The learning objects model for the production and management of educational content

The learning objects model for the production and management of educational content is getting its way through its hype cycle as any other technology [6]. More than fifteen years ago, when the model was launched [7], it promised to facilitate the production of educational materials by integrating smaller elements, composed of even smaller elements, and so on, down to the smallest units of educational content, called learning objects. These minimal units of educational content had to have properties to facilitate the composition process, such as to be relatively small, independent from one another, easy to localize, standardized (e.g. as Lego pieces), reusable and interoperable. The model included the vision of a market economy for educational content: thousands of learning object producers, generating millions of little pieces that could be easily searched, located, gathered and combined in many different ways, considering each student’s specific goals and needs [1].

The promises were big and so were the expectations raised as the learning objects model gained more visibility. All that was needed was to agree on a more precise definition of what learning objects were, clearly specifying the nature of their contents and how they should be organized, which information was needed to facilitate search and location, and which standards had to be followed for encoding their content, describing their structure, tagging them and assembling everything for delivery. It was at that point that lack of agreement, or perhaps the perception of a need to be inclusive, lead to extremely broad learning object definitions, so that anything (digital) that could be used for teaching and learning becomes a learning object [5, 9]; a definition that, in practice, is equivalent to say that anything (digital) is a learning object, and hence is almost completely useless. Certainly, it served the purpose of incorporating a large quantity of producers of educational content to the making of learning objects, with the drawback that they have produced almost anything and they have called it learning objects, while others, perceiving the overarching generality of the standard definition, have been driven to establish their own, e.g. [7].

Other problems added up, notably the excessive emphasis on technology in the proposed standards, which crashed against the relative lack of technology appropriation in the educational context, as well as the apparent contradictions in the most important reference model [2] that included a complex and advanced technological operation (in comparison to what is commonly available in typical learning management systems), coupled to a pedagogical view far behind the state of the art in the field.

The end result has been a breach of the promises of the learning objects model. To start with, it has been unable to produce a large number of learning objects to reach the critical mass that would support the routinely composition of educational contents from existing learning objects. In addition, major difficulties have been encountered in learning objects reuse, as they go beyond being content media (e.g. a picture or a song) or informative capsules (e.g. a definition or a summary). Moreover, while reusing is facilitated in these latter cases, the composition of larger and complex pieces of content from such simple resources is a difficult and laborious task. Finally, the standard definitions weakness and the diversity of alternative definitions have hampered the conceptual maturity of the area and its further development. The end result has been the fall of the learning objects model from the peak of inflated expectations to the trough of disillusionment [6].

A clear sign of the fall is the increasing emphasis on open educational resources [3] as an alternative to learning objects for the production and management of educational content. The focus is moving from learning objects size, reusability, compliance with complex models and pedagogical neutrality (or lack thereof), towards the distribution of educational contents with licenses that allow free usage and adaptation to local needs, with the benefits that it entails. This way, the production and management of
educational content is significantly simplified: all of us produce, share, and reuse anything that meets our needs, and adjust what gets close enough; from a collection of images or slides to sophisticated open source software.

The emphasis on open educational resources does not indicate, however, the death of learning objects cf. [8]. The same Gartner curve suggests that we are in conditions to start a major process of theoretical reconstruction and practical development of the learning objects model that could take us to the plateau of productivity. It is therefore important to look back, learn from previous mistakes and recover those theoretical and technological developments that can help us to begin the reconstruction of the learning objects model. The first step up the slope toward the maturity of the model is then to leave the hole dug by too general definitions and to assume a new definition that distinguishes learning objects from other types of educational content according to the specific needs that they help us attend to.

In this sense, a definition that recovers what has been learned in over more than fifteen years of experience in the field would enunciate that a learning object must have a clear and explicit educational purpose: a learning objective that is aimed to achieve through the design of the learning object and its interaction with the learner; interaction that is rich in learner productions through actions that go beyond multimedia navigation; actions and productions monitored by a learning object that can process and report them to the system that launched it, using a well-defined communication protocol. Additionally, such a definition should preserve some of the learning objects original features, such as independence from one another, localizability, interoperability and standardization.

Other properties initially awarded to learning objects need to be reviewed and, if necessary, discarded. One of such properties is that of being reusable, virtually unchanged in different contexts, because the environment imposes so many restrictions on learning objects that is very difficult to find one that fits perfectly, in its original version, in a different context. The reusability of learning objects thus depends on a clear distinction between what should stay across their different versions from what should be easily modified by distinct users to accommodate the learning objects to their specific context of usage [4]. It is also necessary to abandon the vision of learning objects as the atoms that, combined in many different ways, lead to larger and more complex educational contents such as courses and full educational programmes. Along with multimedia and informational resources, and a collection of tools for communication and collaboration, learning objects become just another resource in the educational scene, one with the specific mission to address the finer aspects of the educational process, observe the learner in action and retrieve information needed to provide them with personalized attention in their learning community.

REFERENCES


PhD. Rafael Morales
Sistema de Universidad Virtual
Universidad de Guadalajara
Guadalajara, Jalisco, México
E-mail: rmorales@udgvirtual.udg.mx