

# MODULARITY: THE KEY TO COURSEWARE RE-USE

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## ABSTRACT

By courseware modularity we mean the possibility to build complete courses from many small course modules fitting together. In contrast to puzzle pieces, course modules should be designed to fit into many different situations, allowing different courses to be produced. This goal introduces a lot of problems to be solved, like organisation (hierarchical) of the material, formats' compatibility, clear separation between contents, structure and presentation, ...

To allow an effective *multiple-use of courseware* (use of the same courseware entities by many users), as well as its *re-use* (use of the same courseware modules in the production of different courseware entities), the courseware production should be performed in small learning units that keep courseware highly modular and self-contained. Problems with the didactic design should not omitted.

The *adaptability* (meeting individual learning characteristics and learning needs) is also a reason to support the modular approach. Nevertheless, development is needed to ensure, in a practicable way, the adaptability of courseware.

The storage and management of the learning material is also an issue. The use of distributed database systems and the integration and inter-operation of several services, allowing the access to the best fitting learning material for the user and learning target, have to be achieved to allow a real multiple use and re-use of learning material.

Last, but not the least, the production cost: the courseware production is expensive and requires large teams of persons with different skills and expertise, and it is very time and resource consuming. One way to lower production costs without affecting the material itself, could be the material re-use.