

Mediation Models Predicting the Level of Digital Competence of 12-to-14-Year-Old Schoolchildren in the Area of Problem Solving

1. INTRODUCTION

Technology has become invaluable and digital competence has turned into a necessity for students.

OBJECTIVE

The use of mediation models to relate attitudinal factors, technology user habits and family variables to the digital problem-solving competence level of compulsory education students (aged 12-to-14).

2. METHODS

Quantitative method with a cross-sectional design based on an objective test and a scale of attitudes → Digital competence assessment tool ECODIES.

Multilevel models together with mediation and moderation analyses utilized to define the impact of variables. Hypotheses tested using regression analysis with PROCESS v.3 macro for SPSS v.25.

Sample: 722 students (6th year of Primary Education and 1st year of Compulsory Secondary Education) and 18 education centers located in Castile and León (Spain).

3. RESULTS

TECHNOLOGY FACTORS

The level of digital competence in problem solving is not significantly determined by having a larger number of devices, nor by the frequency with which they are used.

ATTITUDINAL FACTORS

It is in the attitude towards the digital problem-solving where significant differences appear. The competence level of students with a more favorable attitude is better.

FAMILY FACTORS

Neither the family conditions analyzed nor reading habits have a significant effect on the development of digital problem-solving competence.

4. CONCLUSIONS

- Students who own more devices and use them to a greater extent do not show better digital competence in the area of problem solving.
- Students whose attitude is more positive show better digital competence; besides, the larger the number of devices, the greater the frequency with which they are used to perform school and non-school activities at home and the better the attitude towards the competence area of problem solving.
- Students who display a more favorable attitude towards solving digital problems have a better competence level, but family conditions and reading habits have no significant effects.