

E-Learning Techniques for Presenting Courses - Romanit a Distinct Species of Amber

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ABSTRACT

A virtual environment provides access to course material, conduct interaction between participants and teacher, and content management and the activities of the course.

The systems management courses allow editing and controlled access to e-Learning Materials. Editor is used HTML. HTML code allows the use of more complex construction, associated with various programming languages, Java, JavaScript, C#, C++, which may be placed text files, PowerPoint, images, audio files, video and animation.

Keywords: virtual learning environment, e-learning platform, amber, romanit.

1 INTRODUCTION

The virtual environment represents the tool which ensures the access to the course material, and makes possible the teacher's – participant's interaction as well as the content management and the course activities. These learning environments permit the use of multimedia technologies through text incorporation, images, audio, video files or animations.

Like an instrument for the courses editing HTML (HiperText Markup Language) was used, and this is a subset of SGML (Standard Markup Language). [1]

In order to implement an online cours program or some online collaboration spaces, one of the important decisions refer to the virtual environment: VLE - Virtual Learning Environment or LMS - Learning Management System, where these will take place. [2]

2. ROMANIT A DISTINCT SPECIES OF AMBER

Amber is a fossil resin with specific properties; there are numerous species and amber varieties spread on all continents, the most common being Baltic (Ecuador), amber area of Chiapas (Mexico), dominican amber, amber of Borneo, amber de Alava (Spain). From the point of chimico-structural view, amber is a mixture of organic compounds with high molecular weight and products of oxidation.

Amber is a fossilized resin that exuded once out of the bark or was produced in the heartwood of different types of Conifers and certain flowering trees, particulary in hot weather. From the chemical point of view, amber is a high molecular weight cross-linked polymer, the product of esterification of the co-polymer of communal and communic acid with succinic acid, last being a degradation product of abietic acid (Rottlaender, 1970). In addition to the polymeric material, amber is also composed of low molecular weight volatile compounds (2-5%) including aromatic hydrocarbons (cymenes) and monoterpenes (borneol, camphor, fenchyl alcohol and

fenchone). The empirical formula of Baltic amber has been stated both as $C_{10}H_{16}O$ (Brydson, 1999) and as $C_{79}H_{10.5}O_{10.5}$ (FrondeI, 1968). Mineralogically the group of the organic minerals study (WGOM) has approved 160 varieties of resins fossils so far. Romanite, rumanite (Rumănite, Otto Helm, 1891) syn. moldavite is the Romanian amber of Buzau County. The term was proposed by Otto Helm (1891) after he realised the chemical differences between samples from the Buzau area and from the Baltic regions.

In Romania the main resin-bearing strata belong to the Oligocene in the Eastern Carpathian flysch. Within the Oligocene strata the highest concentration of fossil resins is found especially in the lower part of the Kliwa sandstone belonging to the Buzau County and out of these, the largest number of localities is situated in the Colți village. (Ghiurcă & Vávra, 1990). The paleobotanical and palynological researches on the amber-bearing formations give the age as Upper Rupelian-Early Chattian, lower Oligocene (Ghiurca & Vavra, 1990). Today amber of the Colți area is not for commercial sale. It is found in small amounts, retained more for scientific value. People continue to look for amber along rivers after rain and regularly in spring, but with less enthusiasm than their ancestors. In order to display the crude and processed amber objects, a special museum was opened in 1980 at Colți. Today it is a sad situation in Colți: the unique *Amber Museum* is in an advanced degradation stage and very few people practice amber processing.

For Romanian researchers, the main aim will be to clarify the geological origin of romanite and to establish if it represents an amber species or it is only one of the many European amber varieties. The complexity of the theme reveals the necessity of using diverse analytical techniques, i.e. optical microscopy, infrared spectrometry (IR, FT-IR) and X-rays diffraction (XRD) in order to explain:

- the ability of chemical compounds to remain unchanged in geologic time, that could explain why some resins could be affected by the amberization and others could not;
- the role of the diagenetic processes in the creation of romanite;
- the presence and the composition of the fluid inclusions;

- the identification of paleofossils in amber;
- the possibility of using X-ray diffraction and FT-IR spectrometry as diagnostic methods for amber species and varieties;
- the chemical constitution of the insoluble fraction of amber;
- the paleobotanical origin of amber.
- spread paleobotanical some species resinous able to secret resin from which the amber;
- changes-likely suffered physical and chemical resins of geologic time.

3. TYPES OF E-LEARNING AND NECESSARY TECHNOLOGIES

Each person can differently see the definition of the online learning, this difference coming from their own experiences. To continue, the following types of e-learning will be presented, from the description of their characteristics also resulting the necessary technologies:

- Individual study (Learner- led e-learning);
- Collaboration with a teacher (Facilitated e-learning);
- The virtual classroom (Instructor- led e-learning);
- Study incorporated in activities (Embedded e-learning);
- Online mentor (Telementoring and e-coaching). [2]

3.1 Individual study

What this model tries to achieve is a support based on experiments, for those who are trying to study individually, for self-educated men.

The content of such a system consists in web pages and multimedia presentations stocked on a web server and accessed through a browser. This way of studying is better than the computer based training where the courses are generally offered on a CD-ROM, because the one who studies can be tested and followed through stocking their actions in a data base. But those who study are independent, there is no teacher but only steps that have to be taken. There are still mechanisms through which the participants can communicate with one another.

3.2 Collaboration with a teacher

This e-learning type is based on the web resources offered in learner-led e-learning, also using the facilities offered by the collaboration with a teacher. The teachers who collaborates, doesn't impose his working manner but just answers the questions and helps by giving solutions to the problem's which may appear all the time. The teacher can assess the student's level.

3.3 The virtual class

The model "the virtual class" uses the web technologies to produce conventional studies, in classrooms, for those who study at distance. A variety of technologies is used: video and audio conferences, chat, the application share, vote mechanisms virtual whiteboards.

The teacher presents slides and sustains various demonstrations. Those who study have the possibility of asking questions and receiving answers, either via chat windows or via e-mail. There is also the possibility of some audio conferences, but it is limited by the connections speed.

The main obstacle in such an e-earning method is the tape breadth (the speed at which data can circulate through connection in a second), reason why the video conferences are more rarely used on the internet, this being a solution adopted in case the course may take place in a local network, which offers the necessary band breadth.

3.4 Study incorporated in activities

This type of learning is useful for the persons who have problems which urgently need being solved, like using a certain product for example.

It often refers to the help files which can be found in the computer programs or from networks, but it can also be an EPSS component (Electronic Performance Support System).

These objects are usually associated and installed together with the programs.

For situations in which the help file is much bigger, and the user decides not to install t on his PC, this can access the tutorial existent on Web.

3.5 Online mentor

It combines the use of the latest technologies for teaching with the remotest form of teaching. There are used video-conferences, the instant transmission of messages to help mentors guide their students. Relationships based on a mentor's existence tend to become long, joining the entire period of a career development.

4. THE E-LEARNING PLATFORM

The access to a certain course can be restricted using of accounts and passwords (Fig. 1). [3], [4]

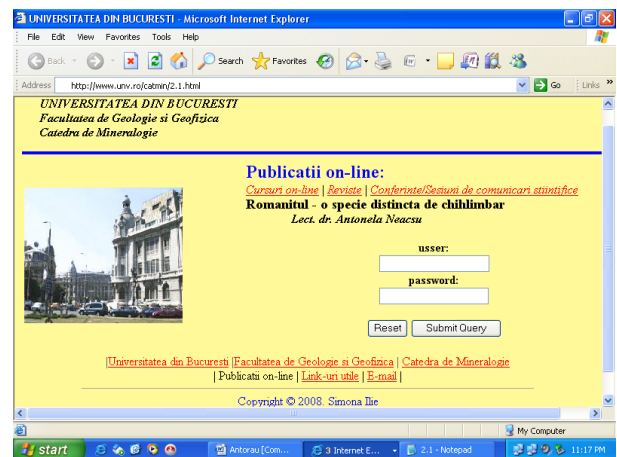


Figure 1

The program contains the following modules: information, calendar, students, forum, chat, tutorials, the platform administration (Fig. 2). [5]



Figure 2

4.1 Information

At a department level there is a page which contains the latest news. For each announcement the date, the title of the announcement and the content of this can be displayed. To read them one can enter a site and make a link to obtain announcements in RSS format, with the help of a RSS program READER.

4.2 Calendar

To highlight the main events a calendar may be introduced, through which the course days, the exam days and even the meetings with teachers or other events can be watched.

4.3 Students

For better knowledge of the course colleagues and for better communication in this page the students and their e-mail addresses are introduced.

It is also from here messages can be transmitted to the addresses selected by every student depending on whom they are addressed to.

4.4 Forum

The forum allows the user's communication with the teacher. The moment the user enters the forum he sees the number of questions and answers received for every domain. When selecting a domain, then a question the user can see all the answers to that question. After selecting a question, this can be erased or modified. In the user's case these operations are permitted just for their own questions.

4.5 Chat

This type of communication permits sending short messages among persons working in the network; the messages are stocked on a server until they are received. This service can be compared to the e-mail, with the difference that communication is synchronous here, the messages appearing automatically on the involved person's screen. This way of communication is useful for organizing conferences between two or more users, in the conditions of a bandwidth of limited tape. [6]

4.6 Tutorials

The editor contains the most used elements for creating a course, options to add files on the site as well as the possibility to introduce HTML code if the use of some more complex constructions is wished. [7], [8]

The files that contain these lessons can be as: text, HTML, Power Point. [9]

The tutorial page contains a set of lessons divided in chapters (Fig. 3).



Figure 3

When checking the level of understanding the presented information can be done with the help of a final self-assessment test or with points.

5 CONCLUSIONS

Management courses are at high level, the courses can be imported from an other apply, but there are facilities for creating course content.

The main advantage of this solution is represented by the integration of the main modules necessary in the online learning process, able to be used without the help of other programs.

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