**Differentiated instruction pedagogy in the chemistry high classroom:**

**Developme**nt **and evaluation**

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Abstract

The purpose of this study is to examine the pedagogy of differentiated instruction, which takes place in the chemistry classroom, following the implementation of a teaching intervention with customized pedagogy kits (CPK) for teaching chemistry developed by a team of chemistry educators and teachers. Using the CPK in class takes place following a diagnosis of students' misconceptions. Four perspectives were investigated: (1) the students' attitudes towards chemistry learning and teaching, (2) the self-efficacy beliefs of chemistry teachers in using differentiated instruction strategies in the classroom, (3) the professional development of chemistry teachers, and (4) the chemistry teachers' perception of their role. High-school chemistry teachers volunteered to take part in the current research, with their 10-12 grade students. Qualitative and quantitative research tools were used to learn about the teachers' self-efficacy beliefs, knowledge, and professional development, as well as student's attitudes. Initial findings of the first year of CPK activation, show significant differences in the sense of self-efficacy and attitudes toward chemistry and differenciated instruction among teachers and students afterwards the activation of customized pedagogical instruction kits (CPK). In addition, students demonstrated positive attitudes towards differentiated instruction, and its contribution to their understanding of chemistry. Chemistry teachers began to assimilate the importance of differentiated instruction and its contribution to achieve a successful learning process for their students, especially the use of diagnostic questionnaires was found to be implemented by the teachers. In the presentation, we will discuss the rational of CPK, and present one of the CPK. We will also show the influence students’ understanding of chemistry understanding and their attitudes towards learning chemistry in general and learning chemistry with the pedagogy of differentiated instruction in particular.