

## **Designing an Engineering Case to Learn Physics**

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### **Abstract**

In order to learn engineering principles, it is necessary to have a systematically designed Case study, and for this the following objective: to describe and analyze the design process of the Case, by SRJU model: structure, review, validation and evaluation; the dimensions were validated by judges: clarity, coherence, relevance, sufficiency; and Aiken statistics were calculated; the evaluation involved piloting of student opinions and data triangulation. The results of validation and evaluation of the design showed optimal levels of relevance and sufficiency; with coincidences in acceptable assessments that the Case is not totally coherent with a linear reality but complex.; the design method is of little application in engineering and the existence of systematically designed cases is also. The SRJU model is effective to design and qualify Cases, due to its systematic processes that improve the design dimensions and can be replicated and related to learning by inductive reasoning.

**Keywords:** active learning; Socratic dialogue; alternative teaching; structured rational thinking; inductive reasoning