

Study Hydrocarbons Using the Technology On-line

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ABSTRACT

The virtual environment represents the tool through which the access to the course material, is ensured, teacher-participants interaction is achieved as well as the content management and the course activities.

The comparative visualisation of hydrocarbons structure and their main chemical properties determines an optimal information management.

Because most hydrocarbons are gases, making the experiment in the laboratory requires using specific and complex endowment that only exist and work in safety conditions only within industrial installations.

Keywords: e-learning, technology on-line, on-line course, creating questions, creating tests.

1. INTRODUCTION

Usually e-Learning is synonymous with On-line Learning, Web Based Learning - WBT, Internet Based Learning, Technology Based Learning, Open Distance Learning, Distributed Learning.

In defining the date of the European Community, eLearning refers to the use of new technologies and the Internet to improve the quality of learning through access to resources and collaboration.

Here is a definition condensed and suggestive, formulated by Elliott Masie, The Masie Center - <http://www.masie.com>: “e-Learning is the use of network technology to design, deliver, select, administer, and extend learning; we need to bring learning to people instead of bringing people to learning”.

How to find analogy Stuff Works - <http://www.howstuffworks.com>: E-learning is to classroom learning as cell phones are to a pay phone at the bus station.

e-Learning is a form of distance education, whereas the participants and the instructor can be in different locations, and the interaction is more or asynchronous. Unlike distance education, e-learning is highly interactive, achieving interaction on the following levels:

participant – participant;

participant – material;

participant - instructor.

e-Learning means access to the latest information, acquire new knowledge, continue learning, new and effective methods of learning and collaboration.

The goal of online courses is to learn how to learn, to prepare you for learning throughout life, to gain skills management knowledge, such as search, selection and synthesised information and solutions.

2. MULTIMEDIA TECHNOLOGIES

I presented some of the most interesting multimedia technologies used for communication between users in online education, and some that could influence this area in the future. The definition of multimedia incorporates text, images, audio files, video or animation, combined with a computer. Using these elements for educational purposes can be seen in the literature as “Edutainment”.

Bandwidth available on the Internet makes multimedia is not as spread on the Internet and on CD-ROM or DVD, limiting the quantitative and qualitative data transmitted. However the emergence of high-speed networks, but May particularly the transmission of data flows (streaming) makes it to gain ground. Feeds allow transmission of audio files/video large, which can be run before being pulled completely, thereby achieving allow conference and an even weaker connection, such as the modem. Packages sent to the customer are listed as arriving, the disadvantage of this method is that you not make or break run and there may be packages which does not reach because of the customer network. Reception streams audio/video is no longer a problem, most operating systems with embedded software necessary for certain formats.

2.1 Flows audio

There is a wide range of programs for the reception of these flows, generally each with a proprietary format, something unpleasant for users, since they must install a program for each format the files that they wish to receive; recently occurred but more general programs capable of running multiple formats. The main use of this format is that education in a supplement to education or the classic distance, in the form of recorded lessons, interviews, portions of the courses, case studies.

2.2 Flows video

In the case of video files there are several levels to be taken into account and tablets unless the transmission of audio streams: the files are much larger scale, imposing a compromise to the point for quality in order to achieve transmissions without using a bandwidth too high. The main advantage in online education is the possibility of adding visual examples from the evidence presented in a lesson, to facilitate understanding and to adapt to different learning styles.

2.3 Channels; PUSH technology

Represents communications channels between the personalized computers, can be also “Favorites” in Internet Explorer. Normally, to see the changes occurring on a site visit is required regular; channels through the use of RSS site may submit a new items, which can be read using a specialized program (RSS Reader) without needing to visit the site, the program will periodically read channel dates and times will appear in the latest news. An interesting feature is the emergence of a aggregators news which are sites that read channels at several sites, stores them and organize them by categories, facilitating the search on the Internet.

This technology can be used to send personalized news to the different categories of persons involved: students - important information about the courses to which they are enrolled, teachers - notice if they have received questions or themes corrected.

2.4 Chat

This type of communication allows the sending of short messages between persons working in the network; messages are stored on a server until they are received. This service may be a like with email, with the difference that here the communication is synchronous messages appears automatically on the screen of the people involved. This mode of communication is useful for the conference between two or more users, under a limited band width of. In a online course or a workshop online chat can be used to socialize, talk about using the environment, but also to discuss some aspects of the course/workshop.

2.5 Voicechat; Protocol for voice transmission over the Internet (VoIP)

Some programs have included chat facilities by voice communication, protocol-based VoIP. Conversation may be affected by the interruption, since transmission is based packages for an acceptable quality is a necessary quick connection to the Internet.

2.6 Web Whiteboarding

This technology represents a form of conference generally used in combination with chat through text or VoIP emulates a blackboard, on which participants can draw simultaneously. In this way, both facilitators and participants can manipulate information graphics that support for discussion of the chat, content can be saved for subsequent sessions or to be used in a presentation. Using this tools allow an emulation May the good work done in a virtual environment, allow simultaneous participation of students to solve problems, developing the capacity of collaboration being especially useful for brainstorming sessions.

3. TOOLS FOR CREATING COURSES

Converters are instruments that allow the achievement of rapid course of existing resources, such as different graphic presentations or other documents (even drawn up on computer courses) in a format recognized by the e-Learning use. The role of these instruments is to achieve automatic conversion of documents from one format to another, generally being used for the conversion of study materials in a format accessible on the Web, without requiring knowledge of programming for writing. The most popular programs as Word, PowerPoint, have included facilities for converting files in HTML format, no longer need programs Additional, however, that may contain features performances May.

To ensure a uniform appearance of the courses may be necessary subsequent processing of these materials, but the availability of information on the Web is already assured.

Editors HTML. Pages are created in the same format or language called HTML - HyperText Markup Language, which is a subset of SGML - Standard Generalized Markup Language. (Fig. 1 and 2)

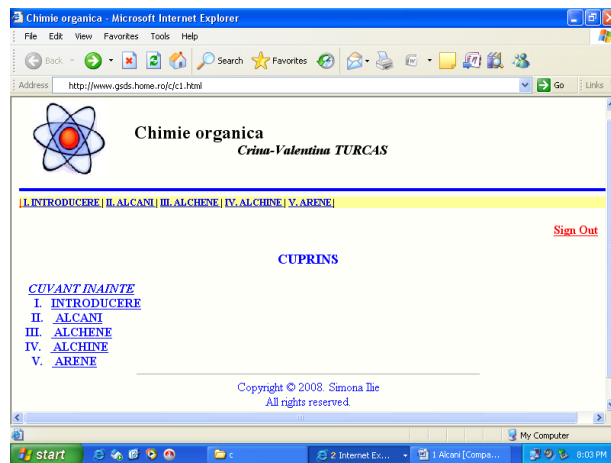


Figure 1

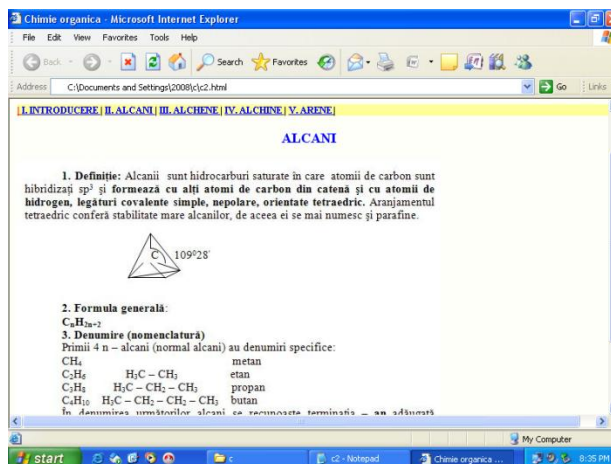


Figure 2

HTML is a markup language for hypertext which is understood by all clients WWW. It is a continuing evolution in language and different WWW browsers can recognize different versions of HTML.

All rules component HTML Document Type Definition (DTD), supervised by the W3C.

World Wide Web Consortium - W3C - <http://www.w3c.org> - is a non-profit organization that coordinates Web developments, including the Internet Engineering Task Force, a group made recommendations that specialists for the introduction of new markup codes.

Tim Berners-Lee, creator of the first Web pages, is chairman of the W3C, formed in 1994, its proposal.

To find a common denominator is very difficult, whereas over 350 large companies and organizations are part of the W3C, among them the being Microsoft, IBM, Sun, Intel, AT & T, IEEE Computer Society.

4. TOOLS FOR EVALUATING KNOWLEDGE

Tests, and many other methods to assess the results users are used by instructors to assess accumulate knowledge (Fig. 3).

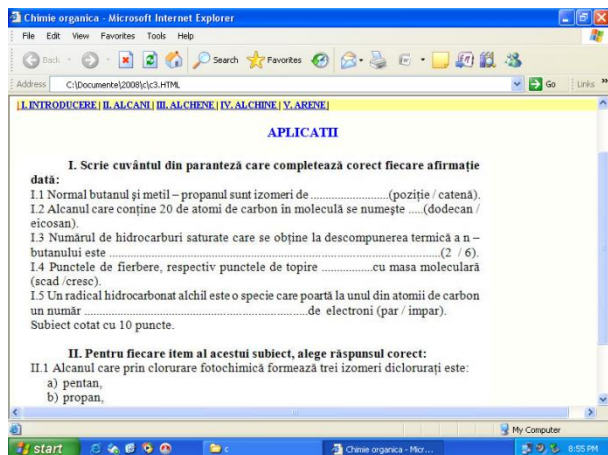


Figure 3

The tests are generally an element of the module or course.

In the e-Learning, the methods of creating the tests are part in the same category with the creation of courses. As a result, they are created in pages made with the same Web technologies and also be added courses or any other objects e-Learning created with the LCMS or LMS.

Construction tests vary through the creation, support and reporting the tests.

The process begins with the creation of the test using the test. Will be defined by specifying the test questions and answers. Then will follow part of the test load on the server (upload), where those who study it will be able to access as part of the course involved. A participant can give this test, the results being viewed, if the author chose to do so, are sent to the server. Instructor can periodically check the results obtained trainees and store on the server.

The options useful tools for testing

Options for a useful tool for testing are grouped according to the level at which occur:

- **creating questions**

- It is necessary to have the opportunity to more types of questions, like those mentioned above, the most important being: true-false, a single response possible, more possible answers.

- On questions whose answer involves text to be considered all possible synonyms of the response properly searched. It should be taken into account, however, that such an evaluation is not very accurate.

- Should be taken into consideration the possibility to include items in question audio, video.

- Display of explanations (feedback). It should be ensured how to display the results in both cases, whether the answer was correct, whether it was wrong. It is necessary to find a way to fix errors or by their explanation, either by sending material to aid.

- **creating tests**

- The test of what supplements to be given an opportunity to fix mistakes and in the case of a failure. Each test must be given multiple times. However the number of tests must limited.

- All tests have a time limit imposed by the teacher. If this time is short, being about a quick test should be able to see a precision of a few minutes elapsed time, and/or the left. Sometimes may be necessary to set an item to allow time award further, if the test is required.

- The number of questions for a test is a matter which depends on the complexity, but especially the type of course followed.

- Some tests may be made of questions selected at random from those already in the database or just displayed in different order at each new call of the questionnaire.

- The test showing there may be an option to choose the color, size of the text.

• completion of the tests

- Integration of the page: the questionnaire should be integrated into the structure of the course, but it can be placed and outside it.

- How to correct: the tests must be corrected automatically or send e-mail to the teacher that he should be able to note, in which case it will be one that will record the results, which will then be sent to students.

- How to display the results: confidential, in which case should be sent by mail or password-protected or public. Should be considered a way of allowing the display listing.

• saving results

- It is necessary to include a component of the server's questions for storing, managing and analyzing the results of tests, safety is very important.

- If one uses the LMS, necessary to transfer the results. On the other hand, if the tests are used only for self, are sufficient elements for the achievement test, and evaluation of completion, without the use of a database.

• administration

- The tests are divided on groups, as well as those studying. Such a test should be assigned to a group of people.

- Security will be done on several levels: for the administrator, teacher and learners.

- An important property must be the interoperability. The data from the database must be easily transportable in one or another LMS management system.

5. CONCLUSIONS

HTML is a markup language for hypertext which is understood by all clients WWW. It is a continuing evolution in language and different WWW browsers can recognize different

versions of HTML. This allows the introduction lingua the animation, images, text files, audio, video, PowerPoint.

The methods of creating the tests are falling in the same category with the creation of courses. As a result, they are created in pages made with the same Web technologies and can also be added courses or any other objects created in eLearning LCMS or LMS.

Development future should consider diversifying the type of questions for questionnaires, including questions to which the user can respond by filling out a text field and the possibility of working jointly more teachers to achieve lists of questions.

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