

THE IMPACT OF THE ACQUISITION OF THE LETTERS IN A SYSTEMATIC LITERACY ON WRITING SKILLS

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Abstract

Learning letters is associated with a long-term learning. Two basic models are present in obtaining letters in a systematic literacy in Slovenia and abroad. One represents a separate acquisition of the uppercase and lowercase printed letters (sequentially) and the other deals with letters simultaneously. In practice, teachers often asked themselves, especially in times of reforms in literacy, which model of the acquisition of the letters in initial literacy is more efficient.

The research focused on the effect of the two most frequently chosen procedures for acquiring letters of structured literacy in Slovenia, namely the simultaneous treatment of the uppercase and lowercase printed letters (lowercase cursive letters and upper-case cursive letters) and consecutive treatment of letters (uppercase printed letters, lowercase printed letters, lowercase cursive letters, and at last, uppercase printed letters).

Furthermore, the focus of the research was on the impact of gender on the ability to write. The incidence of errors was observed in terms of selected procedures for acquiring the letters in groups and gender. At the same time, the effect of consolidation of writing individual letters (uppercase and lowercase printed letters in 2nd class, and lowercase and uppercase cursive letters in 3rd class), was examined.

Key words: literacy, the process of acquiring letters, 2nd class, 3rd class, prior knowledge, writing skills.

Introduction

In everyday life, people are faced with different types of letters. Adults rarely use uppercase printed letters because they are less intriguing. People use them when needed (e.g., filling out a form). Nevertheless, the pre-school children, in their own environment at home and in the world, first meet with the uppercase printed letters (Schellander, 1992; Lynch, 2009; Thompson, 2009; Strickland, 2011).

Learners in Slovenia undergo systematic literacy in elementary school. Literacy in Slovenia and around the world receives the reforms. In Slovenia, the last reform has been carried out from September 2011. It has already yielded significant changes compared to the previous literacy. The systematic acquisition of the letters has been transferred to 1st class.

A decade and a half before this change, the learners of 1st class have been encouraged in pre-reading and pre-writing skills. It wasn't until the 2nd class that systematic literacy, which was properly differentiated and individualized by teachers, has been conducted (The curriculum for the Slovene language, 1998). Teachers have been directed towards teaching. "In 2nd class, we tend to systematically address the uppercase and lowercase printed letters, usually also lowercase cursive letters, and the uppercase printed letters we address in the 3rd class." (The curriculum for the Slovene language, 1998, p. 33)

With the transition of the primary school from eight-year to nine-year schooling the latest assessments of the acquisition processes have been done. Some authors have emphasized the following advantages of the simultaneous dealing with letters compared to the consecutive: the appropriate use of capitalization, taking into account pupils' prior knowledge, cursive letters do not require a lot of graphomotor exercises, grapheme significant similarities (eight doubles: Cc, Oo, vv...) and differences (six doubles: Rr, Gg, ...), and the time acquisition (Schellander, 1992; Ropič, 1996; Ropič, 2000).

Teachers had to choose between the two processes of letters; the already traditional consecutive process (CP) and the simultaneous process (SP) for acquiring letters. Using the CP in the 2nd class they have first acquired the uppercase printed letters, then the lowercase printed letters, and in the 3rd class the uppercase and lowercase cursive letters simultaneously.

Teachers have started exercising this CP after a few years of practical realization of the aforementioned didactic principle from the curriculum of the Slovene Language (1998). By using the SP learners have acquired both, the uppercase and lowercase letters in the 2nd class and the uppercase and lowercase cursive letters in the 3rd class.

Teachers have argued on the basis of practical experience that the learners undergo literacy easier and better if they acquire only the uppercase and lowercase printed letters in 2nd class, as those are exercised until the end of the 2nd year.

The curriculum, which came into force in September 2011, does not provide for the acquisition of letters and their treatment is not limited to a particular class. It argues, however, that the learners use printed and cursive letters at the end of the 2nd class. Writing skills of learners can be checked when writing (e.g. dictation); the errors can be properly classified and the progress of pupils can be monitored (Ropič, 1996).

The simultaneous process of acquiring letters is also present elsewhere in the world. Many authors report on its effectiveness (Strickland, 2011; Thompson, 2009; Hovland, Gapp and Theis, 2011; ECall, Magnan and Biot-Chevrien, 2008; Treiman and Kessler, 2004, Turnbull Pence, Bowles, Skibbe, Justice & Wiggins 2010).

Problem of Research

Lowercase printed letters with the proper use of capitalization have certain advantages compared to the use of uppercase printed letters (Schellander, 1992; Ropič, 1996). The latter usage has been more often applied in the last decades in the early grades of primary schools in Slovenia. This led the focus of this research in the two-year study in which we wanted to examine the impact of procedures for acquiring letters of structured literacy on the writing skills of students.

Research Focus

The study focused on the acquisition of writing skills of two groups of students. Students in group A were given the simultaneous treatment of uppercase and lowercase printed letters in the 2nd class and uppercase and lowercase cursive letters in 3rd class. Students in group B have acquired letters consecutively, which means that in the 2nd class they have first acquired uppercase printed letters and then lowercase printed letters, while in the 3rd class they have first acquired lowercase cursive letters, followed by upper-case cursive letters.

Methodology of Research

General Background of Research

Teachers, doing the research, have studied the impact of the acquisition of the letters in a systematic literacy on the writing skills of students. The two-year study included students of 2nd class at the beginning of the school year that had been monitored in 2nd and 3rd class.

Sample of Research

The total of 164 pupils of elementary schools in northeastern Slovenia participated in the two-year monitoring. Only 120 students who participated in all examinations were included in the final treatment. 46.7% of the pupils were in group A and 53.3% of students in group B. The sample of students based on gender is well balanced (55.8% boys and 44.2% girls).

Instrument and Procedures

At the beginning of 2nd class we have tested the prior knowledge in six steps, namely the knowledge of letters at the image, the knowledge of letters without the image, the technique of reading words, the understanding of the reading, writing letters by dictation, and writing words by dictation.

Finding the prior knowledge of students at the beginning of 2nd class was followed by a systematic literacy of the students. By March, both groups of students have acquired all the uppercase and lowercase printed letters, namely the group A after the simultaneous procedure of acquiring letters had acquired uppercase and lowercase printed letters, and the group B after consecutive procedure had first acquired uppercase printed letters, then lowercase printed letters. We first checked the students' writing by dictation in March in 2nd class (Test 1). This was followed by the consolidation of reading and writing in the range of uppercase and lowercase printed letters until the end of the school year.

The second test of writing by dictation was done in June in 2nd class (test 2), in which we wanted to detect the effect of consolidating the writing of uppercase and lowercase printed letters. Students in all sections of an individual group have acquired all cursive letters from the beginning of the 3rd class until the end of the December, namely group A after the simultaneous procedure of acquiring letters had acquired uppercase and lowercase cursive letters, and group B after the consecutive procedure had first acquired lowercase cursive letters, then uppercase cursive letters. This was followed by the consolidation of cursive letters.

By March, the students of groups A and B have passed the third test (Test 3).

In all three experiments, we used the same wording, which was dictated in the same style.

Data Analysis

The descriptive and the causal non-experimental method of empirical research were used in the study. Data were analyzed with SPSS. The frequency distribution of the data (f, f %), parameter estimation of descriptive statistics and parametric test (t-test, two-factor analysis of variance) were used to analyze the differences between the comparative groups.

Results of Research

In order to eliminate the impact of different prior knowledge of students in each group from the initial state to a subsequent findings in the progress of pupils, it has been individually checked the students' prior knowledge and determined the status of it.

Table 1. Results of t-test differences between the two groups of students in existing knowledge.

Group	The procedure of obtaining the letters	\bar{x}	SD	F	p	t	p
A	Simultaneous	69,821	15,155	3.814	0.053	0.333	0.740
B	Consecutive	68,750	19,470				

In the case of the analysis of prior knowledge the assumption of homogeneity of variances is not statistically significant, however, the groups are well tied in number, and no important side effect on the outcome of the t-test is expected. Thus, the usual test and its approximation show that there is no statistically significant difference in prior knowledge ($p = 0.740$) between the comparative groups (A and B). Students of both groups had a heterogeneous knowledge. Teachers of both groups were familiar with the prior knowledge of students and they took into account the differentiation and individualisation of systematic literacy.

Table 2. Basic descriptive statistics of the number of errors in the 1st, 2nd and 3rd test.

Test	Min	Max	\bar{x}	SD	Skewness	Kurtosis
Test 1	2	76,00	21,732	14,342	1,275	1,562
Test 2	0	95	11,471	12,506	3,709	20,041
Test 3	0	67	7,562	8,797	3,507	19,534

Averages show that the number of errors, regardless of the procedure for acquiring letters, is falling eventually, whereas variability, as shown in the share of the arithmetic mean which takes the standard deviation, grows. All three distributions of errors are quite right asymmetric (in particular 2nd and 3rd measurement) and tapered. Written products of students with fewer errors are dominating. It cannot be ignored all those students of both groups (A and B) who are still having serious problems at this stage of education.

Table 3. Results of t-test of differences between students with regard to the process of acquiring the letters in the number of errors in three tests.

Measurements	The process of obtaining letters	\bar{x}	SD	F	p	T	p
Test 1	Simultaneous	23,90	14.84	1.20	0.274	1.52	0.130
	Consecutive	19,71	13.68				
Test 2	Simultaneous	10,55	7.86	2.75	0.100	0.70	0.482
	Consecutive	12,29	15.55				
Test3	Simultaneous	6,83	5.74	3.46	0.065	0.78	0.432
	Consecutive	8,19	10.79				

In all three measurements, the assumption of homogeneity of variance was justified. The results of t-test show that there is no statistically significant difference in the number of errors between the groups with regard to the process of acquiring letters (simultaneous, consecutive). The analysis of individual types of errors shows that the groups do not differ statistically in this aspect. The arithmetic mean of the number of errors shows a greater number of errors in writing by dictation in March in 2nd class by students who have acquired letters simultaneously, compared to their peers.

Table 4. Results of t-test of differences by gender in the number of errors in three tests.

Measurements	Gender	\bar{x}	SD	F	p	t	p
Test 1	Male	25,051	15.26	1.95	0.165	2.66	0.009
	Female	17,880	12.24				
Test 2	Male	13,915	15.18	5.17	0.025	2.33	0.022
	Female	8,267	6.59				
Test 3	Male	9,424	10.34	3.03	0.085	2.51	0.013
	Female	5,174	5.51				

In the second measurement, the assumption of homogeneity of variance is not justified; therefore, it is referred to the approximate method of t-test, and with the other two, where the assumption is justified, it is referred to the outcome of the usual t-test. Results show that boys and girls differ statistically significantly in achievements in all three tests, where the effect of gender is medium-sized. Boys, as seen from arithmetic, have made more errors than girls in the total number of errors.

Table 5. Results of two-factor analysis of variance of checking the effect of interaction between group and gender of the third test.

		\bar{x}	SD	F	p
Group	A	6,837	5.74	0.159	0.691
	B	8,196	10.79		
Gender	Male	9,424	10.34	5.716	0.019
	Female	5,174	5.51		
Group A	Male	7,600	5.87	2.162	0.145
	Female	6,042	5.62		
Group B	Male	10,765	12.60	2.162	0.145
	Female	4,227	5.36		

The groups of students who were given simultaneously (A) and consecutive process of acquiring letters (B) in a systematic literacy do not statistically significantly differ in the number of errors ($p = 0.691$). The effect of gender is detected, because it is statistically significant ($p = 0.019$). Boys have made more errors in writing. The interaction between gender and literacy method is not statistically significant.

Discussion

Learning letters is associated with a long-term learning. Two basic models are present in obtaining letters in a systematic literacy in Slovenia and abroad. One represents a separate acquisition of the uppercase and lowercase printed letters (sequentially) and the other deals with letters simultaneously. In practice, teachers often asked themselves, especially in times of reforms in literacy, which model of the acquisition of the letters in initial literacy is more efficient.

In the simultaneous acquisition of letters in the initial literacy there is a significant impact of the visual element, which is also emphasized by foreign authors (Schellander, 1992; Thompson, 2009; Strickland, 2011). The advantages of the simultaneous acquisition of letters is also reflected in a certain proportion of the similarity of the uppercase and lowercase letters (eg. C c O o ...).

The knowledge of a good practice abroad where learning letters simultaneously (e.g. the uppercase and lowercase letters at the same time) has proven successful, has designed a question or hypothesis on whether this model of acquiring letters can also be efficient in Slovenia. Although there is no similar study of the impact on the acquisition of letters in a systematic literacy on student's writing skills, we decided to do this study, as it is topical for Slovenian area.

The study confirms that the simultaneous treatment of letters is also effective in the literacy of students in the Slovenian language. Furthermore, it reminds us that learning abstract letters is a long-term learning. In the initial learning, there is a significant impact of student's individual abilities. The exercise or using the acquired knowledge in a functional use, on the other hand, has an important influence on the literacy efficiency. That last part is also proven in a foreign language research (Thompson, 2009; Strickland, 2011).

Conclusions

By examining the processes we have tried to answer the frequently asked question by teachers, whether to choose simultaneous or consecutive process of acquiring letters in the systematic literacy. We have found that there is no statistically significant selection of the process of dealing with letters, so we think teachers should choose one that will be appropriate for their students. They can choose between the consecutive and the simultaneous process of acquiring letters.

All three tests show that the number of errors regardless of the process of acquiring the letters falls eventually, and that written products of students with fewer errors are dominating, but in both groups, we find students who have major problems in the area of writing skills. The results reveal significant individual differences between students of the two groups in the area of writing.

Students have achieved the greatest progress in writing by dictation and reduced the number of errors during the consolidation of writing with lowercase printed letters using the capitalization from March to June in 2nd class. In the following of the systematic literacy with cursive letters in 3rd class and of the re-testing, we note a significantly lower reduction of errors in writing.

The results show that boys and girls differ statistically significantly in achievements in all three tests. Boys have made more errors than girls in the total number of errors. The interaction between gender and literacy method is not statistically significant.

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