

ZMATH 06671095

Wendt, Heike; Kasper, Daniel

Subject-specific strength and weaknesses of fourth-grade students in Europe: a comparative latent profile analysis of multidimensional proficiency patterns based on PIRLS/TIMSS combined 2011.

Large-Scale Assess. Educ. 4, No. 1, Article No. 14, 23 p., electronic only (2016).

Summary: Background: In 2011 the Progress in International Reading Literacy Study (PIRLS) and the Trends in International Mathematics and Science Study (TIMSS) were conducted at fourth grade in a number of participating countries with a shared representative sample. In this article we investigate whether there are multidimensional proficiency patterns across the competency domains or not. Methods: In order to derive proficiency patterns across the reading (PIRLS), mathematics and science (TIMSS) competence domains, latent profile analyses (LPA) of students' plausible values were conducted. For this, the grade four student sample from 17 countries were combined and analyzed. The international reference model that resulted from this analysis was then applied with constraints to all 17 countries separately so that substantial comparisons between countries became possible. To describe and compare the differences between national profiles a classification system was developed and applied to all countries' profile patterns. Results: As a result of these international LPA seven groups of learners were identified. The profiles were approximately equidistant and parallel. For all countries we find that achievement across domains can be explained by a general level of achievement rather than subject-specific strengths or weaknesses of learners. However, subject-specific strengths and weaknesses can be identified but are – with the exception of Malta and Northern Ireland – for most of the countries rather small. For only about half of the countries, a rather uniform pattern of subject-specific strengths and weaknesses can be found on all competence levels. The subject itself varies between countries. In the other countries high, intermediate and low achievers differ in their relative subject-specific strength and weaknesses. Conclusions: The results suggest that differences in average achievement in TIMSS and PIRLS should also on country level be interpreted with caution. International comparative studies should further investigate potential reasons for the differences between countries.

Classification: D52 C32

Keywords: multidimensional proficiency; primary school; Europe; PIRLS/TIMSS 2011 combined
doi:10.1186/s40536-016-0026-2