Some aspects regarding the design of learning units using e-learning editors in the SCORM standard

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Abstract

The organization of higher education programs in distance education technology involves, as a major factor in the preparation of students, the Internet as a bridge between the participants in the educational process, supplying weekly attendance of students in the teaching of the classical training. The Internet has become the support of remote contact (online or offline) between students and professors. From a procedural perspective, implemented communication and information modules on the Internet are software made under a painstaking process of documentation, using advanced technology offered by programming languages, database management systems, and multimedia products. One difficulty in treating the concept of e-Learning is related to the heterogeneity of models and concepts that should be considered. Sharable Content Object Reference Model (SCORM) is a collection of standards and specifications for computer training (e-learning). This collection of standards is defined by the Advanced Distributed Learning (ADL), an organization under the US Department of Defense. Specifically, SCORM governs the way of learning. Consequently, we will treat some aspects concerning certain specialized editors for writing educational content in SCORM format for subsequent implementation of an e-learning platform that supports this format.

Keywords: distance learning; e-learning; e-authoring; SCORM

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1. Main text

E-learning has created new markets for teaching and learning material and equipment, attracting the attention of academic institutions as well as companies supplying them in different sectors - computer manufacturers, software producers, publishing houses and special training providers. It has also led to the reorientation of government policy, in the European Union (EU) in particular, towards encouraging the spread of e-learning techniques and developing the skills and know-how required for their use.

Therefore, e-learning was assigned a key role in the pursuit of the EU’s policy objective, announced at the Lisbon Summit in March 2000, of making the EU “the most competitive and dynamic knowledge-driven economy in the world”. (Cedefop, 2002)

The current version of SCORM is SCORM 2004 Edition 4. This is a suite of fixed documents, which is ready for implementation.

SCORM does not pursue formatting texts policies but organizing them. As hard resources, SCORM objects need sufficient resources to install the current players and a browser version. Generally, SCORM objects are designed to be used online, but there are also converters that produce usable versions on CD.

A minimal implementation of SCORM objects will contain learning sequencing and, in an overall implementation, it is also achieved the link between content and progress in assimilating the content by tests and individual scores (learning management).

One SCORM object size does not relate to quantity but must pursue optimum specifications, namely:

- Reuse;
- Portability;
- Methodological and pedagogical goals;
- Respecting the subject capacity to learn.

In this paper we will consider some aspects on the steps in designing a unit using standard SCORM editors. We will first present how an e-learning course is achieved, a model to design an e-learning course. The model contains four stages (Maja Cukusic, Niksa Alfirevic, Andrina Granic, Zeljko Garaca, 2010):

1. Planning, which develops the scenarios and the plan of an e-learning a course;
2. Organizing and implementing the e-learning course;
3. Course evaluation and its performances;
4. Implementation of the course platform.

The plan an e-learning course can be called a script to achieve such a course. A scenario for an e-learning course, developed in several stages is a reflection of a long experience in e-learning. The quality of this scenario directly affects the e-learning course. The activities required to develop such a scenario are:

- Preparatory activities for the realization of the course;
- The learning objectives of each activity must be clearly defined. The learning objectives and teachers’ expectations should be clearly stated and communicated to students from the beginning;
- A description of all learning activities
• The description of the equipment needed can be made for each activity of the e-learning course;
• Determining the assessment strategy;
• Allocation.

The organization of the e-learning process is the next step. After making the planning phase the accomplished scenario is implemented. The content is published and implemented on the platform. First the student will be informed of the technical characteristics of the platform: the student cannot do anything he/she wants. A well-designed course should be designed in a linear fashion, with a structural logic that allows an easy use by the user and attractive graphics that allows easy access to various pages and sections.

Achieving an e-learning course involves teamwork. There are some issue the course designer cannot handle alone. He needs to work with the team, and in some cases, the help comes from the person who maintains the platform; otherwise, it is recommended to hire someone professional. Those involved in achieving an e-learning course can be, besides the course designer, web graphics designer, or web programmer.

In general, the content of an e-learning course regardless of the field, an e-learning course is organized in the following stages:
• Producing content (e-authoring);
• Transforming content into inseparable formats in the platform (e-publishing);
• Inserting modified content in the platform (e-publishing).

In the e-authoring process, the author or authors make the basic material for the production of content, which will then be posted on the platform. There are taken into consideration the standards provided by the platform available. Where reference is made the content to shape, one will not refer strictly to the published form, but also to the electronic one (document types, image types, sizes etc.). The items that are used can range from word processing to multimedia.

E-editing phase is the first step towards publishing the content on the e-learning platform. In this phase, the person who publishes the content to be published (the publisher of e-content) is working on the content provided by authors and is dealing with its transformation into the e-content that is going to be published. In this process the e-content publisher recheck the correspondence with the standards set.

E-publishing phase is the last stage of the e-content, the phase where the content is integrated into the content delivery network. As such, all existing generic tools on platform (delivery tools, control and support) are associated with this stage. In addition, in many cases, this phase involves the integration, in the same course, of separately developed components as will be explained below.

Generally, a course is divided into modules (Tom Savu, Giuseppe D’Ángelo, Andrei Dumitrescu, 2011). The modular structure of the course allows reusing one and the same module within several courses. Of course, each course can have different goals, so it is possible that one and the same module may not match the various objectives of the various courses.

The module is the basic element for designing and developing a full e-content. The module is a closed informative unit that provides skills or knowledge in a particular field. He can be detached from the course and used to other courses, of course, with the necessary adjustments and connections, if necessary.

In the text editor standard SCORM, the course has several modules. Each module consists of slides. These can be regarded as chapters. Each slide contains many frames or subsections.
A module is an independent unit of a course. The module contains and uses a particular subject.

Of course the module involves certain skills or knowledge, which is why its independence from other possible modules is practically one of a structural nature and not a functional one.

In the suggested standard, a chapter is concluded when the student starts with the first electronic page (i.e. the first sub-chapter) and reaches the last page (the last sub-chapter). In addition, the system records all the dynamic use of the chapter by the learner (the display time for each electronic page, the succession of all read pages, even if the movement is not sequential but rather random or it is characterized by numerous routes or returns).

Any output from a sub-chapter would block this registration process and would enable the dynamic using analysis of the course by the learner less relevant.

Locating content represents a big problem for e-learning. In general, the localization of a content provided on the web means making it available to users of different cultures and languages. As for e-learning, this aspect has a crucial significance because in the distance learning there cannot be any misjudgments or misunderstandings on the part of the learner regarding how much he should learn.

Making tests using a text editor in standard SCORM. The test is a set of one or more instruments designed to measure the level of competence a student reached. We believe that this is one of the most important aspects of an e-learning course.

Obviously, the tests are not the only tool in skills' assessment. But the tests are ideal for distance learning. The tests are divided into different types. They consist of parts called the elements or items, which may be of various types. The main types of elements are:

- Choice test (with multiple answers);
- Open issue which presents a problem situation, and the student must give a written answer;
- Quasi-open problem is a problem situation whose answer consists of filling up a text, a formula or phrase;
- Composition is similar to the open question, but the student must observe a certain limit in his reply length.

Multiple-choice test consists of two parts:

- The one containing the problem, describing the situation to be the answered to;
- The one containing the answers, which are given in a range of responses, of which only one is correct or more are correct.

The part containing the problem can be of three types:

- Textual;
- Graphical;
- Textual and graphical.

Making a sequential questionnaire using standard SCORM text editor is quite simple to achieve. In order to assess responses there are specialized objects enabling this either for a questionnaire in which all questions belong to a single domain, or where questions are grouped in various fields.

2. Conclusions

Achieving an e-learning course involves a complex activity that must contribute a team of specialists in various fields. Unlike achieving a course in electronic format: .doc or .docx, .pdf, .ppt, e-learning course involves actions that must take place in the course so that the designer of the course be

I was convinced that the one who browses the course (learner) accumulates the knowledge necessary after browsing the entire course, which may contain different types of questionnaires.

Making questionnaires of an e-learning course is one of the important problems of course. The questionnaire can be the most significant factor that illustrates the student's knowledge. The complexity of the questionnaire reflects the student's knowledge, reflects the degree of testability of the team which conducted the survey.

References