



## A Flipped Classroom experience: the lateral instability phenomenon

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### Abstract

For a teacher, to inspire creativity and innovation is definitely a big challenge. One of the best ways that a teacher can use to get this result, it is an instructional strategy based on active learning such as the “Flipped Classroom”. This paper describes a small Flipped Classroom experience developed at the school of Architecture of Politecnico di Milano and subsequently at the Université catholique de Louvain.

To develop this activity the students of architecture are invited to reflect on an important and difficult problem, both for the qualitative explanation of the phenomena and for the mathematical formulation: the lateral instability phenomenon. In general, students of architecture do not possess the knowledge for dealing with this phenomenon. This situation stimulates the reflection and the collaboration among students.

**Keywords:** Active Learning, Flipped Classroom, Education, Creativity.

### 1 Introduction

The recent integration of new interdisciplinary aspects, such as social cost-benefit analysis of a structure, in structural design, has positively affected design and construction processes. [1, 2, 3, 4].

As often happens, architecture students are not interested in structural and science disciplines because they cannot see their practical

application. Although a theoretical base is essential for understanding the method to be applied, a sterile study with few or no reference at all to real life will hardly teach students how to efficiently approach structural problems in an original way.

In order to avoid sterile, mnemonic learning, the traditional, passive, ex-cathedra teaching method has been integrated with active learning techniques, based on practice experiences and