

FY2015 -2016 Research Project of the National Institute for Educational Policy Research  
Report on the Research Study “Comprehensive Study on Pre-service Training, Placement and  
In-service Training of Teachers to Foster Children’s Competencies”

**The relationship between class size and the children’s orientation towards learning  
objectives – focusing on fifth-grade elementary school children**

**Summary of the research**

**1. Purpose**

- To conduct further analysis of large-scale survey data and to clarify the relationship between children’s motivation and class size.
- To this end, we will focus on children’s orientation towards learning objectives and consider the relationship between the class size and the directionality of approaches to the issues of children using a multilevel structural equation.

**2. Methods**

- Further analysis of the data of the survey conducted of 5th grade students of elementary schools out of the data acquired in the FY2007 Ministry of Education, Culture, Sports, Science and Technology survey research project relating to teachers and staff, “Survey Relating to the Size and Educational Effects of Group-Living and Group-Learning” (one class of each school, 275 schools, 7,643 children).
- Self-improvement motivation thought to be similar to the orientation towards learning objectives in the subscale of the reading culture – “self-improvement support check” conducted as part of the children’s survey, the answers on class size of the classes subject to the survey out of the questions of the schools’ survey and the answers to whether there were “many parents with a keen interest in education” as a characteristic of the school were added as points for further analysis.
- We analyzed the differences in effects on the self-improvement willingness of children by class size according to a multilevel structural equation model as shown in Figure 1. Level 1 is the child’s level, and Level 2 is the class level.
- For self-improvement willingness, we estimated a multi-level item response model for each

level.

- The class size was centered on the median class size of the schools being analyzed, and the number of parents with a keen interest in education, which was one of the categories of the schools' survey, was treated as a covariate.

### 3. Results and Discussions

- The path from the Level 2 class size to motivation in Figure 1 is negative and significant (unstandardized coefficient is -0.016,  $p = 0.36$ ). Based on this estimated value, if we show the predictive value of the factor score of the willingness for self-improvement based on class size, by degree (1 for a lot, 0 for not a lot) of parents with a keen interest in education as a covariate, the result is as shown in Figure 2.
- From the above results, based on the fact that the willingness for self-improvement targeted in this research is similar to the orientation towards learning objectives in the research on motivation, this suggests that the orientation towards children's learning objectives is higher if the class in which the child is enrolled is smaller, and lower if the class in which the child is enrolled is bigger.

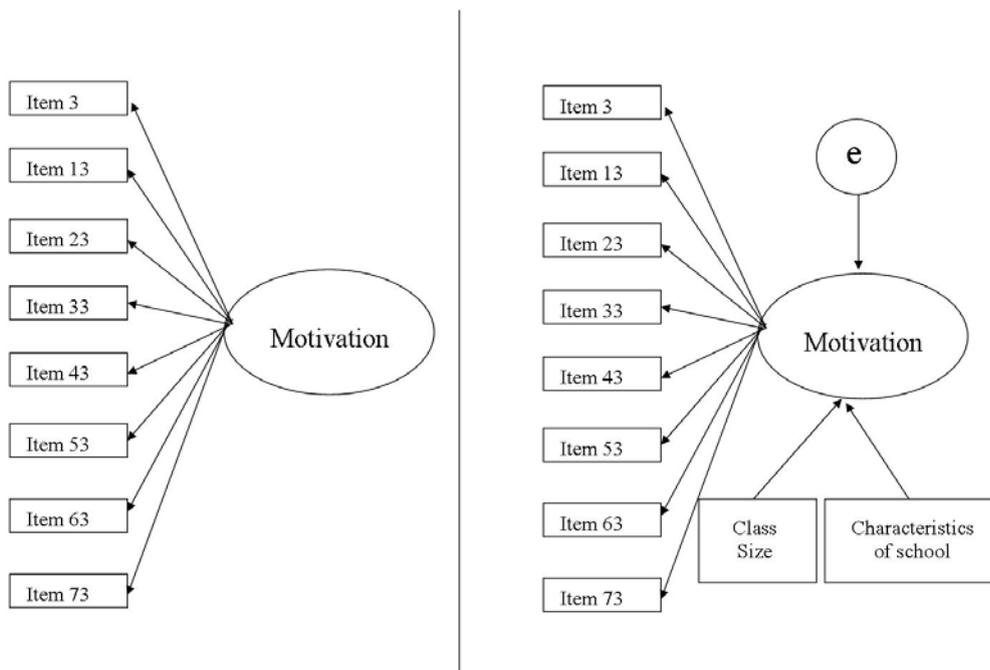


Figure 1 Model to examine the difference in effects on self-improvement willingness of children by class size

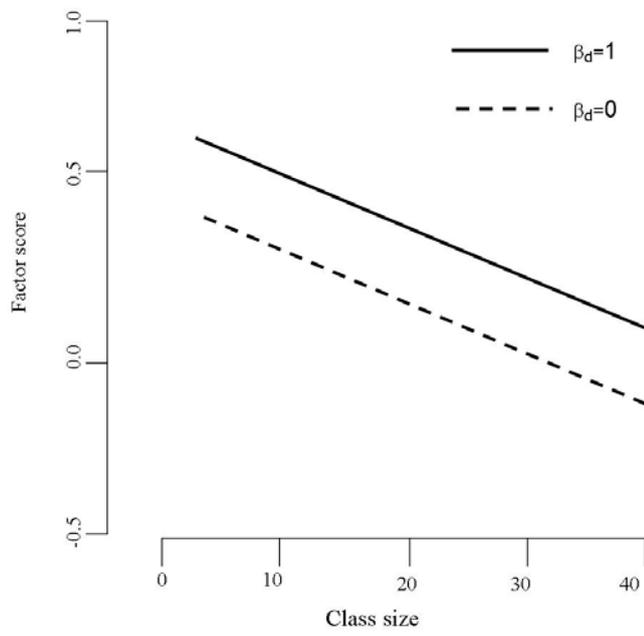


Figure 2 Predictive value of self-improvement willingness based on class size and school characteristics