

## Research and Design of Collaborative Learning System

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### ABSTRACT

The use of Information and Communication Technologies in the education domain has been characterized by the need of providing flexible systems that are adaptable to particular learning situations. In this sense, Software Engineering (SE) has emerged as a software development paradigm suitable for obtaining reusable, flexible, and customizable distributed applications, which would provide great benefits to the e-Learning domain. Nevertheless, this SE-education relationship has not coped with the collaborative aspects and the pedagogic theories underlying the social constructivism that constitutes the basis for collaborative learning. This article describes the process undertaken by the authors when applying SE principles to the development of Computer-Supported Collaborative Learning (CSCL). It also shows a collection of design patterns for developing highly reusable learning objects (LOs).

**Keywords:** e learning, learning object, design pattern, software engineering component framework