

## A Conceptual Model of Collaboration Oriented Learning Objects based on Constructivism

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Learning objects (LOs) are known as a collection of content items, practice items, and assessment items that are combined based on a single learning objective [1]. They offer a great value in terms of saving time and money in course development, increasing the reusability of content, enhancing students' learning environment and being used in a variety of ways to support learning in every discipline. From the pedagogical point of view, as LOs fit nicely into many instructional systems design (ISD) theories [2], therefore, alternative theoretical foundations based on constructivist philosophy of learning can be applied to learning object systems likewise. Thereby, the learning process that supports knowledge construction such as collaborative learning, knowledge sharing, are integrated into the new LOs, result in a new paradigm on the development of learning object systems and related instructional tools.

In this paper, a conceptual model of Collaboration oriented Learning Object based on Constructivism (CoLOC), a new perspective of LOs model to enhance the capabilities of conventional LOs model, is proposed. CoLOC is developed by incorporating the characteristics of LOs together with constructivist principles that emphasizes the need for collaboration among learners to arrive at a shared understanding of the truth in specific fields, in order to take advantages of these concepts simultaneously. As a result of that, teachers and learners with different skills and backgrounds who interact with their CoLOC-based LOs system to achieve the specific learning outcomes, not only benefit from the LOs' advantages but also construct their knowledge from collaborations in tasks and discussions, and sharing endeavor with others through the potentialities of CoLOC as well. In this regard, focus on a pedagogical perspective, the key attributes of a conceptual model of CoLOC are synthesized and outlined. In addition, the fundamentals of the CoLOC's learning activities are described.