

The Factors Affecting a Theoretical Model of Elementary School Students' Attitude toward Science, as Analyzed by the SEM Method

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Abstract

The purpose of this study was to build a theoretical model, based on recent research, representing elementary school students' attitudes toward science. With the family and cultural environments as well as classroom learning as latent independent variables, and the science-learning environment, science learning motivation and attitudes toward science as latent dependent variables, the effect of variables on theoretical model was analyzed. A stratified random sampling method was adopted to select the student sample: 421 sixth-grade students from 14 elementary schools in Kaohsiung city and county were chosen to take part. A structural equation model (SEM) was applied in order to evaluate the fit of the proposed model and the collected data. The results indicated that the theoretical model fit the observed data quite well, that teachers' instruction affected students' attitude toward science, that science learning motivation intervened between the students' learning environment and their attitude toward science, and that science learning motivation is both an independent and an intervening variable. Based on these study's findings, the implications for theory and practice, as well as for further research, are also discussed.

Keywords: theoretical model, structural equation modeling (SEM), attitude toward science, learning environment