

ATTITUDES TOWARDS MATHEMATICS AND MATHEMATICS TAUGHT WITH COMPUTERS: GENDER DIFFERENCES

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The increasing presence of technology to support the teaching of mathematics in Mexican middle-school (12-15 years old) leads to the need of monitoring eventual changes in students' attitudes towards mathematics. In particular we are interested in studying gender differences in this process. The AMMEC (Attitudes towards Mathematics and Mathematics Taught with Computers) scale was designed to detect students' attitudes toward mathematics (11 items); towards mathematics taught with computers (11 items); and self-confidence in mathematics (7 items). The reference scales used were the Computers Attitude Questionnaire (Knezek and Christiansen, 1995a, b), the Fennema and Sherman Mathematics Attitudes Scales (1986) and Forgasz's (2002) survey questionnaire on gendered beliefs on computers for learning mathematics. The scale was applied to 228 girls and 211 boys with 1, 2 and 3 years experience in using computers for mathematics. A general tendency to a positive attitude towards mathematics and towards mathematics taught with computers was detected. There were no significant gender differences in this. Significant differences were found in self-confidence: more boys than girls were not sure about their own capabilities to work in mathematics (42.7% boys vs. 32.9% girls), but significantly more girls than boys considered that they were definitively not good for mathematics (48.7% girls vs. 38.4% boys). In contrast, more girls than boys obtained higher marks in mathematics. A positive correlation between high marks and a positive attitude towards mathematics taught with computers was found for boys while a positive correlation between high marks and self-confidence was found for girls.

In relation to a longer experience in using computers for mathematics, there was, for both boys and girls, a more positive attitude toward mathematics and towards mathematics taught with computers. However, self-confidence in mathematics decreased for both boys and girls.

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