

# A REVIEW OF FORMALISMS FOR DESCRIBING LEARNING OBJECTS

J. A. Asensio, N. Padilla, J. Gómez, and M. Andrés

## Abstract

*The importance of a good organization of the knowledge in the educational programmes has given rise to the appearance of different methods and strategies with regard to the way to group, select and elaborate the contents of the programmes, centred on the so-called Learning Objects. The appearance of the virtual environments in the field of the Education is stimulating even more the development of the above mentioned objects, numerous formal specifications and software tools being created directed to favour the construction of knowledge.*

*Some of these formal specifications are of general character and they deal with very diverse points, such as the accessibility to the contents, the architecture of the LMS (Learning Management System), the author's copyright, etc. At the same time, there are other specifications that focus on more specific points such as describing, packaging and distributing the contents, handling the information related to the students, etc. In the latter specifications it is aimed to achieve the independence of the contents of the LMS, favouring thus the portability and re-utilization of the same ones. Many of them have become standards, emphasizing SCORM's collections (Sharable Content Object Reference Model), developed by ADL organization (Advanced Distributed Learning), IMS (Instructional Management Standards), IMS/GLC's offer (IMS Global Learning Consortium) or LOM (Learning Object Metadata), on the part of IEEE LTSC (IEEE Learning Technology Standards Committee). Besides, there are initiatives that contribute new characteristics to these specifications, as in the case dealing with CanCore or CLOML (Customized Learning Objects Markup Language).*

*Complementarily to the formal specifications, diverse computer tools are also being developed for the production and structure of the Learning Objects. An example of this type of tools is QS-author or Reload Editor.*

*Thus, the article appears as a review, from chronological perspective, of the state of investigation and development of the formal specifications related to the Learning Objects.*

## Keywords

E-Learning, e-Learning specifications, AICC, IMS, SCORM.