

FACTORS INFLUENCING READING LITERACY AT THE PRIMARY SCHOOL LEVEL

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Abstract

The objective of this paper is to find out the reasons behind the low level of reading literacy among primary school students. The data from IEA (International Association for the Evaluation of Educational Achievement) Progress in International Reading Literacy Study (PIRLS) 2001 are analyzed. And the main conclusions are drawn that the socioeconomic situation of the family has a great impact on students reading literacy as well as parents' education and reading aloud to a child at the preschool age. Students high achieving in reading literacy usually like reading for their own enjoyment and come from families where parents spend a lot of time on reading.

Keywords: *reading literacy, factors, PIRLS, achievement level, primary school.*

Introduction

As reading literacy is a skill, which is the ground of almost all processes of learning and is necessary for students not only to acquire languages and study literature, but also to learn other subjects, the authors of the paper focused on the problem related to low achievements of students' reading literacy. If student's reading literacy level is low, in most cases it automatically implies difficulties in the acquisition of several other subjects, consequently obtaining education in general. Since the 4th grade is approximately the time when a student turns from learning to read to reading to learn, the authors of the paper set the aim to ascertain the reasons for low reading literacy among primary school students in Latvia. The purpose of this study is to find out the reasons behind the low level of reading literacy among primary school students. The research object is reading at primary school. The data of Progress in International Reading Literacy Study (PIRLS) of International Association for the Evaluation of Educational Achievement (IEA) about the 4th grade students are analyzed in this paper. Other researches in the world dealing with low reading issues in various countries are considered too.

Problems of the research

Researches have shown that there are many different and usually very complex causes for the difference in the achievement level. For example, often those are factors beyond school influence, such as the income level and education, which correlates with the academic achievements of students, but there are quite many factors that influence students' learning achievements at school (Goodwin, 2000). The results of the research have also proved that there is a close coherence between the meaning of education to parents and students' learning achievements, i.e., if education is regarded as a value in the family, there is a big possibility that children will have high learning achievements (Balster-Liontos, 1992).

Socio-economical conditions are significant for early achievements in reading; it is important whether parents read aloud for their children at home (more frequently than 3 times a week), are salubrious and have a positive approach (attitude) to learning. At early school age reading comes easier for girls (Denton, 2002). The more knowledgeable child starts schooling, the better learning achievements are anticipated during the primary school years.

Methodology of Research

The data base of Progress in International Reading Literacy Study (PIRLS) from 2001 available on PIRLS homepage <http://pirls.bc.edu/> is analyzed in the paper. The main results of this international reading literacy research in the world and Latvia are described in the first publications of TIMSS & PIRLS International Studies Centre and Education Research Institute of the University of Latvia (Mullis at al, 2003; Johansone, 2003). The process of obtaining data and their structure are described in the technical report of the study as well as in the regulations of the data base use (Martin, 2003; Gozalez and Kennedy, 2003).

3019 students of the 4th grade participated in PIRLS 2001 study in Latvia; they completed reading literacy tests and surveys, their parents and teachers filled in the questionnaires. In order to compare the data the authors of the paper portioned out 10% of all students with the highest results in reading literacy (group A) and 10% of students with the lowest reading literacy achievements (group Z). If the average result of students in Latvia was 545 points with standard deviation 62 points, the average result of the group with the lowest achievements was 440 points but that of the students from the highest achievements' group – 642 points. It means that the students from group A would have results above the average of the 5th graders, but the results of those of group Z would be below the average in comparison with the 3rd graders.

Factors making the biggest difference between the students of two groups were explored and traced when analyzing the data. These factors can be grouped in several fields: social- economic factors of student's family, collaboration of a student and his/her family, student's reading out of school and student's reading at school.

To evaluate the factors mentioned above linear regression was used which allow to determine to what extent student's reading achievements are influenced by this or that factor. Standardized coefficients of regression show how strong is the influence of the factor - the higher the coefficient the stronger the influence. If the regression coefficient is negative then the influence is opposite. Determination coefficient shows how big part of achievement can be explained by the factor or group of factors.

Results of Research

Likewise other researches, this one unambiguously has proved the facts about the distinction of reading literacy between boys and girls and notable literacy problems in rural schools. Girls always have better results in reading literacy. In group A there are about twice as many girls than boys (65% of girls and 35% boys), the opposite proportion is observed in group Z, where there are 37% of girls and 63% of boys. 50% of students from group Z go to rural schools and those of small towns, but only 20% study in capital city. 6% of group A study in rural schools, while 58% in Riga – the capital city.

Socioeconomic factors in the family

The family factors could be as follows: the number of people in a family, parents' education, financial position, and attitude towards education (in this case it is characterized by the number of books and encyclopedias at home).

3% of fathers and 8% of mothers of children from group Z have higher education, while in group A this number is sufficiently higher – 37% of fathers and 49% of mothers of children from group A have it. It can be observed that the number of fathers possessing higher education differs almost 13 times.

The children of group A have wider opportunities to use various study aids. None of children from this group declare that they don't have personal books; only 20% of them have more than a hundred

books. In group Z 22% of students don't have personal books, but 65% of students have 100 and more books. The students from group A have greater opportunities to read or just look through newspapers; they are available to 81% of students. Nearly half as many students from group Z can access magazines (only 45%). There is a big distinction between the availability of encyclopedias. 46% of students from group Z and 4% of group A don't have such a possibility.

Back in the days it was popular to consider that a mother, who is employed full time, pays less attention to the learning of her child. Practically the situation is the opposite - in group A 70% of students' mothers work full time, while in group Z - only 47%. A similar situation is observed with the employment of fathers (74% in group A and 47% in group Z).

On average, the parents of children from group A, estimate their financial position higher than the parents of children from group Z. 28% of the parents from group A and 46% of group Z consider their financial position being below the average.

To summarize it is possible to say: the students' parents from group A have a higher education level; they work more, and they have more books and fewer children.

Collaboration of a student and a family

The analysis of the data among the 4th grade students at the pre-school age in Latvia reveals that at this age only 15% of group A students don't read or read only sometimes and together with one of the adults; in group Z the number of such students is four times higher - 62%. In group A, adults frequently tell stories to the children (51% against 33% in group Z), play with alphabet toys (54% against 39% in group Z), have wordplays (43% against 29% in group Z), write letters or words (69% against 49% in group Z). In return, the parents of group Z note that they have watched TV broadcasts or movies with subtitles together with their children more (42% against 30% in group A).

In the range of activities done by parents together with their children - 4th graders reading aloud and shopping in bookstores can be highlighted. After the analysis of the students' data in Latvia it appeared that parents of group Z read aloud to their children once a week or more frequently in 81% of cases, but in the group of higher achievements this number is considerably smaller - 57%. Similarly 48% of group Z parents daily or almost every day talk with their children about what they have read independently; in group A this number is 31%. Consequently, these activities are observed in the families where students have lower reading literacy achievements. It is obvious that in this manner parents try to awake children's interest in the written text and improve children's literacy. In return, going to the library and the book store together with children are more frequent in group A. Only 17% of parents from group A admit that they don't go or go rarely to the library or a bookstore together with their children. In group Z, there are twice as much such answers - 36%.

Parents of children with better reading literacy achievements read more frequently themselves, too. 60% of parents in group A read 6 or more hours per week at home, in group Z - 34%.

To summarize: students reading literacy is substantially influenced by collaboration of parents and children at the pre-school age; collaboration at the age of 10 is not that important anymore, except regular joint visit of a library or a bookstore.

Student's reading outside the school

Students' reading habits outside the school differ significantly in groups A and Z. There could be a dominating opinion that each activity related with reading improves students' reading literacy. PIRLS 2001 data analysis shows that it is not true. 94% of group A read more for their own enjoyment once a week or more frequently (in comparison to 62% in group Z), read books more about a particular theme - 39% every or almost every day (16% in group Z).

The students of group Z more frequently read aloud for someone at home - 69% once a week or more frequently (37% in group A), more regularly listen to someone reading aloud - 51% once a week or more frequently (22% in group A), every day or almost every day speak about what was read with their friends (23%) and family (35%) (in group A 12% and 21% accordingly). Similarly, 59% of the students in group Z read comics once a week or more frequently, (35% in group A) and magazines - 40% every day or almost every day (22% in group A).

To summarize: reading of comics in the 4th grade can not be characterized as a factor facilitating reading literacy.

Students reading at school

If students read whatever they like at home, then at school the material for reading is appointed by a teacher. A large part of our students read to themselves quietly during the lessons every day or almost every day, however this rate is higher in group A (86% against 70% in group Z). Teachers at least once a week assign to read more at home to students of group A, in 94% of cases (87% in group Z).

Teachers use texts from children magazines or newspapers for students from group Z more often – in 80% of cases more frequently than once a month (in group A – 65%). The students of group A more frequently read “more serious” literature like different stories (52% every or almost every day in comparison to 35% in group Z), poetry (9% against 2% in group Z), some parts of fiction books at least once a week (46% against 30% in group Z), plays at least once a week (66% against 54% in group Z).

Teachers ask to explain the read texts or to prove their opinion more frequently to students from group A (77% every or almost every day against 58% in group Z), to compare the read material with their own experience (57% against 46% in group Z), to compare different read texts (15% against 9% in group Z), to guess what could happen next in the read text (28% against 18% in group Z), to characterize the style and structure of the read text (23% against 5% in group Z). The students from group Z write about something read (daily 30% against 10% in group A), write answers in workbooks (43% against 27%), and create artistic projects about what has been read (59% against 27%).

To summarize: students need time for reading to themselves quietly during the lessons; “more serious” literature has to be chosen, and teachers shouldn’t give too many written examinations.

Regression equations

In order to choose the factors mentioned above, regression equations have been developed (see Tables 1 and 2). Regression coefficients are not statistically significant for all factors discussed before. It can be seen that the highest determination coefficient goes to socioeconomic factors of the family when discussing separate groups. Various activities of the 4th graders related with reading at school give a comparatively small contribution. In addition, activities which are supposed to stimulate reading (tests, quizzes, drawings, etc. about the read text) have a negative coefficient in these equations.

Table 1. Standardized regression coefficients of different groups of factors influencing students’ reading literacy.

Groups of factors and determination coefficients	Standardized regression coefficients
Students’ gender, R²=0,08	-0.28
Urbanization factor, R²=0,26	0.51
Socioeconomic factors of a family, R²=0,56	
Amount of children books (0-10, 11-25, 26-100, 101-200, more than 200)	0.27
Have children books at home (no, yes)	0.23
Number of children in the family (1-2, more than 2)	-0.15
Have encyclopedias at home (no, yes)	0.13
Number of people in one flat (2-4, more than 4)	-0.13
Have newspapers at home daily (no, yes)	0.12
Father’s education	0.12
Mother’s education	0.12
Collaboration of a student and a family, R²=0,33	
Someone read aloud before a child went to school	0.46
Someone watched TV with subtitles together with a child before s/he went to school	-0.12
Someone played wordplays before a child went to school	0.09

Groups of factors and determination coefficients	Standardized regression coefficients
Someone reads to him/her	-0.23
Go together to a library or a bookstore	0.10
Students' reading outside school, R²=0,39	
Read for joy	0.48
Read aloud	-0.22
Listen to what is being read	-0.20
Read comics	-0.16
Students' reading at school, R²=0,26	
A test or a quiz about the read text	-0.17
Read for oneself quietly	0.11
Draw pictures about the read text	-0.11
Read aloud for a group of students	-0.10
Read books having several chapters	0.10
Read plays	0.09

All regression coefficients are statistically significant when $\alpha = 0,05$

Table 2. Standardized regression coefficients of different factors influencing students' reading literacy.

Factors and determination coefficients	Standardized regression coefficients
All factors, R ² =0,74	
Students' gender, R ² =0,08	-0.10
Urbanization factor, R ² =0,26	0.16
Amount of children books (0-10, 11-25, 26-100, 101-200, more than 200)	0.17
Have children books at home (no, yes)	0.19
Number of people in one flat (2-4, more than 4)	-0.10
Have newspapers at home daily (no, yes)	0.15
Father's education	0.09
Someone read aloud before a child went to school	0.13
Someone reads to him/her	-0.07
Read for joy	0.21
Read aloud	-0.10
Read comics	-0.07
A test or a quiz about the read text	-0.12
Draw pictures about the read text	-0.08
Read books having several chapters	0.10

All regression coefficients are statistically significant when $\alpha = 0,05$

Inclusion of all the factors into one regression equation results in even less statistically significant coefficients, as the factors mentioned above are not autonomic; for instance, in families with a higher socioeconomic position (including those where parents have higher education) more time is devoted to a child at the pre-school age.

Discussion

The results of some researches, for instance, (Linnakylä, Malin, Taube, 2004) show that the number of siblings influence students' learning achievements, namely, the more children there are in a family, the greater possibility to be in a group of students with low reading achievements. After the analysis of Latvia's data this congruency proved to be true: the students of group A on average live in smaller families.

Several authors (Bourdieu, 1986; Purves, 1973; Guthrie, 1978; Taube, 1988; Elley, 1994; Lehmann, 1996; Lietz, 1996; OECD, 2001, 2002; Fredriksson, 2002) emphasize that parents' level of education, socio-economic position of the family and cultural heritage play an important role in the learning achievements of children. The analysis of the data among the 4th graders in Latvia reveals the similar coherence between parents' education, study aids at home, financial position of the family and children learning achievements.

The actions taken by parents at the pre-school age are of great importance in students' reading literacy. A number of researches worldwide have proved that reading aloud at the pre-school age positively influences a child and his/her literacy achievements. Denton, Reaney, and West (2001); Snow, Burns and Griffin (1998) and several other authors have emphasized that reading aloud is necessary (Lyon 1999) and that the experience gained in such a way helps to create comprehension about the relation between the written word and the pronounced word (Beck and Juel 1999). The analyses of Latvian data showed the same - students reading literacy is substantially influenced by collaboration of parents and children at the pre-school age.

Conclusions

- The socioeconomic position of a family considerably influences students' reading literacy achievements. Usually children from families with one or two children have better achievements in reading literacy, they have comparatively more books and their parents have good education.
- Students reading literacy is substantially influenced by the collaboration of parents and children at the pre-school age, collaboration at age of 10 is not that important anymore, except regular joint visits to a library or a bookstore.
- Reading of comics in the 4th grade can't be characterized as a factor facilitating reading literacy.
- Better achievements in reading literacy are among the students who read different stories, poetry, parts of fiction books or plays at school at least once a week.
- The 4th grade students' written answers to the questions about what they have read, as well as artistic projects about the read material and reading aloud at school are not the factors promoting reading literacy.
- The authors recommend parents to pay additional attention to early development of child's reading literacy during the pre-school age period and teachers to stimulate students reading full texts of literary works appropriate to the primary school level and pay additional attention to promotion of reading outside the school.

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