Reusable Learning Objects: Theory to Practice

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ABSTRACT
This poster describes a project that consists of a study about the reusability of Learning Objects (LOs), focused in educational aspects, and based on an empirical investigation. This investigation uses the evaluation approach and is currently in progress.
The poster briefly explains the nature of LOs, the reusability concept and the methodology used in the project.

Categories and Subject Descriptors
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1. INTRODUCTION
This poster intends to present the implications of Reusable Learning Objects (RLOs) as a learning tool, and identify the constraints and facilities that this technology might bring to the future of learning and teaching in Higher Education Institutions (HEI). The purpose is to evaluate the reusability of Learning Objects (LOs) as an educational tool.

2. BACKGROUND
Learning Objects (LOs) have been around since the early nineties, however only recently have there been attempts to implement this technology as a beneficial tool in Education. Technologically and technically, researchers are making progress toward realizing the personalised learning dream with adaptive LO technology. [2] According to the Institute of Electrical and Electronics Engineers (IEEE), LOs are defined as "*Any entity, digital or non-digital, that may be used for learning, education or training."*[1] This is a broad but credible definition which has been used as a standard definition by the learning technologies community. "The main idea of 'learning objects' is to break educational content down into small chunks that can be reused in various learning environments, in the spirit of object oriented programming" [4] Because of the costs involved in the development of LOs, reusability has an important part to play in their implementation.

The concept behind Reusable LOs (RLOs) is to provide shareable metadata content which is stored in repositories and can be accessed by the educational community. LOs metadata is usually represented in Extensible Markup Language (XML). Metadata allows the creation of a LOs repository that can be useful for teachers, students and developers.

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A number of repositories has been created mainly in the UK, Canada, and USA, with the intention of providing LOs that are reusable. In the United Kingdom the Joint Information Systems Committee (JISC) has its own repository of RLOs called the JISC Online Repository for [learning and teaching] Materials (JORUM). The work described in this poster is using LOs from the JORUM, also the Reusable eLearning Object for Authoring & Delivery (RELOAD) Editor [3] from the JISC X4L project to investigate LOs reusability.

3. Methodology
The work consists of an empirical investigation on the reusability of a sample of LOs from JORUM within a module of the Foundation Degree in Engineering, as well of a set of existing non-digital teaching materials within a module of ITO degree; both courses are at the University of Southampton. The RLOs will then be installed on the University's Blackboard Virtual Learning Environment (VLE), which currently does not have LOs; however can support them. The project will evaluate the reusability of LOs based on teachers and students feedback, using questionnaires aimed respectively to both end users. The main focus of the investigation is the pedagogical issues rather than the technological.

4. THE EMPIRICAL RESULTS
As the use of LOs is increasing it is crucial to realize what can constrain or push them as a learning tool, in order to optimize their use and reuse. In terms of technological aspects reusability is without difficulty feasible, but the results can show if they are also feasible in terms of educational practice. Although the creators of LO projects advocate that reusability can be applied both on LOs and on existing digital and non-digital teaching materials, which can be transformed into LOs; nowadays there is a lack of the second type of reusability in practice. The purpose of this investigation is to test the two kinds of reusability, in addition listen to students and teachers opinions concerning the research; consequently the results tend to be trustworthy and useful for future developments in this field.

5. REFERENCES
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