

School microclimate: Teachers' supportive behaviour and student performance

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Summary

School microclimate is an essential factor that influences student performance. The current study focuses on two subtopics of school microclimate. The aim of this study is to investigate the relationship between teachers' supportive behaviour and student performance taking into account student's social, economic, and cultural status. The research questions were as follows:

1. Is there a relationship between learning process hindering types of behaviour among teachers and student performance?
2. Is there a relationship between learning process hindering types of behaviour among teachers and students' predicted performance residuals (performance prediction based on students' socio-economic background (SES))?
3. Is there a relationship between learning process hindering types of behaviour among teachers and students in the selected groups? The groups were selected by residuals (student performance was predicted by their socio-economic status.)
4. Is the relationship similar for learning process hindering types of behaviour among teachers and low and underperforming groups of students?
5. To what extent does teacher behaviour describe the variation range of student behaviour?

School microclimate is one of the most important factors in creating the favourable learning environment. On the one hand, school microclimate has an influence on how well students master knowledge and skills as well as emotional, aesthetic and social competencies (Bodovski et al., 2013; Cohen & Elias, 2010). On the other hand, school microclimate affects teacher's work and communication at school (Caldarella et al., 2011; Willmore, 2006). Numerous studies have indicated that the positive school climate

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is associated with and/or predictive academic achievement, school success and effective violence prevention (Bodovski et al., 2013; Cohen et al., 2009).

Estonia participated in PISA 2012 and Estonian students ranked among the best performers (OECD, 2013a). Compared to other countries the performance gap between schools in Estonia was not big, but when we compare schools at the national level, the variation between schools is nevertheless noticeable. Mean scores between the strongest and weakest schools differed considerably (Tire et al., 2013). Therefore, it is vital to consider areas that make it possible to ensure positive development for all students.

This quantitative research using PISA 2012 data involves the following terms: school climate (teacher and student behaviour), general education performance (GEPs, the average mean score in reading, science and mathematics), and student socio-economic status (OECD, 2013a). PISA 2012 provided information about the school climate, describing student behaviour, as well as teacher behaviour, in connection to what extent the learning of students was hindered.

The sample used for PISA 2012 consisted of students from schools with Estonian language of instruction. Students were divided into three groups based on their socio-economic background (SES) and their predicted performance residuals:

1. Students whose mean score was weaker than their SES background would predict (further referred to as the low-performing group);
2. Students whose mean score was close to the predicted performance;
3. Students whose mean score was higher than their expected mean score (further referred to as the under-performing group).

The criterion for distinguishing the average of the group members was one standard deviation of the residuals. The total sample consisted of 3570 students (50% girls) and the respective school principals ($N = 147$).

In this study we have used four variables from PISA 2012: 1) The general education performance (GEPs was the average mean score in reading, science and mathematics); 2) The index of students' economic, social and cultural status; 3) The index of student-related factors affecting school microclimate which was derived from the school principals' reports on the extent to which the learning of students was hindered; 4) the teacher-related factors affecting the school microclimate which were derived from school principals' reports on the extent to which the learning of students was hindered.

It appeared from the analysis that the correlation between GEPs and teacher behaviour in connection to what extent the learning of students was

hindered was very low, but statistically significant. The correlation of the group of under-performing students was not statistically significant.

Based on the current study we can argue that in the Estonian case teachers' supportive behaviour is not a very essential factor promoting student performance. At the same time, we can interpret this finding as if Estonian principals are not very critical towards the behaviour of their teachers. The reasons for this are unclear; it is possible that the school principals are not critical enough or they do not want to acknowledge problematic areas in teacher behaviour (Türk et al., 2011). The principals of lower performing schools do not recognise schools' weaknesses.

The results showed that the moderate correlations in underperforming and low-performing student groups between students and teachers behaviour featured the following: poor student-teacher relations (low-performing group $r = .540$; underperforming group $r = .510$) and teachers not meeting individual students' needs (low-performing group $r = .403$; underperforming group $r = .425$). Additionally, moderate correlation was found between student and teacher behaviour in the low-performing group: students not being encouraged to achieve their full potential ($r = .414$) and teachers having to teach students of diverse ethnic backgrounds in the underperforming groups ($r = .404$). Comparing the relationships from groups' of underperforming and low-performing students, we found that only two features were statistically significant: students not being encouraged to achieve their full potential and teachers having to teach students of heterogeneous ability levels within the same class.

The study results revealed that it is crucial for school management to observe whether teachers' behaviour supports student or not. The role of school microclimate can be observed among both underperforming and low-performing: the same variables (i.e. student teacher relationship and considering the needs of the student in the study process) are associated with occurrences of hindering behaviour of student learning. The study showed that dealing effectively with students with special educational needs is also important to successful students.

Keywords: student behaviour, teacher behaviour, PISA, school microclimate, student socio-economic status (SES)