

# ORTHOGRAPHIC SKILLS AND TEACHING ORTHOGRAPHY IN LIGHT OF THE RENEWED ESTONIAN LANGUAGE SYLLABUS

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## **Abstract**

*The National Curriculum is a document that prescribes the bases of teaching. All the issues in the National Curriculum are compulsory for each teacher. The issue of spelling skills in the curriculum has always had an active feedback, either positive or negative, among mother tongue teaching specialists in Estonia. Therefore, before starting the next curriculum reform, it is reasonable to analyze former versions and to research what is actually fulfilled or not in the real school life.*

*The modern viewpoint of teaching spelling, described by keywords such as the usage of language and focusing on the text, is the basis of renewing the syllabus of mother tongue in Estonia. It means that orthography is taught and evaluated from the basis of informal teaching approach or in other words, by taking into account the language using situation and/or the language using purposes in teaching orthography. It has a clear and convincing scientific basis and ground, which is described also in the current article.*

*Strong scientific ground and the results of studying the writing skills in students' independent pieces of writing gave a foundation to claim that the curriculum reform team in Estonia is on the right path. The results of the study also confirmed that orthographical skills and knowledge are acquired more effectively and consciously, when they are learned in the environment, where they are really needed or in other words, connected with the process of writing texts. The fact that the most frequently used words are written correctly even at the end of the first stage of compulsory school, makes it possible to draw more attention to teaching syntax, punctuation and writing different texts in different purposes at the 2<sup>nd</sup> stage of compulsory school.*

**Key words:** native language pedagogy, orthography, spelling, curriculum, writing skills.

## **Orthography in the Curricula Dating Back to Different Periods**

In Estonia Estonian as the native language has always held an important place and role in the national curricula dating back to different periods. Whereas the orthographic skill (spelling and punctuation skills) is one of the most visible native language skills, which is also very easy to assess (mistakes are easy to identify and count), the importance of it has always been an issue of debate along with the ways of teaching the language.

Orthography is an act of politeness towards the reader. Mastering orthographic skills

makes writing easier and the texts have a higher quality. Nobody has doubts about the importance of teaching orthography, but this does not necessarily have to mean learning rules by heart and drilling these in exercises (Peterson, 2000).

After the renewed versions of syllabus were made public, the topic of the volume and the way of presenting the language training (including orthography) raised a heated discussion. Mostly the same issues are treated: should the content of teaching orthography be presented separately or in connection with constituent skills; to what extent should the content of teaching be explained and how detailed should it be; to what extent the curriculum should prescribe the recommended ways of teaching; which principles should the teaching activities and study results be based on, etc.

Despite of the lack of systematic research on the application of the principles, the aims, and the content of study of the curricula (at least in respect to orthography) there have been linguists and teachers, who during the period between the two versions of the curriculum have spoken up in the media with arguments both for and against the issue.

Johannes Valgma (2008) asserted in his article „The grammar of the living language”, published in 1966 that:

.. in 1956 new programs for the Estonian language were put together, which compared to the previous versions put considerably more stress on the practical aims of language training and no longer extensively focused on treating such topics that were not directly linked with the main aim of acquiring Estonian – using the language better... (Valgma, 2008, 88).

He adds that although during the past decade programs had more or less the same level teachers complained that the material they taught was too difficult and uninteresting for the basic school students. In the given collection an interested reader finds responses to this and to other similar articles by J. Valgma. In brief it could be said that most of the responses favored J. Valgma's position that language training should first of all focus on teaching reading, speaking, writing and thinking and the rules of grammar should be introduced only to the extent that is necessary for achieving the given aims (Valgma, 2008).

Based on the articles by scientists, who have studied the linguistic skills of primary school students (Grades 1–4), we recognise that until the new curriculum was validated in 1996, the prevailing way of teaching Estonian, which focused on language as a system, and teaching language and writing that focused on orthography and grammar, did not lead to achieving the desired language competences (Puik, 1989; Sepp, 1989; Siilbek, 1987).

From the 1960s to the 1970s the paradigm in education changed. Instead of focusing on linguistic norms the native language teaching started to pay attention to the usage of language and communication (Aava, 2006). In Estonia the 1<sup>st</sup> and the 2<sup>nd</sup> stage of the curriculum reform is well connected with the aforementioned paradigm. During the 1<sup>st</sup> stage of the reform in 1987–1990 the tendency was towards reproducing the Estonian nation. In teaching the native language the specialists brought developing the communicative skills to the foreground. Integrating language and literature was held highly important. This led to joining the language and literature teaching in the basic school. The reform was followed by strong resistance among teachers (Aava, 2006).

The curriculum adopted in 1996 established that the primary domains of teaching Estonian are the constituent skills of linguistic communication (reading, writing, listening, speaking), linguistic knowledge, and literature. However it is added that:

.. Linguistic knowledge is above all the basis on conscious language usage. It is necessary to attain expressive self-confidence, which is achieved through knowledge on language as the sign system, the variability of a language and the possible styles, oral and written language, functional styles, dialects related to it... (RT I, 1996, 65–69).

Thus, compared to the previous syllabus the need to and the importance of connecting linguistic knowledge with the language use situations is more clearly stressed.

In order to determine the extent to which the aims and teaching principles established in the curriculum had been applied, a corresponding questionnaire was conducted among distance learners and the class teachers undergoing in-service training (Uusen, 2000; 2002). The answers provided by 43 teachers showed that in their opinion they spend 25% of the time allocated for teaching Estonian on language training. Whereas in the given study the object was writing, teachers were asked to provide assessment on the proportion of activities related to writing in the part of the lesson allocated for writing. The study results showed that a greater part (28%) of the lesson was spent on teaching grammar and orthography, whereas 18% of the time planned for writing was spent on writing essays and other papers. Therefore, for the most part orthography was dealt with as a separate skill, not as a natural part of creating a text. In the same questionnaire most of the teachers formulated the main aim of writing in the same way as it is formulated in the curriculum; only a few teachers saw it as mastering orthographic and handwriting skills, coping in the following stages of school, etc. As the most common writing tasks the respondents noted cloze texts for practicing grammar, writing a story in different variants, retelling stories, exercises, doing workbook and textbook exercises, and dictations. This leads the author of the article to a conclusion that although teachers were aware of the aims established in the subject syllabus, they did not know or they were not aware of the activities and teaching methods that could be used for achieving the aims.

The curriculum that was adopted in 2002 is not much different in respect to the Estonian language syllabus. The approach to grammar and language issues are treated in greater detail and offer more practical instructions, also pointing out the importance of proceeding from the need of the text.

.. The aim of teaching grammar is to provide individuals with basic grammatical skills and an overview of the structure of the Estonian language. The approach to linguistic issues have an applied nature, it covers equally grammar and enhances vocabulary. The task of teaching is to raise the awareness in the variability of the language and the utility possibilities of linguistic forms. ... Teaching grammar and literature both deal with texts, but from a different aspect. These domains are connected by composition, through which students get an overview of texts with various functions ... (RT I, 2002, 885–893).

However, grammar in the learning content is presented in detail and separately from composition and in respect to study results both in stage 1 and 2 a third is directly related to orthography, although the formulation is usage-based (a graduate of Grade 6: is able to correctly write the length of sounds; use i and j; h at the beginning of a word; is able to apply the basic rules of consonant combinations, etc.) (RT I, 2002: 892). This gives the teachers the freedom to interpret the basis of teaching orthography from the viewpoint that suits them the best. Thus it might be that the issues established by the curriculum are not applied in the light of the aims.

The trends of teaching Estonian that emerge in the aforementioned syllabus lean on the developmental theories well approved nowadays and on constructivist approach to learning, which sees learning as a result of a student's own action, and applying these in practice should be self-evident and effective. Nevertheless, some experts and teachers assert that the expected results are not achieved (Hennoste, 2004; Maila 2003; Puik, 1997).

Probably such writings served as an impulse, which in 2006 launched another curriculum renewing process, which, however, did not end in adopting a new national curriculum for basic schools. The project for developing the subject syllabus for Estonian as the native language caused an extensive discussion, where the viewpoints of the proponents of different

approaches to grammar and orthography were confronted. The authors of the syllabus publicly declared that they purposely increased the proportion of grammar, including orthography, which in the previous curricula (1996 and 2002) had in their opinion been unacceptably small (Hein et al, 2007). For argumentation they gave a short overview of articles published in the media, the authors of which claimed that as a result of the syllabi adopted in 1996 and 2002 students have poor Estonian language skills, including orthography (Hein et al, 2007).

The opposite side argued that the structure of the subject content and the learning content do not meet the demands of the modern principles of teaching Estonian, the keywords of which are communicativeness and the whole language (Aava, 2006; Kerge, 2006; Uusen 2006; 2007). In the given project the learning content was organised in two domains: writing and language training, and reading and oral speech. Proceeding from the principle that a language can be classified based on form and function it must be recognised that the project of the given subject syllabus did not proceed from neither of these. Neither did it qualify as a classification proceeding from the constituent skills of linguistic communication. The learning content of writing and language training mostly consisted of orthographic knowledge and the expected results were limited to the word level. For example, a Grade 2 graduate was expected to be able to: in a word find and write correctly vowel combinations and consonant combinations without plosives; write dictations of maximum 25 words of length consisting of familiar linguistic forms; write the letter *h* at the beginning of familiar words, write the letters *i* and *j* at the beginning of a word and a syllable, etc. In this context it is highly understandable that a reproach was made against the project of the given syllabus: the learning results are not the only aim of using a language; one should rather be able to use the language with different intents in various communication situations with different people.

Another attempt to renew the curriculum was made in 2008. Keeping that in mind we will give an overview of the theoretical basis of teaching orthography, paying closer attention to these trends that represent the modern principles of teaching Estonian and support the viewpoints expressed in the new Estonian language syllabus for basic schools (Põhikooli eesti keele ainekava, 2009).

### **Theoretical Basis of Teaching Orthography**

The general principles of teaching orthography to great extent agree with the general principles of teaching grammar, although not in every publication treating the didactics of Estonian is the spelling of words related to teaching grammar. Some authors have related it to vocabulary or treated it as an entirely separate topic (Rosencrans, 1998; Templeton, 1997). In the teaching that focuses on the process of writing, checking and correcting spelling is the last stage of writing before the piece is finished (Linnakylä et al, 1989; Templeton 1997, 231–283).

Approaches to teaching grammar and orthography can be divided in two: formal and informal. The first is also called traditional, open or direct teaching, while the other is also known as holistic (focusing on the whole), concealed or indirect teaching; lately it has also been named a contextual (focusing on the context or text) or functional approach (focusing on the circumstances or purpose of usage) (Harris & Hodges, 1995, 89; Richgels, 2003, 150–153). For both of these trends there are both pros and cons; both have their strengths and weaknesses, their function and role (Rosencrans, 1998, 4–6).

The essence of the approaches is simple. Teaching formal orthography means moving from the sound-letter level to the text level or from the rule to the language usage situation. In non-formal teaching the direction is opposite. The keywords of traditional teaching are sound analysis, clear rules of orthography, drill exercises, systematic dictations and orthography tests. The learning activities focus on the isolated phonetic and structural rules and they sup-

port the viewpoint that the main aim of leaning orthography is to do well in dictations and tests.

One indicator of non-formal orthography teaching is the fact that the matter to be taught is derived from students' own language or in terms of orthography – from students' writings. The difference with formal teaching lies in different aims of teaching, which among other things are developing meta-cognitive skills; learning orthography through the process of writing, not through giving correct answers; and developing the understanding instead of learning rules by heart (Peterson, 2000). Learning a language does not replace using the language (Rosencrans, 1998, 6–7).

On these grounds teachers are advised to be aware of several principles when planning how to teach orthography:

- Learning orthography is rather an active conceptual process than learning rules by heart. Learning orthography above all means to group words and to make generalisations about words (Templeton, 1986).
- Orthography needs to be associated with learning purposeful writing and language in general. Improving orthography should be a natural everyday activity accompanying writing.
- Students have to understand that orthography has certain unique aspects. It is the connecting link between oral and written language. The particular function of orthography is to present language graphically through handwritten or typed text.
- Students seldom make occasional orthographic mistakes, which means that though analysing students' mistakes teachers can put together their personal strategy for teaching orthography (Rosencrans, 1998, 9).
- The modern aims of orthography should focus on teaching necessary strategies for learning orthography (e.g. grouping words by similar spelling; finding regularities in the spelling of words, etc.).
- An important part of teaching orthography is the ability of distinguishing between words written correctly and incorrectly, which would aid in correcting the mistakes and also eliminate the reasons such mistakes occur. This means developing meta-cognitive skills. If a student knows, which words he or she always writes correctly and which are the words he or she is liable to write incorrectly, he or she can check the spelling of words that are mistake-prone using various source materials (desk-mate, dictionaries, teacher, etc.) (Blockand & Peskowitz, 1990).
- Students need to become aware that orthography is very regular and everyone can discover these regularities for him- or herself (Dahl & Farnan, 1996, 61–70; Donoghue, 1991, 257–258).

Similarly to teaching grammar teaching orthography is also a topic of heated discussions. Whether it should be taught, how and how much, are issues most frequently discussed about in articles treating the topic. For example, Steve Graham (2000) argues that it is partly true that younger students, who have not systematically been taught formal orthography, cope equally well with spelling as those, who have been taught. The researcher R. Paul reached the same conclusion already in 1976; among other things he noticed that if a child is allowed to independently and voluntarily read and write already at a very early age, he or she naturally develops an interest in orthography and the child starts to think about it (un)consciously (Richgels, 2003, 148–149). Studying the effectiveness of formal orthography in Grade 1 it became evident that students were able to correctly spell many words already before they were taught orthographic rules (Rymer & Williams, 2000). L. K. Clarke (1988) found that Grade 1 students, who had been encouraged to write freely, without thinking too much about correct spelling, were more interested in writing and wrote longer texts than the students, who were systematically instructed to follow the orthographic rules. With older students, who

have problems with learning and spelling or for whom the language they learn is not a native language, the best results have been obtained by purposefully and systematic combining the formal and natural teaching. Spelling can be taught to them directly, but with understanding that traditional methods of teaching orthography do not necessarily have to guarantee students' success. Rather, it is useful to teach orthography through meaningful activities both in language lessons and in "educational moments" (mini-lessons) in other subjects (Graham, 1999; Rosencrans, 1998; Zutell, 1996). It has to be asserted that teaching the aforementioned children, direct teaching is considered highly necessary (McNaughton, 1994). Generally, teaching orthography should be as individual and creative as possible. Using a computer has also yielded very good results (Ediger 1998; Lewis et al, 1999), especially in case of children with writing disability.

Whereas the main aim of teaching orthography is the competence of writing, the orthographic skill should be assessed and analyzed based on the texts students have written independently. Therefore the orthographic skills of the 1<sup>st</sup> and 2<sup>nd</sup> stage students of basic school were studied based on writings from 740 students (Uusen, 2006b).

The general aim of the aforementioned study was to raise the awareness in the complexity of writing and the writing skill and to give a corresponding general overview of the writing skills of the 1<sup>st</sup> and 2<sup>nd</sup> stage basic school student, including explicit description of orthographic skills.

## **Methodology of Research**

### The principles of data collection

To collect the data, texts from students in Grades 3 and 6 were collected with the help of distance-learning students (working as class-teachers) of Tallinn University.

Each distance-learning student, supervising the writing process, freely chose one Grade 3 or Grade 6 class as the writers, but the class could not be the supervisor's own class. The students were explained the writing task and they were encouraged to act during writing exactly as they would during a regular lesson. The only difference from the habitual writing situation was that writing was not preceded by an oral discussion. Each student was allowed to prepare for writing in a suitable or habitual way. The writing period lasted for 90 minutes at the maximum, which corresponds to two lessons. Students could finish writing and submit their work earlier.

The supervisor of the writing process read the tasks to the students, wrote these on the board or gave each student a printed copy of the tasks and then students began writing individually. Students were to choose between two writing tasks: narrative and convincing writing.

### *Research participants*

740 students from 37 schools participated in the writing skill study. 472 text from Grade 3 students and 268 texts from Grade 6 students were collected. The schools in the study were selected randomly by the principle that most of regions of Estonia and both types of schools (basic schools and gymnasiums) would be represented.

### *The principles of data analysis*

Data processing and analysis were conducted by using *Microsoft Excel* program. The data was analyzed mainly on the basis of the mean values ( $\bar{x}$ ) (certain data also on the basis

of per cents values) by different aspects (word choice, sentence fluency, spelling and ideas), comparing the results from Grade 3 and Grade 6 students and the results from each grade separately. Also the results of boys and girls were compared, as well as the results by types of texts.

In order to study the connection between different aspects of the writing skill linear correlation values were used (marked with  $r$  in the paper). In case the degree of connection was discovered on the basis of the corresponding data from the sample as a whole, the critical value of the correlation coefficient (marked as  $r_{\text{critical}}$ ) is the critical value of the correlation coefficient of the sample with 1000 pairs of elements or 0.05. The critical value of the correlation coefficient of the corresponding data from Grade 3 is 0.34 (sample with 25 pairs of elements) and based on the data from Grade 6 the critical value of the correlation coefficient is 0.50 (sample with 12 pairs of elements). The statistical significance of the differences of the samples' averages was measured by the Student t-test (t-test: Two Sample Assuming Equal Variances; t-test: Two Sample Assuming Unequal Variances) (marked with  $p$ ). 0.05 was chosen as the significance level and it was marked with  $\alpha$ . In order to choose the correct t-test (whether the sample had equal or different dispersion) the F-test was carried out (F-test: Two Sample for Variances). In order to determine the dispersion of the values of the qualities of statistical series variation coefficient and standard deviations were used.

Each grade was marked with a different number, whereas the numbers were given randomly according to entering the data in tables.

Students' writings can be assessed on the basis of various criteria: 1) indirect (quiz, dictation, test); and 2) direct (text): a) main characteristic indicators (one general aspect is assessed); b) holistic (one mark is given on the basis of the general impression); and c) analytical (several components or indicators characteristic to effective writing are assessed).

In the given study the principle of analytical assessment was used for assessing the pieces of writing; four indicators were assessed: a) word choice; b) one of the most important components of communicative competence – sentence fluency; c) other aspects of correct usage of language (orthography, orthology); d) ideas (Bellamy, 2005; Six Trait, 2005; Spandel, 2006; Tierney & Marielle, 2004).

Whereas the focus of the present article is on the orthographic skill, only pertinent study results are introduced below.

## Results of Research

Orthographic errors (word mistakes and sentence fluency mistakes were grouped with other indicators) were treated as spelling mistakes, which were classified as follows: sound orthographic mistakes, solid and separate writing mistakes, punctuation mistakes (were calculated as a half of a mistake), capital and lower case initial letter mistakes, and slips, e.g. omitting letters, switching letter order, missing of diacritic marks (dots, lines) etc. The latter were not included in the general amount of mistakes. Although when assessing orthography at school attention should also be paid to what children at a certain age should know, for the sake of objectivity in the given study all the orthographic errors in the Grade 3 students' writings were regarded as mistakes. Recurring errors were regarded as one mistake.

First a general overview of the mistakes. Although the total amount of mistakes and the average number of mistakes per student do not give objective information (a student who writes 100 words makes a larger amount of mistakes than a student, who writes 10 words) on the situation, and the number of mistakes per word serves as the basis of the further analysis, it is rational to give a general overview to illustrate the situation.

Altogether 96,262 words were written, 4,773 or 5% of which had an orthographic mistake (including punctuation mistakes). The Grade 3 students made the total of 3215.5 mistakes and the Grade 6 students made 1557.5 mistakes, but the Grade 3 students formed nearly 2/3 of the whole sample. The largest number of mistakes was punctuation mistakes (3,380), whereas the Grade 3 students did not have significantly more mistakes (1,961 mistakes) compared to the Grade 6 students (1,419 mistakes). However, the Grade 3 students made significantly more sound mistakes (1,542 mistakes in Grade 3 and 463 in Grade 6).

The percentage of solid and separate writing mistakes was relatively small (721 mistakes or 15% of all the mistakes) and the smallest number of mistakes was made in using capital and lower case initial letters (357 mistakes or 7% of all the mistakes). Grades 3 and 6 had an equal number of the mistakes.

Next, about the average indicators. Each student had an average of 6.45 orthographic mistakes, whereas it became evident that there were no statistically significant differences between the number of average mistakes in Grade 3 (average of 6.81 mistakes) and Grade 6 (average of 5.81 mistakes) students ( $p = 0.93 > \alpha = 0.05$ ). This means that on an average the students in either stage made the same amount of mistakes, although one would have expected a lot less mistakes from Grade 6 students. A possible explanation would be the considerably larger number of words from Grade 6 students. This allowed to draw the conclusion that it would be more objective to analyse orthographic mistakes on the basis of the number of mistakes per word. Analysing the averages of punctuation mistakes only supported the decision, because it became evident that on an average Grade 6 students made more such mistakes than Grade 3 students ( $p = 0.049 < \alpha = 0.05$ ). However, knowing that Grade 6 students used more compound sentences than Grade 3 students, the statement is not very fair. In the second stage the averages of punctuation mistakes were rather strongly correlated with the average number of compound sentences ( $r = 0.82 > r_{\text{critical}} = 0.05$ ). This means that most of the comma mistakes were made in compound sentences. In Grade 3 the correlation was considerably weaker ( $r = 0.50 > r_{\text{critical}} = 0.34$ ), which means that Grade 3 students were liable to make punctuation mistakes also in simple sentences (e.g. punctuation at the end of a sentence, comma in the wrong position, etc.). Thus it is proven that the average number of mistakes does not objectively explain the orthographic skill.

#### *Amount of punctuation marks per sentence*

As the previous discussion showed, the mistakes related to punctuation and to the spelling of words (sound orthography, solid and separate writing, capital and low case initial letter) should be analyzed separately for the sake of objectivity. It seemed that analyzing the punctuation mistakes based on the number of sentences made the most sense.

Punctuation mistakes per sentence and the number of sentences had weak negative correlation ( $r = -0.29 > r_{\text{critical}} = 0.05$ ). This means that the more sentences a student wrote the less punctuation mistakes he or she was liable to make. Since with the increase in the number of sentences the number of orthographic mistakes per sentence slightly decreased a conclusion might be drawn that the principles of punctuation belong to the acquirable knowledge; i.e. once the student has acquired the principles of punctuation the sentences are written correctly regardless of the number of sentences. Thus, in order to decrease the number of punctuation mistakes the principles of punctuation must be taught to students rather through conscious understanding of the syntax structure than through simply learning rules by heart (Wilde, 1996). This can also be done on the basis of sentences, but naturally different sentence structures emerge in creating different types of texts.



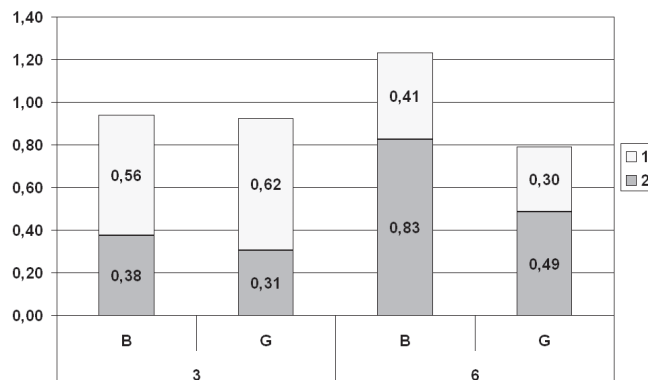


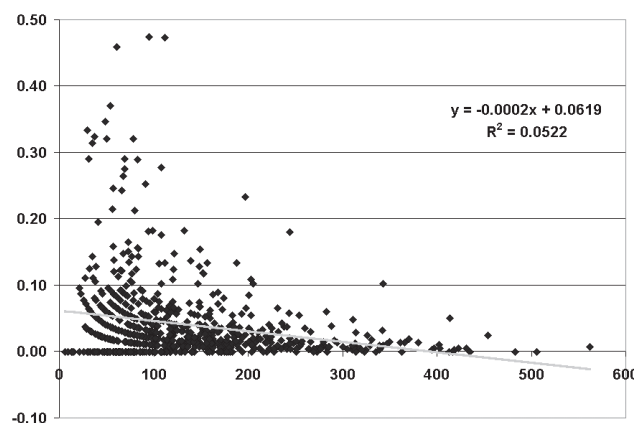
Figure 1 gives an overview of the average numbers of punctuation mistakes per sentence by classes (Grades 3 and 6), by gender (girls G, boys B) and by type of text (narration 1, convincing writing 2).

**Figure 1. Average number of punctuation mistakes per sentence (vertical axis) by classes (Grades 3 and 6), by gender (girls G, boys B) and by types of text (narrations marked by 1 and convincing letters by 2).**

In all the average of 0.49 punctuation mistakes were made per sentence, which shows that almost every other sentence contained a punctuation mistake. Students in the two stages made an equal amount of punctuation mistakes (0.54 mistakes in Grade 3 and 0.40 mistakes in Grade 6) – the difference was not statistically significant ( $p = 0.59 > \alpha = 0.05$ ). The reason for the mistakes of the older students could have been (but was not necessarily) the bigger amount of compound sentences.

### *Spelling mistakes per word*

Spelling mistakes were the following: solid and separate writing mistakes, sound orthography mistakes and capital and lower case initial letter mistakes. As said before it seemed wise to compare the mistakes per word, because it was obvious that the average of the total orthographic mistakes would be bigger in classes, where the average number of words per text is bigger. For the sake of clarity in the analysis the spelling mistakes in words will simply be named orthographic mistakes (comprising solid and separate writing mistakes, sound orthography mistakes, and capital and lower case initial letter mistakes).



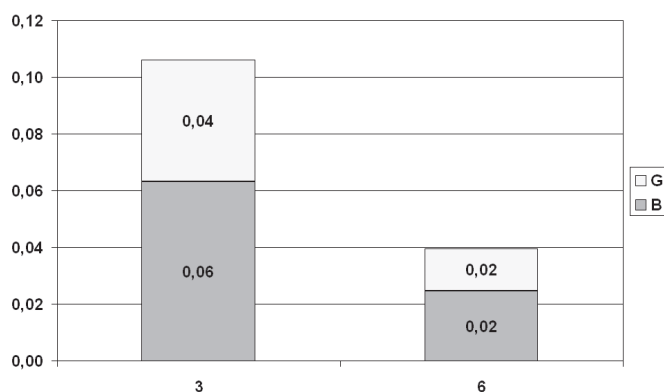
Orthographic mistakes per word and the total amount of words had weak negative correlation ( $r = -0.23 > r_{\text{critical}} = 0.05$ ).

**Figure 2. Linear correlation between the total amount of words (horizontal axis) and the orthographic mistakes (vertical axis).**

As the figure shows (see Figure 2), the correlation is not very strong, but valid. This means that students, who wrote more words, did not necessarily make more orthographic

mistakes per word. But the correlation was more negative between the average amount of orthographic mistakes per word and the mark given for the content ( $r = -0.32 > r_{\text{critical}} = 0.05$ ). The more mistakes there were per word in a text, the lower the mark tended to be. Thus, orthographic mistakes could have negative impact on the content of the text. This is quite understandable, because reading a text that has a lot of orthographic mistakes is not very interesting and the meaning of the story might get lost. Whereas checking the spelling in one's own text is often rather dull for students, comparing two texts with different amount of orthographic mistakes would be quite informative. Maybe that would make students understand, why it is important to work on a text.

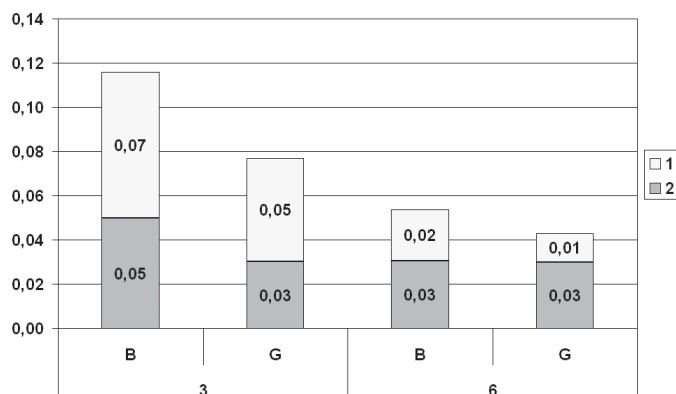
In all, an average of 0.04 orthographic mistakes were made per word: 4% of all the words were written in a wrong way. The Grade 3 students had 0.05 (5% of the words) orthographic mistakes per word and Grade 6 students had 0.02 (2% of the words) mistakes



per word. The difference was statistically significant ( $p = 0.0008 < \alpha = 0.05$ ). This shows that during the second stage an important change has occurred in the orthographic skills and it supports the idea that comparing and assessing students' orthographic skills instead of using the total amount or the averages of mistakes it is more objective to focus on the number of word spelling mistakes per word.

**Figure 3. Average amount of word spelling mistakes per word by classes (Grades 3 and 6) and by gender (girls G, boys B).**

Both boys and girls in Grade 6 (see Figure 3) had significantly less orthographic mistakes compared to Grade 3 students. Students of both genders have done considerable advancements in orthography in three years. An important part of it is on children's general development, especially on the development of the skill to distinguish the exact composition of sounds as well as on the fact that in the second stage students learn to write also the more typical words with irregular spelling.



**Figure 4. Average amount of word spelling mistakes per word (number on the bar) in Grade 3 and 6 boys (B) and girls (G) by text types (narrations marked by 1, convincing letters by 2).**

In general, an equal number of orthographic mistakes were made in narration and convincing letters (see Figure 4). In both text types there were approximately 0.04 orthographic mistakes per word. However, by classes and text types the situation was somewhat different. While in convincing texts students in both stages made an equal number of orthographic mistakes ( $p = 0.63 > \alpha = 0.05$ ) then in narrations Grade 3 students made significantly more mistakes ( $p = 0.0005 < \alpha = 0.05$ ). This could have partly been due to the choice of words, because due to the topic the younger students were to use also words, the spelling of which they did not quite know yet (e.g. *loomaaiaas*, *direktor*, *loomade talitaja*, *unerohi*, *väljapääs* etc). Studying the orthographic mistakes made by boys and girls it became evident that both the boys ( $p = 0.02 < \alpha = 0.05$ ) and girls ( $p = 0.002 < \alpha = 0.05$ ) in Grade 6 made as many mistakes in convincing texts as did Grade 3 students. This was somewhat unexpected, because while Grade 3 students had difficulties with the spelling of such words as *veekeskus*, *lõbustuspark*, *tsirkus*, *tivoli* etc. then Grade 6 students should have already known the spelling of words that are rather frequent at school.

## Discussion

There have been two successful (in 1996 and 2002) and one not successful (in 2006) curriculum reforms in Estonia during the second independency period. Failure in 2006 showed that curriculum development should be based on the results of scientific research. Therefore in the study, which main purpose was to map writing skills of students, among other things the orthographic skills of the 1<sup>st</sup> and 2<sup>nd</sup> stage students of basic school were studied.

In brief it could be said that the analysis of the total number of orthographic mistakes showed that the number of words with an orthographic mistake (only word spelling mistakes) was not big (4% of the total number of mistakes). The study also showed, for example, that the number of sentences with a sentence fluency mistake was considerably bigger (13% of the total number of sentences). Whereas the sentence fluency skill is above all related to purposeful creation of a text, stressing it in the renewed curriculum is well justified.

The fact that there were no statistically significant differences between the number of average mistakes in Grade 3 and Grade 6 and an average Grade 6 students made even more punctuation mistakes than Grade 3 students proved that the average number of mistakes does not objectively explain the orthographic skill. For example, if the decision is made only on the basis of the average indicators, it might seem that in the second stage students do not learn anything in respect to orthography or that most of the orthographic skills are acquired in the first stage. In fact, the latter found support also in Klair Sinisalu's Master's thesis (Sinisalu, 2006). The same tendency has been noticed also by researchers in other countries (see above), which allows to agree that the learning content in the second stage could be more comprehensive, because probably many skills are acquired already in the first stage. Including such skills in the second stage syllabus enables the teacher to focus on students, who need more time and individual attention to learn orthography.

Studying punctuation mistakes more closely generated an idea: in order to fairly assess students' word spelling skills the punctuation mistakes should be separated from the total number of orthographic mistakes, because they have nothing to do with the spelling of words. They should rather be studied in conjunction with the sentence fluency or simply separately from the spelling of words. Many researchers have done just that (Barnitz, 1998).

The study results gave reason to believe that students' knowledge in orthography cannot be assessed only on the basis of the number of orthographic mistakes. The number of written words (in case of punctuation marks the number of sentences) should be taken into account, which presumes teaching and assessing orthography in the environment and in the situation, where these are needed or in the context of using the written language. The renewed

curriculum draws special attention to the issue.

Students in the second stage would need more opportunities to practice using punctuation in sentences, which should be taken into account in drawing up the syllabus. Whereas the punctuation of simpler compound sentences is taught in the second stage, one would have expected a better result in that respect. In case of Grade 3 students' comma mistakes should not have been included in the analysis. At school these should not be regarded as mistakes that lower the mark in stage 1 students, or if, then only in sentences with the most common conjunctions. The renewed syllabus takes this suggestion into account (Põhikooli eesti keele ainekava, 2009, 7).

Weak negative correlation between orthographic mistakes per word and the total amount of words and even stronger negative correlation between the average amount of orthographic mistakes per word and the mark given for the content support the idea that the more words a text includes and the more meaningful it is, the fewer orthographic mistakes it has. Probably we have here the same mechanism we see in using a computer: the student is so caught up with creating an interesting content and at the same time he or she is not focusing too much on orthography. Due to that many mistakes are avoided. Therefore, in respect to teaching orthography it is important to stress in the syllabus the importance of writing different types of texts that take into account students' interests. Teachers should also pay attention to the importance of following the principles of process writing, because it enables students to revise their text before they submit it to the teachers.

Although the study results proved that the orthographic skills have improved significantly during the second stage, it unfortunately applied only to students, who wrote narrations. The students, who wrote convincing texts made an equal number of word spelling mistakes in either stage, although based on the topic Grade 3 students were expected to make more mistakes than Grade 6 students. This supported the fact that had gradually emerged during analyzing the results of other aspects: compared to the Grade 6 students, who wrote narrations, several indicators of skills related to writing were a lot weaker in students, who wrote convincing texts.

It is not very probable that convincing texts were for some reason chosen by students, whose verbal skills are naturally poorer. It rather shows that students should have more opportunities for writing text of different types. This again supports the idea that in the syllabus it would be practical and wise to connect teaching orthography with creating texts and to emphasize the need for writing different types of texts.

## Conclusion

The national curriculum is a document that prescribes the bases of teaching, which are binding to everyone. In the curriculum, the Estonian language has always played a special and important part. At different times treating orthography in the syllabus and establishing the orthography-related knowledge and skills in the syllabus has proceeded from the principles and approaches to teaching that are prevailing at a certain period. The topic of orthography has always been heatedly discussed among the Estonian language specialists. Prior to another curriculum reformation it would be wise to analyse the previous syllabus and to determine, whether and what has been applied in the actual school life. Forming the work-group, whose task will be renewing the syllabus, should take as an important criterion the members' profound theoretical knowledge, which has developed into an acknowledged vision of the effective possibilities of teaching.

In the reformation of the curriculum that started in 2008 the content of the grammar and orthography of the Estonian language syllabus is based on a contemporary viewpoint that focuses on language use and is based on the text. This implies to teaching and assessing or-

thography that is based on the principles of non-formal (concealed or indirect) approach, i.e. taking the situation and/or the purpose of usage into account in teaching orthography. The position has a specific theoretical basis and reasons that were introduced in the present article.

The existence of grounded theoretical bases and the study results allow to claim that the renewers of the Estonian language syllabus are on the right track. The results of the study conducted on the basis of students' free writings supported the presumption that students become more aware and acquire orthographic knowledge and skills more effectively, if these are used in the environment, where they actually needed or in purposed written usage of language. The fact that the spelling of more frequent words is acquired by most students by the end of the first stage of basic school allows the teacher to pay more attention to teaching language fluency, punctuation, and writing different types text with different purposes in the second stage.

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