Role of School Principals in High Achievement of Students

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Abstract: The role of the principal in a school is critical because a principal is not only an administrator, but also a manager, initiator of various processes and, ideally, also a school leader who furthers various processes in the school and facilitates high achievement among the students. It is therefore important to study the role of the principal and how the principal can facilitate student achievement. The aim of the research study is to carry out a comparative analysis of data from several countries to find out the factors associated with the activities of the principal (directions of professional activity, factors created by the school culture and environment) that facilitate high achievement among students. Data from a survey conducted among school principals within the IEA PIRLS 2016 study have been used for the analysis. IEA PIRLS (*Progress in International Reading Literacy Study*) is a large international comparative study of the reading literacy of grade 4 students. 50 countries, including Latvia, participated in it in 2016. In the article, the data for Latvia are compared with several geographically, culturally and historically close countries, such as Denmark, Germany, Poland, Lithuania, Russia, Finland and Sweden. The results of the research study suggest that the principal has a significant role in the facilitation of the students' achievement, but the association is indirect. The principal furthers various processes in the school, aids the teachers in their professional activity, and builds an environment in the school which facilitates achievement among the students.

Keywords: school principals, high student achievement, PIRLS, reading literacy, school education.

Introduction

The head of an educational establishment (the principal) is the main administrator and manager of a school. As research studies conducted in various countries (Dhuey, Smith, 2014; O'Malley, Long, King, 2015) suggest, the experience of the principal is indirectly associated with the performance of the teachers and students. Furthermore, the greater autonomy of schools and the higher responsibility of the principals would be necessary. A new Cabinet regulation on the national standard for basic education has recently been drafted in Latvia and includes provisions for greater autonomy of schools and higher levels of responsibility for the principals, e.g., "an educational establishment shall build a learning environment which is physically and emotionally secure, it shall facilitate the student's acquisition of social and emotional skills and learning, and it shall be tailored to the diverse learning and development needs of every student", "an educational establishment shall, as early as possible, initially ascertain the basic skills and the learning needs of the student and monitor the growth of each student [...], by giving each student wider opportunities for full involvement in the process of learning" (MK noteikumu projekts..., 2018). This suggests that a school principal should build a school environment in which the aims set with regard to the achievement of the students are attained, by taking care not only of a successful course and organisation of the process of learning, but also of individual approach to each student in consideration of their individual skills and needs. Although principals further various processes in the school, they should be ready for new challenges because the approach to the content of learning will change in Latvia in 2020. Consequently, it is important to understand the current situation and improve the understanding of what is currently working successfully in schools and what is to be improved. Principals as the main manager at school are responsible for managing the major administrative tasks. The most important competences of principals for performing the administrative work are management competence, competence of strategic thinking, communication skills, methodological competence and intellectual competence (Andersone, 2013). Nevertheless, administrative work is one part of principals' work. Principals have the most complex roles in education.

The aim of the research study is to carry out a comparative analysis of data from several countries to find out the factors associated with the activities of the principal (directions of professional activity, factors created by the school culture and environment) that facilitate high achievement among students.

Methodology

Data from the IEA (*International Association for the Evaluation of Educational Achievement*) PIRLS study (the *Progress in International Reading Literacy Study*) conducted in 2016 have been used in the research study. The results of a survey conducted among the principals of schools in Latvia have been used as the source data, and they are associated with the description of the school, the readiness of the students for learning to read, the experience and education of the principals as well as the expectations of the principals regarding the performance of the students.

The target population of the PIRLS study is students of the 4th grade. Students, their parents, teachers, and also the principals were the respondents in the survey. 150 schools from Latvia participated in the IEA PIRLS 2016 study. Each school principal had to complete a questionnaire containing various questions related to the school and the principal himself/herself. The principals were asked for a description of the school and about the learning times, resources and technologies, the attitude of the school to learning achievement, discipline and security/safety in the school, the readiness of the students for learning to read, reading at school, the experience and education of the principals, and national questions were also asked, such as what support systems are available in the school, what expectations the principals have with regard to the performance of the students and the teachers, and also questions about students with special needs.

The data analysis was performed using the statistical software IBM SPSS 22 and IEA IDB Analyzer programmes. The research methods used in the study are literature analysis and secondary data analysis and analysis of data obtained in IEA PIRLS 2016 study. Descriptive statistics (frequency, means, standard errors and percentages) and correlation analysis was performed. For replication purposes or further analysis, the PIRLS databases are freely available on the website of the IEA's TIMSS and PIRLS International Study Centre.

Results and Discussion

The questionnaire for schools in the Progress in International Reading Literacy Study (PIRLS) contains various questions for school principals regarding the schools managed by them as well as about the principals themselves. The questionnaire includes questions regarding the experience of the principal in their official capacity and the acquired education. The principals of schools in Latvia have an average of 16 years of experience in the position of the head of an educational establishment, and this is above the average of 10 years for the countries participating in the study. School principals in Lithuania also have an average of 16 years in the position of a school principal. School principals in Latvia and Lithuania have the highest average length of service as heads of schools, but the school principals in Germany and Sweden have the shortest lengths of service (an average of 9 years) among the countries of comparison (Table 1).

Comparatively in all of the countries participating in the PIRLS, 14 % of the students go to schools whose principals have more than 20 years of experience in the capacity of the head of an educational establishment, 31 % of the students have principals whose length of service exceeds 10 years, but is not above 20 years. The principals of 27 % of the students, in their turn, have more than 5, but less than 10 years of work experience, but the principals of 28 % of the students have a comparatively small working experience (less than 5 years). There are comparatively less students in Latvia (17 %) who have principals with a smaller length of service (less than 5 years), 14 % of the students have principals with more than 5, but less than 10 years of working experience. In line with the average for the countries participating in the PIRLS, Latvia also has 31 % of the students who go to schools with principals whose work experience in the capacity of the school principal is more than 10, but less than 20 years. Since, out of all the countries participating in the PIRLS 2016 study, the school principals in Latvia (and also Lithuania) had the greatest length of service, 38 % of the students in Latvia go to schools with principals whose work experience in this official position is 20 or more years.

Based on the analysis of the results of the study, it can be acknowledged that the achievement of the students have no direct correlation with the work experience (length of service) of the principals. This is also proven by other studies where the obtained data suggest that the experience of the principals has no close correlation with the achievement of the students (Brockmeier, Starr, Green, Pate, Leech, 2013).

Table 1

Work experience of school principals (Mullis et al., 2016)

Country	Percent of students by principals' years of experience as a principal				Average years of experience as a principal	Average achievement of the students on the national scale
	20 years or more	At least 10, but not more than 20	At least 5, but not more than 10	Less than 5 years		
Denmark	10 (2.5)	37 (3.5)	24 (3.1)	30 (3.6)	10 (0.5)	547 (2.1)
Finland	20 (3.6)	33 (4.0)	24 (3.8)	23 (3.2)	12 (0.7)	566 (1.8)
Germany	12 (2.4)	29 (3.8)	24 (3.0)	35 (3.5)	9 (0.6)	537 (3.2)
Latvia	38 (4.0)	31 (3.6)	14 (3.0)	17 (3.2)	16 0.8	558 1.7
Lithuania	41 (3.7)	34 (3.6)	10 (2.3)	15 (2.7)	16 (0.7)	548 (2.6)
Poland	21 (3.7)	36 (3.5)	22 (3.5)	20 (3.9)	13 (0.7)	565 (2.1)
Russian Federation	15 (2.4)	32 (3.3)	26 (2.9)	26 (3.5)	11 (0.6)	581 (2.2)
Sweden	10 (3.2)	28 (4.0)	32 (4.4)	30 (3.6)	9 (0.9)	555 (2.4)
International average	14 (0.4)	31 (0.5)	27 (0.5)	28 (0.5)	10 (0.1)	500
Standard errors appear in parentheses.						

Even if the experience of the principal has a correlation with the student achievement, it is very small (Dhuey, Smith, 2014). This does not confirm the view that a more experienced principal facilitates the achievement of the students and a less experienced principal may lower it. For example, school principals in Latvian and Lithuania have an average of 16 years of working experience, but the average reading literacy achievement of grade 4 students in Latvia had the score of 558 points in the PIRLS 2016 study, whereas the score for Lithuania was 548 points (statistically significantly lower than for Latvia). In Russia, the average length of service of the school principals was 11 years, but the average reading literacy achievement of their grade 4 students had the internationally highest score of 581 points. The average length of service of the school principals in Germany and Sweden was 9 years, but the achievement of the students in these countries did not differ. Respectively, the average reading literacy achievement of the Swedish students had the score of 555 points, but Germany had a considerably lower score of 537 points.

The correlation between the length of service of the Latvian school principals and the reading literacy achievement of their grade 4 students in the school managed by them is shown in Table 2, depending on the type of school. It can be seen that the principals of upper and lower secondary schools in Latvia have a higher average length of service in their official position in the school currently managed by them, and a higher length of service of the principal correlates with higher achievement of the students. Although statistically significant, this correlation is weak. The heads of the Latvian primary schools, in their turn, have been holding the office for shorter periods, and the differences in the time spent in the position of a school principal are not as great for the heads of the primary schools as for the principals of the other schools.

Table 2

Correlation between length of service of principals and achievement of students depending on type of school in Latvia

Type of school	Principal's length of service in the current school (years)	Standard deviation	Correlation with achievement
Upper secondary schools	14.5	9.4	0.24*
Lower secondary schools	15.0	10.1	0.16*
Primary schools	9.6	5.0	-0.24
* Significant correlation			

Ninety-two percent of the students in Latvia go to schools managed by principals holding a master's or doctorate degree, whereas 8 % of the students go to an educational establishment managed by a principal with a baccalaureate or an equal degree only. Compared to other countries, Latvia is one of the countries with a comparatively high percentage of students whose school principals have a master's or a doctorate degree

(Table 3). In Latvia, the level of correlation between the achievement of the students and the level of education of the school principal is 0.26 (Pearson's correlation coefficient), and it is statistically significant.

Table 3

Formal education of school principals (Mullis et al., 2016)

Country	Percent of students by principal education level			Current requirements		Average student reading achievement
	Completed master's or doctorate degree	Completed bachelor's degree or equivalent	Did not complete bachelor's degree	Teaching experience	Completion of specialized school leadership training program	
Denmark	18 (2.8)	73 (3.5)	9 (2.3)	No	No	547 (2.1)
Finland	89 (2.3)	10 (2.2)	1 (0.5)	Yes	Yes	566 (1.8)
Germany	90 (1.3)	1 (0.8)	9 (1.6)	Yes	No	537 (3.2)
Latvia	92 (2.0)	8 (2.0)	0 (0.0)	Yes	No	558 1.7
Lithuania	61 (4.0)	39 (4.0)	0 (0.0)	Yes	No	548 (2.6)
Poland	99 (0.7)	1 (0.7)	0 (0.0)	-	-	565 (2.1)
Russian Federation	90 (2.2)	10 (2.2)	0 (0.0)	Yes	Yes	581 (2.2)
Sweden	29 (4.1)	66 (4.1)	4 (1.7)	No	Yes	555 (2.4)
International average	48 (0.4)	45 (0.4)	7 (0.2)			500
Standard errors appear in parentheses.						

The education of the heads of the Latvian schools by the types of schools can be seen in Table 4. An absolute majority of the heads of the primary schools in Latvia have a master's degree, approximately 2 % of the school principals in Latvia hold a doctorate degree, and, compared to other types of schools, the principals of the lower secondary schools more often have a baccalaureate degree.

Table 4

Formal education of heads of Latvian schools (by types of schools) and corresponding average achievement of students

Acquired education	Upper secondary schools		Lower secondary schools		Primary schools	
	Percent of principals	Average student achievement	Percent of principals	Average student achievement	Percent of principals	Average student achievement
Baccalaureate	8.9	556	30.9	522	3.7	-
Master's	89.2	556	66.3	535	96.3	550
Doctorate	2.0	570	2.8	562	-	-

The researchers indicate that the principal has an indirect influence on the student achievement (Soehner, Ryan, 2015). Furthermore, there are research studies which confirm that the principal has significant influence on the student's results in mathematics and reading (Dhuey, Smith, 2014). The principal may indirectly influence the achievement of the students by supporting the work of the teachers. A study conducted in Germany revealed that the involvement of the principal is a trigger for school innovations. If there is more involvement from the principal, the teachers become more creative (Koch, Binnewies, Dormann, 2015). The Swedish researcher Leo Ulf (2015), in his turn, points out an issue that principals try to get involved in the process of learning and be a part of it, but there is not always enough time for it, and observing the lessons of the teachers is not systematic. Principals should be closer to the teaching and learning process, and the internal organisation of the school should be developed in order to facilitate learning (Ulf, 2015).

In the survey conducted within the PIRLS 2016 study, the principals were also asked questions like "Does your school provide a place where students can work on their schoolwork before or after school?" and "Is someone available to assist them with their schoolwork?" 93 % of the school principals in Latvia specified that their school provided a place where the students can do their homework before or after the lessons, and, moreover, 94 % of the principals specified that the school also had a person who helps

the students with their homework (Table 5). The analysis of the responses of the principals to the above questions leads to a conclusion that the students have opportunities for doing their homework before or after their lessons. Thus, the school provides a place where the students can do it. This might be explained by the extended school day groups where there are teachers who help the students after the lessons to do their homework as well as carry out other activities. It should be noted that most of the students in Latvia go to schools in which the principals provide a place for doing their homework and a person who helps the students to do it. It can be seen that the reading achievement level is higher among the grade 4 students of the schools with no place or person who helps to do homework. Apparently, no such service is offered in cases when it is not necessary.

However, the situation is not similar in all countries (Table 5). For most of the countries selected for the comparison, the average reading literacy achievement of the grade 4 students is higher in the schools where the students have no access to a person who would help them in doing their homework. The situation is also similar in Poland where the achievement of the students is higher in the schools for which the principals have specified that there was neither a place in the school where a student could do their homework before or after the lessons nor a person to help the student with doing it. Compared to the other nearest neighbouring countries of Latvia, such results are not unambiguous. In Russia and Finland, the average achievement of the students is higher in the schools for which the principals have specified that there is a place in the school where the students can do their homework before or after their lessons. In Germany, the student achievement does not change depending on such opportunity. Conversely, in Poland, Lithuania, Latvia, Russia and Sweden, the students have higher average scores in the schools for which the principals have specified that the school has no person who helps the students with their homework. Only in Denmark, the average achievement of the students is higher in the schools where there is a person who helps them do their homework. Nevertheless, it cannot be stated that the average achievement of the students is statistically significantly different in these groups in all the countries.

Table 5

Average achievement of students depending on school support measures available to them for doing homework

Country	Does your school provide a place where students can work on their schoolwork before or after school?				Is someone available to assist them with their schoolwork?			
	Yes	No	Students average achievement		Yes	No	Students average achievement	
			Yes	No			Yes	No
Denmark	60% (4.07)	40% (4.07)	548	545	71% (5.63)	29% (5.63)	552	541
Germany	72% (4.07)	28% (4.07)	536	536	98% (1.20)	2% (1.20)	536	539
Poland	89% (3.48)	11% (3.48)	564	571	97% (2.14)	3% (2.14)	564	582
Lithuania	77% (4.7)	23% (4.7)	550	545	95% (2.61)	5% (2.61)	548	561
Latvia	93% (1.35)	7% (1.35)	556	567	94% (2.55)	9% (2.55)	554	568
Russian Federation	46% (5.49)	54% (5.49)	589	573	94% (4.07)	6% (4.07)	588	598
Finland	60% (5.97)	40% (5.97)	568	561	78% (5.88)	22% (5.88)	568	568
Sweden	69% (5.63)	31% (5.63)	556	553	98% (1.33)	2% (1.33)	555	559
Standard errors appear in parentheses.								

As already stated before, a principal has an indirect influence on the learning achievement of students. Research studies suggest that the work of a principal influences the results of students in mathematics and reading (Dhuey, Smith, 2014) as well as has a significant role in the diversification or change of the approaches in the acquisition of reading literacy in the school (Puzio, Newcomer, Goff, 2015). M. Purvins, who has analysed the factors which influence the learning achievement in the schools of

general education in Latvia, states that several hundreds of factors that influence the achievement of students can be found in the theoretical sources, but there is no consensus among the researchers regarding the extent of such influences and whether the factors have positive or negative influences on the achievement of the students. M. Purvins highlights three factors as the most significant: cases of missing school, number of students in the school and the classroom, age of starting education (Purvins, 2017). When viewing the influence of the school on the achievement of the students, the preparedness of the students upon starting their 1st year at schooling should also be taken into account.

With the help of school principals, the percentage of students able to complete certain tasks associated with reading literacy (ability to recognise most of the letters of the alphabet, read some words or sentences, read a story, write letters of the alphabet or some words) at the start of their 1st year at school was determined in the PIRLS 2016 study. More than a half of the Latvian students have the above skills upon starting their 1st year at school. This is related with the skills the child is taught in the family and the skills children acquire in a pre-school educational establishment. In Lithuania, for example, only 8 % of students start their 1st year in a school where more than 75 % of the students have the said early skills (Table 6). In Latvia, schools often collaborate with the nearby pre-school educational establishments and thus facilitate the attraction of grade 1 students. It is important to have a closer collaboration between teachers of grade 1 and pre-school teachers. Moreover, not only to assure a more successful adaptation of the grade 1 students in the school, but also to improve the preparedness of the future students for school, and also to make sure that, upon starting their school years, students have acquired the skills the school expects from them. The key organiser in the facilitation of this collaboration is the principal who promotes and organises these collaboration opportunities.

Table 6

Schools where students enter the primary grades with literacy skills (Mullis et al., 2016)

Country	Schools where more than 75% enter with skills		Schools where 25-75% enter with skills		Schools where less than 25% enter with skills	
	Percent of students	Average achievement	Percent of students	Average achievement	Percent of students	Average achievement
Latvia	53 (4.7)	560 (2.8)	44 (4.6)	557 (2.9)	3 (1.3)	525 (12.5)
Denmark	36 (4.1)	553 (3.6)	59 (4.1)	546 (2.9)	5 (1.6)	530 (9.0)
Sweden	23 (3.8)	569 (5.1)	72 (4.1)	553 (2.6)	5 (1.8)	519 (8.5)
Poland	14 (3.3)	558 (6.1)	56 (4.9)	565 (2.9)	30 (4.2)	567 (5.1)
Finland	11 (2.7)	576 (5.3)	87 (3.0)	564 (2.1)	2 (1.2)	- -
Russian Federation	10 (2.1)	599 (6.9)	63 (2.9)	588 (2.5)	27 (2.6)	556 (5.1)
Lithuania	8 (2.1)	555 (6.0)	66 (3.6)	552 (3.4)	26 (3.5)	536 (4.8)
Germany	0 (0.0)	- -	29 (3.2)	552 (3.9)	71 (3.2)	530 (4.9)
International average	22 (0.4)	516 (1.6)	47 (0.5)	512 (0.8)	31 (0.4)	491 (1.0)
Standard errors appear in parentheses.						

The influence of the work of school principals on the achievement of the students also manifests as, for instance, initiation, organisation and/or maintenance of various support systems in their school. Within the PIRLS 2016 study survey, the Latvian principals answered a question regarding the additional support systems the schools have for the students, teachers and the parents of the students (Figure 1). A majority of the principals indicated that there were additional lessons available for the students for the improvement of their reading literacy as well as a support system for the parents and the teachers.

Support systems are available in schools with both high and low achievement in Latvia. The introduction and implementation of support systems in the schools does not suggest higher reading literacy results among the students, but is to be evaluated positively because it shows that the schools are interested in improving the reading literacy of the students and in providing the necessary support to the parents and the teachers.

The previously analysed data also confirm the conclusions drawn in other research studies that the association between the principal and the achievement of the students is indirect. The principal furthers positive changes in the school, and this improves the achievement of the students. Furthermore, if there

are high expectations from the management in the school, the students try to fulfil such expectations (Cotton, 2013).

Figure 1. Support systems for teachers, students and parents in the school.

When taking a look at to what extent the Latvian school principals agree with various statements regarding the student achievement, it can be seen that 44 % of the principals have specified that they agree entirely and 54 % of the principals have specified that they rather agree with the statement that they expect high achievement from the students of their schools (Table 7).

Table 7

Expectations of Latvian school principals with regard to the achievement of the students of their schools and the corresponding average achievement of the students

Statements	How much do you agree with each of these statements?							
	Agree a lot		Agree a little		Disagree a little		Disagree a lot	
	Percent of principals	Student achievement	Percent of principals	Student achievement	Percent of principals	Student achievement	Percent of principals	Student achievement
I expect high achievement from the students	44 (5.60)	550	54 (5.60)	539	2 (0.79)	543	0 (0.32)	531
I expect from the parents of the students that they will help the students gain high achievement	43 (4.13)	551	49 (4.74)	541	6 (2.96)	538	2 (1.57)	499
Teachers know that high student achievement is expected from them	54 (6.16)	545	41 (6.55)	545	4 (2.44)	526	0 (0.32)	531
High student achievement is a key target of the school	39 (5.41)	551	53 (5.97)	540	7 (2.68)	541	0 (0.32)	531
Standard errors appear in parentheses.								

The absolute majority of the principals in schools with both low and high achievement in Latvia agree with the statements regarding the achievement of the students provided in Table 7. Although there is a low percentage of the principals who have not agreed with these statements, it is still an indicator that the principals have not set high student achievement as a priority, but conditions are created in the school to favour them.

Conclusions

Based on the analysis of the role of the principals in high student achievement, it has to be emphasised that the role of the principal is significant in the facilitation of high student achievement, but the association of the principal with the achievement of the students is, however, indirect. The principal manages various processes in the school, favours circumstances which assure a successful learning

process for the students, facilitate the professional activity of the teachers, and, consequently, improve the achievement of the students as well. As concluded in the research study, the experience of the principals has a weak association with the achievement of the students. In a school of an experienced principal, students do not always have higher achievement compared to a school with a less experienced principal, and, furthermore, a less experienced principal does not necessarily mean that the achievement of the students will drop.

Another significant indicator is the previous preparedness of the students when starting their 1st year at school. A task of school principal is to create conditions to improve reading literacy among the students who have started their schooling without it and also support the teacher and facilitate their professional activity. The principal is, therefore, responsible not only for the assurance of the learning process, but also for focused support in the process of teaching and the activities of the teachers by building a support system or creating conditions that improve the student achievement.

The school environment built by the principal together with the teachers is also a substantial factor. For example, giving an opportunity for the students to do their homework at school by providing a place where the students can do it. However, there are no grounds for claiming that, in Latvia, the achievement of students is positively influenced by whether there is a suitable place for doing homework or any support staff who could help the students does it. However, it should be taken into account that it is a good practice and that principals should provide such an opportunity in the future as well.

It is essential that the management of the school expects high achievement from the students because this facilitates and improves the achievement of the students. The higher the expectations of the principal and the teachers, the more the students try to meet them. Therefore, school principals should build an environment and culture in their schools where all (the management, the teachers and the parents) have high expectations with regard to the achievement of the students.

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