ABSTRACT

The purpose of this study was to compare high school Math, Science, Social Studies, English, and Foreign Language teachers' knowledge and implementation of teaching practices associated with Individualized Instruction, Constructivist Learning, Project-Based Learning, and Differentiated Instruction in a one-to-one computing environment. Furthermore, teachers' gender, level of education, subject taught, years taught in a one-to-one computing environment, and the extent of training in teaching practices associated with Collaborative Learning, Constructivist Learning, Project-Based Learning, Differentiated Instruction, and type of computer platform were investigated in terms of their knowledge and implementation of the pedagogical dimensions in a one-to-one computing environment.

A survey was developed to measure high school teachers' knowledge and implementation of teaching practices associated with Collaborative Learning, Constructivist Learning, Project-Based Learning, and Differentiated Learning in a one-to-one computing environment. The survey was administered through a web-based program. Of the 209 teacher participants, 170 high school teachers were chosen for the purposeful sample.

A paired-samples t test found that there were statistically significant differences between high school teachers' knowledge and implementation of the variables Individualized Instruction, Constructivist Learning, Project-Based Learning, and Differentiated Instruction. A one-way group analysis of variance (ANOVA) showed that there was a statistically significant difference for Project-Based Learning knowledge, Individualized Instruction implementation, Constructivist Learning implementation, Project-Based Learning implementation, and Differentiated Instruction implementation among the disciplines. An independent samples t test indicated no statistically significant difference between high school teachers who use a personnel computer and high school
teachers who use a Mac regarding their implementation of Individualized Instruction, Constructivist Learning, Project-Based Learning, Differentiated Instruction, and knowledge regarding the use of technology.

The findings in this study indicated different pedagogical classroom practices in a one-to-one computing environment among the high school disciplines. This study revealed how teachers use specific resources and strategies to teach their content.