Chapter 105

Adaptation of Descriptive Metadata for Managing Educational Resources in the GREDOS Repository

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ABSTRACT

In this chapter the authors describe a Project entitled "Divulgación de Recursos Educativos Digitales (DIRED)" (Divulgation of Digital Educational Resources) addressed to promoting specific educational resources and mobile apps for educational proposals in order to manage them through the institutional repository of the Salamanca University (GREDOS). The authors present a proposal for describing learning objects based on pedagogical information, digital competences and learning styles. The authors also suggest educational information for classifying useful mobile apps. To achieve their suitable access and recovery, the authors focus on the use of Learning Object specific metadata in digital repositories such as LOM (Learning Object Metadata). The authors study the metadata mapping necessary to adapt from LOM to Qualified Dublin Core, because this is the standard used in the GREDOS repository built with a DSpace platform. Finally, the authors present their implementation of Learning Object Description in the GREDOS repository.

INTRODUCTION

We currently live in a world with excess information, and the data banks that store it face a great challenge in seeking adequate criteria so that users can see, filter and use this information efficiently (Innerarity & Arguis, 2011).

Institutional repositories at the universities contain a large amount of different types of multi-disciplinary information. One of these types of information are the Learning Objects (LOs), which are educational units with a minimum teaching objective associated with a specific type of digital and independent contents and activities to help attain the learning goal (Morales, 2007). The metadata that LOs contain allow them to be located and retrieved, and the idea is that they can be reused in different educational contexts and can help with the specific needs of users and platforms.

One of the tools currently most favored by the rapid rise in mobile devices are applications (apps). A large variety of them focusing on the educational context can be found through the Internet usually in a free version and a paid version. These resources have great potential for educational systems when educators realize how they can be adapted to the educational objectives to be attained and adequate planning is made for their incorporation to educational activities. Educational objectives are considered to be orientated towards the development of competences and can be adapted to students' needs and preferences. It is therefore important to take into account the materials and resources that can foster these aspects.

Taking into account the complexity involved in finding suitable information, and in order to take better advantage of the institutional platforms and resources offered by universities, the DIRED Project was conceived as a means to satisfy the needs of lecturers within an institutional and educational context (Morales et al., 2013b).

The objective of the DIRED project is to store four collections in the GREDOS repository: two concerning LOs called "Learning Objects based on competences" and "Learning Objects based on learning styles". The other two collections focus on compiling pedagogical information on educational apps, one for the iOS operating system and the other for Android, that can help orientate teachers as to their possible uses, experiences with their use, recommendations from experts and technical information.

The next section presents the DIRED project objectives, where we are going to explain the general idea for LOs management, and how to extend widely pedagogical information on educational apps through four collections in the GREDOS repository.

Moreover, we explain in detail each one of these four collections. First we present the Learning Objects collection which contain, by one side, sources directed to develop digital competences and by other side Learning Objects design, based on learning styles. The Learning Objects collection based on competences section, presents a proposal for their cataloguing through three dimensions: "4.1. Search for, selection, storage and recording of information on Digital Competence"; "4.2. Organization, processing and presentation of information for Digital Competence" and "4.3. Communication of information Criterion". The dimensions are composed by criterion, descriptors, skills and abilities that users need to acquire in order to develop specific digital competences.

The Learning Objects based on learning styles collection, presents a proposal for learning objects content design that aim to develop Leaning Objects in a personalized way, standing out different elements that can favor the comprehension of the contents and foster interest in the activities.

The collection of educational apps for mobile devices section, explains the specific collections for IOs and Android apps, which describe their educational characteristics in order to facilitate the task of searching for, assessing and organizing apps.

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