

*Anda Kaulina*<sup>1</sup>, *Sarmīte Tūbele*<sup>2</sup>

### **Correlation of Primary and Secondary Symptoms of Specific Reading Disabilities Evaluated by Parents of 1<sup>st</sup>-3<sup>rd</sup> Year Pupils**

**Abstract:** This article is devoted to the state of primary and secondary symptoms of specific reading disabilities and how they are evaluated by parents. The data was analyzed and some risk factors were revealed on the basis of applied questionnaires. Primary symptoms were observed clearly when parents evaluated children's reading abilities. The secondary symptoms are not strictly connected with the learning process, but rather depend on the children's behaviour and emotional reactions. However, they are of equal importance, as the strategies for the improvement of academic achievements should be formed as early as possible. This must be taken into account as parents have declared that behavioral problems are increasing with regard to the growth of reading difficulties.

**Key words:** primary symptoms, secondary symptoms, specific reading disabilities.

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**Abstrakt:** Artykuł poświęcony jest pierwszorzędnym i drugorzędnym symptomom specyficznych trudności w czytaniu oraz ich ocenie wyrażonej przez rodziców. Analizowane są w nim dane zastosowanych ankiet, z których wyodrębniono niektóre czynniki ryzyka. Pierwszorządne symptomy wyraźnie obserwowane są przez rodziców podczas oceny umiejętności czytania przez dzieci. Drugorzędne symptomy nie są ściśle związane z procesem uczenia się, raczej zależą od zachowania dzieci i ich emocjonalnych reakcji. Są one jednak równie ważne, jako że strategie poprawy osiągnięć szkolnych powinny być skryształizowane tak wcześnie, jak to możliwe. Fakt ten musi być brany pod uwagę w sytuacji, w której rodzice deklarują, że problemy z zachowaniem nasilają się wraz z trudnościami w czytaniu.

**Słowa kluczowe:** pierwszorządne symptomy, drugorzędne symptomy, specyficzne trudności w czytaniu.

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<sup>1</sup> **Anda Kaulina**, MA in Psychology, a doctoral student at the Riga Teacher Training and Management Academy, the Centre of Children's Language Research.

<sup>2</sup> **Sarmīte Tūbele**, Ph D in Pedagogy, associate professor at the University of Latvia, Faculty of Education, Psychology and Art, Department of Pedagogy; the Riga Teacher Training and Management Academy and the Centre of Children's Language Research.

## 1. Introduction

During the last century, speech therapists, neurologists and psychiatrists have studied people with low literacy and have come up with different definitions of the term *specific reading disabilities*, which notwithstanding the wide range of research are still unequivocally explained. The term – *specific reading disabilities* has several synonyms, which frequently prompt an array of discussions related to the question of what exactly should be accentuated in the definition. In the subject-matter literature in German speaking countries, especially in the field of children's psychiatry, an abbreviated designation of reading and writing disability *LRS (Lese-Rechtschreib-Störung)* or *reading and writing disabilities* is often used. Alternately, the term *legasthenie* is also used. Whereas English and American subject-matter literature makes use of the term *dyslexia*. In all cases, consistent and specific disorders of written language acquisition are emphasized, by using results from standardized tests and International classification of diseases (ICD)-10 criteria (Remschmidt & Schmidt, 1994, 258) in the process of diagnosis. Reading and writing disabilities are traditionally considered to be a partial disturbance in the process of gaining school achievements, which despite a relatively high intellectual level are hindered by explicit difficulties to learn reading correctly (Linder, 1951; Zumbach, Mandl, 2008, 91-95).

## 2. Methodology

Theoretical analysis and questionnaires were used and the Pearson Correlation coefficient was observed. Theoretical analysis was made in previous stages of the research, and materials were published (in Latvian). A questionnaire *Does My Child Have Visible Difficulties with Reading and Writing?* (Ebel, Hessmann, 2006, 54-55) was applied in the study.

## 3. Results

Most children have difficulties with learning how to read correctly. In general, it is estimated that approximately 3-5% of all school children in Germany and 8-10% in the USA have reading disabilities, but approximately 15% of all children from elementary school have general difficulties with reading or score low at basic skills (Eichler, 2004, 40-50; Schubenz, 1965, 19-22; Müller, 1965, 1-5). Children have no problems with learning new words, but it is difficult for them to read without help. In most cases, they are replaced with other words without understanding and meaning. There are also mistakes in writing, illegible or hardly legible handwriting, which allow us to classify disabilities into separate groups. Children try to

keep in mind images of words or sentences by means of visualization, but do not understand their meaning and are not capable of making use of their meanings and functions. The symptoms of reading disabilities occur in the first years of elementary school – at the introductory stage of the process of learning to read. Children’s achievements in these fields significantly differ from the progress of their classmates. They include difficulties to learn the alphabet, to pronounce letters, to differentiate sounds and to assign these sounds to definite letters, i.e. to associate with certain graphemes. Reading disabilities are revealed when children do not understand what they have read, do not remember and are not able to apply the information that has been read. In the latter school years, it affects the whole learning process in general, because pupils cannot make use of the information that they have read to relate to written instructions.

The symptoms of reading and writing disabilities are relatively stable and lasting (Klicpera & Gasteiger-Klicpera, 1995, 35-55). In this way, the continuation of children’s learning process is relatively endangered, because they are not able to master and use their talents accordingly and cannot read and/or write correctly. Consequently, problems arise when reading instructions, or when filling in forms and other documents. Reading and writing disabilities also affect career choice and progress in areas where reading skills are indispensable (Schneider, & Küspert, 2006, 111-134).

Specific reading disabilities are consistent during a lifetime; their symptoms are classified as primary and secondary (see Figure 1).

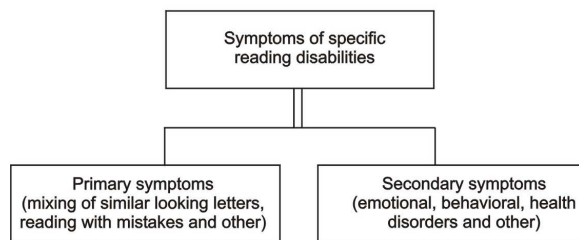


Figure 1. Symptoms of specific reading disabilities.

At the same time, L. Schenk-Danziger (1968, 50-69) emphasizes what is a **primary** characteristic of children with reading disabilities:

- difficulties of spatial understanding,
- weak understanding of text structure and of optical and acoustic difference in the structure,
- difficulties to keep in mind written images of particular letters.

Specific reading disabilities are characterized by the level of children's reading abilities. If the level is lower than required for a given age or educational/intellectual level, it may be assessed on the basis of standardized test procedures and by testing of individual reading abilities, such as accuracy or understanding.

Symptoms of primary reading disabilities are followed by different kinds of emotional and psychological problems or **secondary symptoms of reading disabilities**, such as: low motivation to learn, absence from school, psychosomatic illnesses, emotional disturbances, behavioural disorders and others. Therefore, it is significant to identify those children as early as possible and to provide effective help (Gasteig-Klicpera, Klicpera & Schabmann, 2006, 55-67). The latest research shows that children of both sexes have equal intellectual level, but different cognitive abilities and a varying pace of response (Weber, Marx & Schneider, 2002, 56-70). Hindering progress in reading and writing also influences understanding of mathematical exercises, e.g., when reading instructions (Schwenck, Schneider, 2002, 261-264). M. Hunger-Kaindlstorfer (1968, 453-485) highlights such specific symptoms of secondary reading disabilities as:

- Reduced working speed,
- Absent-mindedness,
- Regression – to models of infant behaviour.

Behavioral disorders are also more often observed in children with reading disabilities. Studies by (Esser, 1990; Esser, 1994; Strehlov, 1992; Beckenbach, 2000, 78-92) prove that at elementary school age the behavior of these children complies with generally accepted social norms, but the lack of achievements during primary school causes visible disorders.

Noticeable accompanying symptoms as lying, disobedience, strolling, self-hurting and other antisocial disorders may also later cause psychic disturbances. In the research, an explicit connection between reading disorders and expansive behavioral disorders was observed, which emerged from excessive psychosocial burden and genetic heritability. At the start of school, the training of approximately 25% of children with reading disabilities has considerable psychosomatic and focusing disorders. During the 2<sup>nd</sup> and 3<sup>rd</sup> years, approximately from the age of 8 until the age of 9, these social behavioral difficulties transform into aggressive disorders, conflicts and socially unacceptable behaviour, and as a result are endangered not only in the realms of social integration, but also in the realms of the whole learning process. The above mentioned research by (Esser, 1990; Strehlov, 1992; Esser, 1994 and Beckenbach, 2000, 78-92) confirms that only 6 out of 59 of the consulted children with reading disabilities (approximately 3,5%) finished school and continued studying. It was recognized that the long term status of unemployment of people with reading disabilities was 6 times higher than in other people.

F. Held (1975, 63) observes complex indications which are characteristic of children with reading disabilities:

1) children become angry easily; it is instinctive anger about the fact that it is not possible to master a given task. This anger may lead to aggressive behaviour not only towards themselves, but also towards others;

2) special, common signals appear, such as: specific body language, reactions, peculiarities of handwriting etc;

3) psychological and physiological peculiarities, which may result in conflicts, neuroses and anxiety;

4) problems with self-assessment and self-confidence, which are connected with difficulties in complying to the demands of a current situation.

Evidently, manifestations of specific reading disabilities are observed in various areas. The main problems are rooted in the process of reading and it may lead to learning disabilities (Tūbele, 2008).

Primary – by reading to the child:

- slowly learns the alphabet,
- hardly differentiates between sounds in words, leaves out or adds letters to words, insufficiently understands the structure of syllables,
- reads longer words with difficulties, reads slowly,
- does not always read the endings of words, leaves out or replaces words,
- has difficulties understanding the content and meaning of the text, has difficulties making conclusions regarding the text.

Secondary – in behaviour:

- unrest, provoking or infantile behaviour,
- homework is not done completely or it is not done at all,
- sadness,
- changing stability of focus,
- frequent headaches (in the mornings and especially during the day, when there is much reading, never during the holidays),
- depression, low self-assessment,
- conflicts with parents, quarrels about homework, long time spent doing homework (3-4 hours), as highlighted by J. Klein and D. Trabert (2009, 85), normal time for homework is exceeded, as normal time for homework is the following: 1<sup>st</sup>-2<sup>nd</sup> year, 30 minutes, 3<sup>rd</sup>-4<sup>th</sup> year, 60 minutes, 5<sup>th</sup>-6<sup>th</sup> year, 90 minutes, 7<sup>th</sup>-10<sup>th</sup> year, 120 minutes.

In order to clarify the opinion of parents of 1<sup>st</sup>-3<sup>rd</sup> year pupils on the reading ability of their children and its connection with behavioral disorders in school years 2010/2011 an inquiry was carried out by means of a questionnaire *Does My Child Have Visible Difficulties in Reading and Writing?* (Ebel, Hessmann, 2006, 54-55). 285 parents of 1<sup>st</sup>-3<sup>rd</sup> year pupils: 78 parents of 1<sup>st</sup> year, 93 parents of 2<sup>nd</sup> year and 114 parents of 3<sup>rd</sup> year pupils from different regions of Latvia and from Riga participated in the inquiry (see Table 1).

Table 1. Percentage of children of the interviewed parents

	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		3 <sup>rd</sup> Year	
	Number	%	Number	%	Number	%
Boys	37	47,4	43	46,2	37	32,5
Girls	41	52,6	50	53,8	77	67,5
<b>Total</b>	<b>78</b>	<b>100</b>	<b>93</b>	<b>100</b>	<b>114</b>	<b>100</b>

V. Ebel and G. Hessman (2009, 54-57) emphasize that the increase of reading difficulties observed by parents corresponds to the increase of behavioral disorders at home. When noticing these signs, parents are often the first ones who seek help and recognize the first signs of reading disabilities.

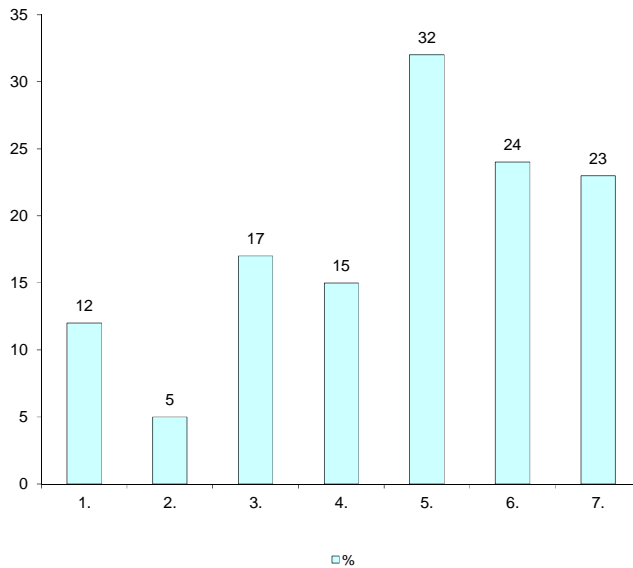
1<sup>st</sup> year parent respondents admit that approximately 80% of children display no problems with basic reading skills, but in 15%-20% difficulties in distinguishing between two word forms that rhyme are observed. There are also difficulties in splitting words into syllables and in pronouncing sounds correctly. Approximately 23% of children of the interviewed parents were not healthy at the beginning of school, which creates objective circumstances for possible reading disabilities (see Figure 2).

In the group of 2<sup>nd</sup> year pupils in approximately 85%-90% reading abilities are already formed. Nevertheless, almost 35% of children leave out or replace letters, which may indicate specific reading disabilities. Nearly 40% of children tend to leave out words or skip word endings and 30% display difficulties in drawing conclusions on what they have read and in answering comprehension questions (see Figure 3).

The above may be considered as signs of risk and it would be advisable for those children to make use of some form of pedagogical and psychological support, so that learning difficulties caused by poor reading skills are resolved.

At the same time, parents of 3<sup>rd</sup> year pupils admit that their children's reading abilities are good. This is indicated by the fact that approximately 75%-80% of children read longer words without difficulties and know spelling rules. Nevertheless, approximately 35% of children have bad handwriting, problems with writing or with rewriting and with dividing words into syllables according to what they hear. Such difficulties are characteristic of children with specific reading disabilities and may indirectly indicate the presence of these disabilities (see Figure 4).

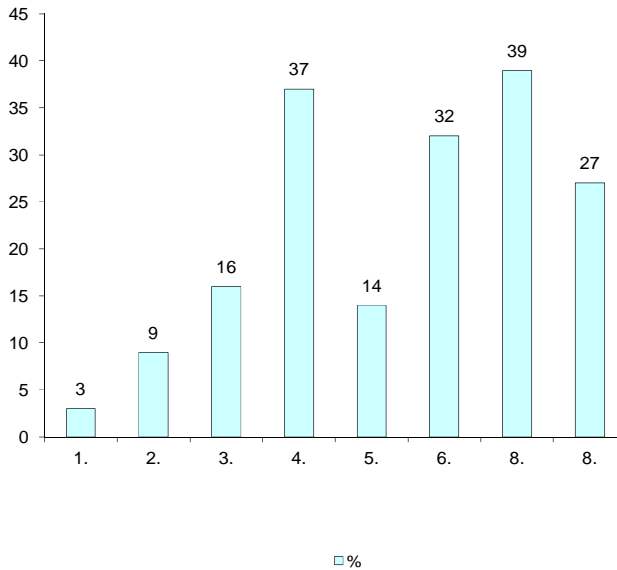
**Assessment of reading abilities of 1st year pupils**



**Key:**

1. Children cannot divide words into syllables.
2. Do not know the difference between the word and the sentence.
3. Are not able to repeat invented words consisting of four syllables.
4. Cannot recognize the sound with which a word starts or with what sound it ends.
5. Fail to recognize two rhyming words.
6. Cannot correctly pronounce sound compounds.
7. Was not healthy at the beginning of school.

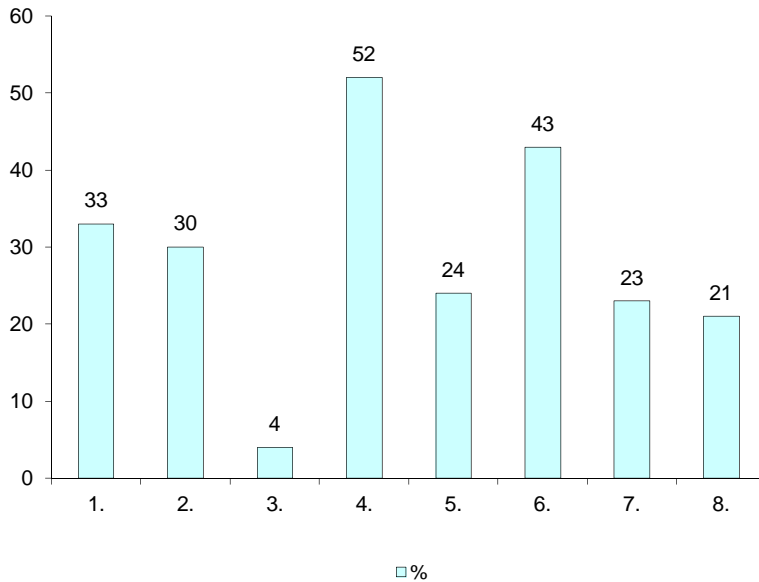
Figure 2. Answers of 1<sup>st</sup> year parents to questions about their children's reading ability.

**Assessment of reading abilities of 2nd year pupils****Key:**

1. Children do not know the alphabet.
2. Cannot find letters corresponding to sounds.
3. Cannot split words into syllables.
4. Leave out letters while reading.
5. Cannot differentiate between sounds.
6. Fail to understand the text.
7. Leave out word endings while reading.
8. Are not able to draw conclusions on what they have read.

Figure 3. Answers of 2<sup>nd</sup> year parents to questions about their children's reading ability.



**Assessment of reading abilities of 3rd year pupils****Key:**

1. Written assignments are difficult to understand.
2. Often make mistakes by writing.
3. Cannot write all letters correctly.
4. Make many mistakes in dictation.
5. Make mistakes by reading of longer words.
6. Leave out letters in spelling tests.
7. Do not know spelling rules .
8. Cannot divide words into syllables according to how they hear them.

Figure 4. Answers of 3<sup>rd</sup> year parents to questions about their children's reading ability.

The authors of the study (Ebel, Hessman, 2009, 54-57) emphasize that if the parents in the questionnaire address at least 3 problems regarding reading and writing, it is necessary to consult an educational psychologist, a special pedagogue or a teacher to diagnose potential reading disabilities. According to the parent poll data in the promotion paper, such consultations would be necessary for at least 1/3 of interviewed parents. It would be reasonable to involve speech therapists into this process.

Answering the group of questions about the behavior, parents admitted that at the beginning of school more than 25% of children display significant changes in behavior. They are more impetuous, nervous or have shut themselves away (see summary Table 2).

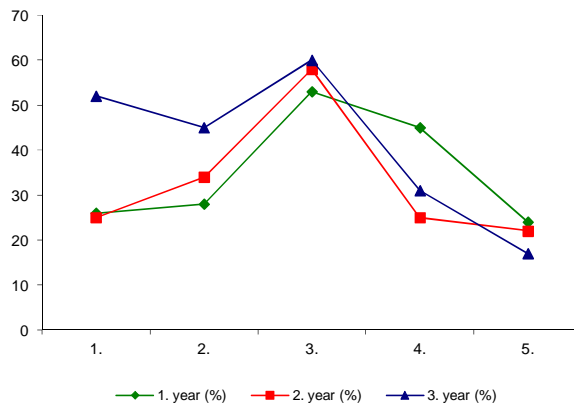
Table 2. Average percentage distribution of answers according to years, concerning parental part of the inquiry "What is your child's behaviour?"

Question	1 <sup>st</sup> Year			2 <sup>nd</sup> Year			3 <sup>rd</sup> Year		
	Boys (%)	Girls (%)	Total (on aver.) (%)	Boys (%)	Girls (%)	Total (on aver.) (%)	Boys (%)	Girls (%)	Total (on aver.) (%)
1. Has your child changed since the beginning of school – become restless, is disruptive in the class or has shut himself away and is sad?	24,3	26,8	25,6	32,6	18,0	24,7	25,0	25,9	25,4
2. Does he/she have problems with homework – doesn't want to do it, does it partly or it takes a long time – more than 1.5 or even 2 hours?	40,5	17,1	28,2	39,5	28,0	33,3	57,1	34,5	45,6
3. Do you quarrel from time to time about homework?	64,7	41,5	52,6	67,4	48,0	57	76,8	44,8	60,5
4. Does your child suddenly behave provokingly towards you or teachers?	59,5	31,7	44,9	34,9	16,0	24,7	44,6	22,4	31,6
5. Does your child have physical problems (head or abdominal pains, enuresis and other), which occur especially when a dictation or a test are planned and they disappear at the beginning of holidays?	37,8	12,2	24,4	18,6	24	21,5	17,9	17,2	17,5

Comparing the expressivity of separate behavioural disorders there is a tendency that in the group of 1<sup>st</sup> year pupils boys and their parents argue about homework, whereas parents of girls admit that girls' behaviour has changed significantly, they have become restless or have shut themselves off.

A similar tendency is also perceivable in 2<sup>nd</sup> year pupils. Their parents admit that behavioural problems of their children have increased in all areas. They manifest provoking behaviour when quarelling about homework more distinctly (see Figure 5).

**Assessment of behavioural disorders in 1st-3rd year pupils**



**Key:**

1. Child is restless since the beginning of school.
2. Requires long time to do homework.
3. Often quarrels about homework.
4. Child behaves provokingly.
5. Child has physical problems.

Figure 5. Assessment of behavioural disorders in 1<sup>st</sup>-3<sup>rd</sup> year pupils.

Comparing class groups, behavioural problems differ very little. On average, there are 33% of questions about problems answered "Yes". This means that almost 1/3 of children have some behavioural disorders, which according to the authors of the questionnaire indicates that consultations and cooperation with the team of school supporting staff are necessary.

It was discovered in the research that there is a close connection between reading disabilities and signs of behavioural disorders. A tendency was observed that with the older the children (from 1<sup>st</sup> until 3<sup>rd</sup> year) the closer the connection becomes and it is more explicit in 1<sup>st</sup> year girls, but even more explicit in 3<sup>rd</sup> year boys (see Table 4).

Table. 4. Connection of primary and secondary symptoms of reading disabilities (Pearson Correlation Coefficient)

Age	Boys	Girls	Total
1 <sup>st</sup> year	-0,144	0,221	0,123
2 <sup>nd</sup> year	0,015	0,367	0,267
3 <sup>rd</sup> year	0,294	0,349	0,362

Analyzing the results obtained from class groups, it is visible that together with the increase of children's age, the correlation between reading and behavioural disorders increases, which means that the worse reading skills are, the bigger behavioural difficulties or secondary symptoms may be more perceptible.

#### 4. Discussion

How early and what specialists are involved in the school supporting staff team to help children with specific reading disabilities to succeed academically?

We consider possible solutions of speech therapists as early intervention specialists even at preschool age (to improve phonological skills and language development).

Psychologists are to be involved in the intervention process because of these secondary symptoms (behavioural and emotional) which are increasing due to the problems of reading.

## 5. Conclusions

- Children with specific reading disabilities have difficulties to acquire good skills in reading in spite of adequate teaching/learning strategies.
- The achievements of children in reading and writing significantly differ from the progress of classmates.
- Primary symptoms of reading disabilities are followed by **secondary symptoms of reading disabilities** (emotional, behavioral and other problems of psychological character which lead to: low motivation to learn, absence from school, psychosomatic illnesses and other.
- Parents state that with the increase of reading difficulties, there is also a growth in noticeable behavioural disorders in children.
- There is average close connection between reading disabilities and signs of behavioural disorders. A tendency was observed that with the increase of a child's age (from 1<sup>st</sup> until 3<sup>rd</sup> year) this connection becomes closer and it is more explicit in girls in the 1<sup>st</sup> year, but more explicit in boys in the 3<sup>rd</sup> year.
- Consultations and cooperation with the team of school supporting staff (psychologist, speech therapist, special education teacher) are necessary.

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