

WORD PROBLEMS INVOLVING FRACTIONS: PERFORMANCE OF HIGH SCHOOL MEXICAN STUDENTS

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The study of temporal evolution of mathematics performance is important, since knowledge should be progressive and cumulative, so it should improve in higher levels (Schoenfeld, 1982). This fact, in Mexico, is not always observed in the mathematics results of national tests (PLANEA, 2017). Average score obtained by students, 17-year-old, differs by 8 points from that of 16-year-olds. Therefore, there is interest to investigate: What happens with problem solving involving fractions at this educational level? In this context, the investigation aims are: 1) to determine differences by age and type of school regarding problem solving success involving fractions, and 2) to analyze solving processes followed by problem type, age group and school.

The sample consists of 180 and 78 students aged 16 and 17 years old respectively, they studied in different type of institutions in Mexico City: general and technical high schools. A pencil-and-paper test with three word problems –P1, P2 and P3– was designed and applied; the common feature of those problems is a fractional distribution through "what is left".

Results indicate that younger students and those belonging to the technical high school obtained greater success solving the three problems posed. P3 was solved correctly by a higher percentage of students. It should be noted that, despite being introductory algebra courses (Filloy et al., 2001), students do not use algebraic methods. They employed arithmetic procedures to solve P1 and P2, and trial-and-error strategies to solve P3.

References

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