Exercise class market: Applying differentiated instruction to physics tutorials

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Pedagogical Setting

The Department of Physics annually offers 10 undergraduate introductory lectures for 2,500 students. Each of these lectures is supplemented with a set of small group exercise classes (24 students/class). In a traditional setting all of those tutorials have an identical instructional structure. Their major aim is to support students in developing problem-solving skills by discussing weekly supplied problem sets. According to ETH policy the attendance of both, the lectures and the tutorials, is not compulsory and the assessment is performed by a final test. Students and teaching assistants, however, expressed diverse needs regarding the content and the activities of the exercise classes. Some students need more specific support when working on the exercises; some students need further explanations regarding the lecture content, etc. Responding to those requests, we decided to diversify the tutorials by applying the framework of differentiated instruction. According to a market model, based on offer and demand, tutorials with four different flavors are now being supplied.

Differentiated Instruction

Differentiation is attending to the learning needs of a particular student or small group of students rather than the more typical pattern of teaching the class as though all individuals in it were basically alike. The goal of a differentiated classroom is maximum growth and individual success (Tomlinson & Allan, 2000).

Acceptance study

In autumn 2013 we introduced the exercise class market in three physics lectures addressing a total of more than 1,200 students. At the end of the term we carried out an acceptance study based on an online survey and on interviews. The results from the study revealed that the market is highly appreciated by students (fig. 1) and by teaching assistants.

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References


(Images of market and students are not included in the text representation.)