standards is a very long process and the development of information technologies is significantly ahead of the processes of developing standards, therefore, the regulatory organizational and technical requirements for the creation and application of information technologies in education are often in the form of recommendations or so-called specifications.

Created electronic educational resources must meet the following conceptual requirements:

• compliance with the educational standard:

Achievement of personal results (citizenship, motivation for learning, integrity of the worldview, tolerance, sociality, morality, communication, health and safety, environmental friendliness, awareness of family values, aesthetics),
Achievement of meta-subject results (the ability to set goals, the ability to achieve goals, the ability to control and evaluate actions, the ability to role-based self-regulation, practical possession of the apparatus of logic, possession of a sign-symbolic apparatus, the ability to work with text, possession of skills in group work, possession of speech means , possession of information and communication technologies, possession of skills in working with an individual information environment)
· Achievement of subject results, taking into account the requirements of the standard and subjects of electronic educational resources, including in the presence of intersubject connections.
compliance with general requirements for educational publications:
Orientation towards modern learning goals, competence-based approach
· Compliance with modern scientific concepts in the subject area;
· Ensuring the continuity of the content of education;
· Compliance with modern forms and methods of organizing the learning process;
· Compliance with the age and psychological characteristics of students;
· Ensuring the optimization of the volume of the study load;
· Providing intersubject communications;
· Ensuring the possibility of using the developed materials in various forms of education (full-time, part-time, distance, etc.).
Electronic educational resources should include:
Clear and precise definition of the goals and objectives of training using the proposed electronic educational resources,
Novelty (distinctive features, originality) of the proposed development in relation to the traditional approach, its compliance with the needs of the information society,
Educational results that can be provided by these electronic educational resources and their compliance with the stated goals,
Methodological potential, justification of the feasibility of the proposed forms and methods of organizing the educational process using electronic educational resources,
The optimality of the proposed composition of electronic educational resources, the adequacy of the selected technological approaches to the tasks set,
Compliance e-educational
resources of the declared type in accordance with the stage of the educational process and the form of training (independently, under the guidance of a teacher).
electronic educational resources should:
• be focused on modern learning goals, competence-based approach,
• correspond to modern scientific concepts in the subject area,
• ensure the continuity of the content of education, comply with modern forms and methods of organizing the learning process,
• correspond to the age and psychological characteristics of students, • contain the optimal amount of study load,
• provide interdisciplinary communications,
• to ensure the possibility of using the developed materials in various forms of education (full-time, part-time, distance learning, etc.).
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Substantive and methodological requirements

Electronic educational resources should be pedagogically appropriate:
· Comply with the content of the regulatory requirements, curricula and other documents regulated by the Ministry of Education;
· Comply with the basic didactic principles (scientific nature, accessibility, clarity, etc.);
· Have consistency and consistency in the presentation of educational material and the organization of educational activities;
· Maintain, whenever possible, interdisciplinary communications;
· Contain optimal, effective and various forms and methods of monitoring the educational achievements of trainees (intermediate, final): multiplicity in the typology of test tasks, tasks of simulators, control works, problem-search and heuristic tasks; variability of test items, the adequacy of assessing the level of educational achievements of students;
· Contain technological solutions and forms of material presentation (audio, video, animation, graphics, tables, etc.) adequate to the pedagogical tasks being solved.
electronic educational resources should correspond to the age characteristics of the students:
· Correspondence of topics and educational tasks to the age of students;
· Correspondence of the rate of delivery of educational material to the individual characteristics of trainees due to the possibility of adjustment and / or step-by-step presentation of educational material;
· Taking into account the psychological characteristics of trainees to enhance attention and develop interest in the subject;
· Acceptability of requirements for the level of technical training of trainees.
The variability of education should be provided:
The presence in the content of a component that ensures the implementation of level differentiation (the presence of several levels of complexity corresponding to the levels
assimilation of educational material);
· The ability to change the sequence of presentation of material to support traditional and the introduction of new teaching methods;
The presence of various means of dialogue: questions in free form, keywords, a form with a limited set of characters, etc.
electronic educational resources should be methodically provided:
· Availability of a set of teaching materials (for a teacher, for a student);

· Clear definition of the role, place and time of use of electronic educational resources;
· A clear and unambiguous indication of the place in the content of the program in the subject;
· Availability of a list of knowledge, skills and competencies necessary for the development of electronic educational resources;
· A clear indication of the knowledge, skills and competencies that should be acquired after passing (mastering) electronic educational resources;
· Availability of timely, problem-oriented, adequate, concise and accessible help.

CONCLUSION

- For the unification of the electronic educational resource, the provisions of international, interstate and national standards for information and communication technologies in education have been studied.
- Based on the analysis of existing standards, the best international approaches and practices for creating an electronic educational resource, conceptual and methodological requirements for an electronic educational resource, as well as requirements for text, graphic, multimedia materials, for electronic courses and metadata requirements for an electronic educational resource, have been developed. Identified gaps in the legislative and regulatory framework.

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ПСИХОЛОГО-ПЕДАГОГИЧЕСКИЕ ОСОБЕННОСТИ АКТИВИЗАЦИИ ПОЗНАВАТЕЛЬНОЙ ДЕЯТЕЛЬНОСТИ УЧАЩИХСЯ С ИСПОЛЬЗОВАНИЕМ ЭЛЕКТРОННЫМ ОБРАЗОВАТЕЛЬНЫМ РЕСУРСОМ

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Психологическую основу обучения составляет процесс усвоения знаний, оптимальная организация которого предполагает учет его компонентов и закономерностей. К основным компонентам процесса усвоения знаний относятся: первоначальное восприятие, осмысление, обобщение (формирование понятий), закрепление знаний и формирование умений и навыков, их применение, проверка и оценка (самооценка). Как показывает практика, обучение с использованием электронным образовательным ресурсом дает возможность активизировать познавательную деятельность учащихся, формировать направленное восприятие. При этом использование возможностей электронным образовательным ресурсом позволяет обеспечивать учащихся специфичной наглядно-образной информацией в сочетании с графической и алфавитно-цифровой. Восприятие информации является важнейшим этапом, так как от адекватности восприятия реальному образу зависит результат процесса усвоения. Эффективное применение информационных технологий в процессе обучения предполагает включение обратной связи уже на этапе восприятия, а непрерывный индивидуальный контроль дает возможность корректировать направление восприятия, формировать верный образ. В программных средствах учебного