WHAT DO 9 AND 10 YEAR OLDS KNOW ABOUT TABLE REPRESENTATIONS?

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The study described in this poster was designed to investigate classification criteria developed by 9 and 10-year-old children, their ability and need to define descriptors, and the importance of tables as a means to organize data. We considered classification situations proposed by the researcher and with information presented either in the form of a table or randomly arranged on a sheet of paper.

Twenty-seven students were randomly selected from three different classrooms in a Brazilian state school in Olinda, Pernambuco. The students were asked to complete three activities: 1) classification of information from a data bank; 2) classification of graphs randomly arranged on a sheet of paper; 3) construction of a table from a given graph.

In the second activity the students were required to identify the existence of a property or its complement, and perform the intersection, the union and complement of the union of elements.

In this second type of activity, the situations in which the elements were organised in tables were more easily solved. In relation to the concept of union and complement of union we observed that tasks with data not organised in a table were easier, although the percentages of correct solutions in both conditions were very low. The only task that was easier when presented in a table format was the understanding of intersection.

In relation to the task of classification and organisation of data in a table, each student had to create four criteria to classify the same elements. Many types of strategy were used, sometimes by the same student. We called them strategies because categorization in a true sense was not always achieved. Three factors were considered in order to organise these strategies: (1) the type of category created, (2) the student’s need to nominate a category, considering it as a descriptor and (3) data representation in the table, when considering each column as a descriptor.

We observed that categorising from a predefined descriptor was not a clear task for the pupils, despite evidence that the students were able to create binary, nominal and ordinal variables. Many of the students, however, found it difficult to define a descriptor, leading them to identify many properties of the given elements. Sometimes it was possible for the researcher to infer the descriptor, but it was not explicit, since the columns had not been named.

We conclude that 9 and 10-year-old students still have difficulties in creating categories. We believe that categorisation has not been well developed at school, and discussion of forms of representing categorisations is also absent in the primary school classroom. The study, thus, suggest that at primary school level students need to be involved in categorisation tasks using different forms of data organisation.