

THE EFFECTS OF MATERNAL EDUCATION, SCHOOL'S MUNICIPALITY TYPE AND GENDER ON A STUDENT'S FINAL GRADE

T-12

Heidi Luhtajärvi

University of Tampere

Keywords: mathematical competence; secondary education; educational equality

The importance of final grades for students' future educational pathways is significant. In Finland, students apply for upper secondary education based on their lower secondary school final grades. It is therefore essential that the final assessment is based on educational equity, whereby student-related factors, such as gender, do not create systematic differences in student performance. However, previous studies have shown that final grades are not always based on equal criteria (Ouakrim-Soivio, 2013). The present study aims to investigate the correspondence between competences and final grade in mathematics, and the factors influencing the variation in final grades when mathematics competence is standardized. This research question was analyzed using two-level hierarchical linear regression (HLR) in SPSS. HLR analysis was used to examine variation in the final mathematics grade, while considering the clustering of pupils in different schools. The analysis was done in stages. First, gender and mother's educational background were added to the model as student-level background variables. Second, the background variables of the school were added, i.e. the type of municipality where the school is located (urban, suburban and rural) and the size of the school. However, municipality type and school size were positively correlated with each other, causing multicollinearity in the model. It was found that large schools were located in rural and urban areas, and school size did not play an explanatory role when municipality type was included in the analysis. It was therefore decided to remove the school size variable from the model. The survey used data from the 2017 national learning-to-learn (L2L) assessment of Finnish ninth graders ($N = 9083$), only some of whom ($N = 7947$) took the mathematics test. L2L assessments use a wide variety of cross-curricular tasks, but we only used the mathematics test which was based on the ninth grade basic education curriculum. The total number of correct answers were converted into a percentage of correct answers per pupil. L2L assessment data from 2017 were combined with a data from the common application register of final grades for the same year. The second variable used was therefore the final grade per pupil. In line with previous studies, this study found, that maternal education, school municipality and gender were associated with the final grade. The results showed that maternal higher, urban municipality and gender (girl) positively influence the final grade when students have the same level of competence. This result shows how variables external to the students can influence their final grade. It is unequal that students with the same level of competence receive different grades because of the above factors.

The research was supported by University of Tampere and the Research Centre for Education, Assessment and Learning (REAL).