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Sustainability and reuse of chemical engineering educational resources

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This communication will aim to present several examples of the creation of online educational modules, the fruit of several years of teaching experience in lifelong learning. Also, their extension in new contexts (involving other teachers) and their reuse-adaptation by the original author in new contexts will be discussed.

The modules presented concern the teaching of hydraulics (applied fluid mechanics), chemical reaction engineering (ideal reactors and multiphase reactors), distillation and liquid/liquid extraction, mass transfer, as well as material balances.

All these courses, fully illustrated with exercises, were initially created by the author for learners in the third year of license or in master's degree at the “Conservatoire National des Arts et Métiers”, France. These modules were further modified and improved (in terms of courses and exercises) in the framework of collaborative projects associating teachers from several Institutes. [The Unit Foundation](#) partially funded these projects. On these occasions, they were made public, according to the open education approach. Thus, available analytical data about the use of these resources will be presented and discussed.

The main tool for creating this content is an open-source editorial chain dedicated to creating self-training modules for higher education named [Scenari Opale](#). The communication will present the benefits of this tool in this context, and the way it facilitates resource reuse in other contexts.

The modules are widely enriched with videos. The production and impact of these videos will be discussed.

Finally, the experience gained during these years of practice will be discussed, so useful recommendations for effectively producing sustainable educational resources can ultimately be drawn.