Affective Factors and Reading Achievement in Different Groups of Readers

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Abstract
This paper is part of a wider survey in which we identify groups of readers aged 10 to 11. The paper presents the findings on the observed affective variables (attitude and motivational) of different groups of readers. The results show that individual’s attitude towards reading has the impact on reading comprehension and vice versa, better reading comprehension represents a higher possibility for an individual to choose to read. All identified groups of poor readers read less. An insight into individual’s perception of their own reading abilities indicates some particularities; the group of children with difficulties in reading comprehension, but a good decoding evaluate their reading abilities higher than children with dyslexia, who manage to compensate their decoding problems and show good reading comprehension. The results show that the evaluation of the importance of reading is related to one’s own perception as a reader, while the frequency of reading is more related to individual’s reading performance. Affective factors may be the cause or the consequence of reading difficulties and cannot be overlooked while planning a support.

Keywords: reading comprehension, reading attitude, reader’s reading confidence, reading motivation, groups of readers
Introduction

Different authors (e.g. Alexander & Filler, 1976 in McKenna, Kear & Ellsworth, 1995; Guthrie & Wigfield, 1997) associate attitude towards reading to individual’s sensations experienced during reading which either motivate or discourage reading activity. It is a relatively permanent attitude towards reading and everything associated with it and can be either positive or negative (Pečjak, 1999). Its formation is influenced by several interrelated components (Faman, 1996 in Partin & Gillespie, 2002). The child’s attitude towards reading, motivation, interest in reading they all shape their reading behaviour. Positive or negative attitude towards reading activities have a significant influence on the amount of reading for pleasure and child’s reading achievement (Partin & Gillespie, 2002). There is a correlation between these factors. The more reading for pleasure, the better reading performance (Cunningham & Stanovich, 2001), which encourages individual interest in reading, creating favourable conditions for the formation of a positive attitude towards reading.

A positive attitude towards reading is a result of several factors. Among them authors (e.g. Guthrie & Wigfield, 1997) expose the influence of home background (parent-child joint reading, parents’ attitude towards reading and their reading habits, access to reading material, etc.). Positive reading experience is important especially in the preschool and early school period (Pečjak, Bucik, Gradišar & Peklaj, 2006). With the systematic literacy process, the child’s attitude towards reading is additionally influenced by their reading achievement. The relation between reading attitude and reading achievement is particularly disadvantageous for children with reading difficulties. They need to put much more effort into reading activity and are more frequently faced with failure. All this may eventually lead to reluctance towards reading and reading activities (Pečjak et al., 2006). Consequently, the child reads less and less, which might further lower reading efficiency. Negative feelings during reading thus increase; consequently, children increasingly lag behind their peers in both reading as in all other learning activities based on reading and language. Conversely, good readers continue to improve their reading and become more and more motivated for it, building their vocabulary and general knowledge, which additionally contribute to their overall learning achievement. The interaction between the reading experience, reading / learning achievement and reading motivation was designated by Stanovich (1986 in Cunningham & Stanovich, 2001; Wren, 2001) by the term »Matthew effect « (named after a passage in the gospel of Matthew: 'The rich will get richer and the poor will get poorer.').

Experts observed the decrease of reading interest through the years of schooling in boys and girls (Pečjak, Bucik, Gradišar & Peklaj, 2006). In higher grades the classroom reading becomes more demanding; children operate with more complex reading materials (Biancarosa & Snow, 2006). They are expected to acquire new information through reading (learning by reading) efficiently. Reading thus becomes more and more related to school performance (Pečjak et al., 2006). Walberg and Tsai (1986 in Partin & Gillespie, 2002) focused on the attitude towards reading in adolescents and pointed out the following factors with a positive effect on it: reader’s belief about the importance of reading, pleasure of reading, (sense of personal competence in reading) and encouraging home environment. S. Pečjak et al. (2006) list the first three factors among the elements of intrinsic motivation. These also include being absorbed in reading (i.e. 'being highly focused on the reading material with increased mental activity') (Pečjak et al., 2006, p. 40).

In addition to internal motives, children can be encouraged to read by commendation, desire to get a good grade, competition between peers, complaisance (e.g. want to live up to teacher’s expectations), possibility for cooperation with others, etc. (elements of extrinsic motivation)

Patrick Proctor, Daley, Louick, Leider and Gardner (2014) studied the role of extrinsic and intrinsic motivation, as well as the sense of reading competence in adolescents with reading
difficulties (aged 11 to 15). Their sample included 76 children (different groups of children with special needs). They separately studied the group of children with special needs coming from a different language environment (37 children). The results obtained by the authors, related to the correlation between the motivation factors and reading comprehension are conform to the findings obtained by the Slovene authors (Pečjak, Podlesek & Pirc, 2009 in Pečjak, 2010). The sense of one’s own (in)competence has a direct impact on reading comprehension in older children (nine-year primary school). Other factors of intrinsic (and extrinsic) motivation are not directly related to reading comprehension (Patrick Proctor et al., 2014). It is interesting to note that the authors observed a similar relation between the motivation factors and reading comprehension in children from different language environment, although they obtained significantly lower results at reading comprehension test as compared to other children. Despite the significant influence of language knowledge on reading comprehension, the language status proved not to be an important factor of reading motivation. In spite the difficulties, some children managed to maintain the confidence in their own reading abilities, accepting the reading efforts as a challenge, believing that their reading difficulties could be overcome (Patrick Proctor et al., 2014). In this process, teachers can assume an important role (parents or other people important to a child) by encouragement, giving examples and choosing suitable reading materials (appropriately demanding, adapted to child’s interest). The results obtained by the authors may reflect the heterogeneity of the sample (it included long-term ill children, children with emotional and behavioural disorders, specific learning difficulties), whereby authors do not indicate the results of different groups of children with special needs, nor did they verify the level of reading comprehension in children from a different language environment for the texts in their mother tongue.

Among children with reading difficulties there is a higher possibility that they will attribute the causes for their poor reading to external factors (e.g. teacher, demanding texts, lack of time, etc.) or to those internal factors which they cannot have influence upon (e.g. abilities) (Lipec-Stopar, 2005). The perception of reading as an activity that is too demanding, difficult to manage, may in time manifest itself in the sense of the learned helplessness (especially in children from a less encouraging environment) (Switzky, Harvey, 1997), when a person believes that they cannot do anything to improve their reading (Seligman, 1975 in Fogle, 1978).

Even though the extrinsic motivation is important for achieving learning and reading objectives, it has short-term effects. (Pečjak et al., 2006). Therefore, the planning of literacy acquisition process requires a special reflection on how to organize the class reading, in order to encourage child’s curiosity and interest in reading (Switzky Harvey, 1997). In addition to the appropriate choice of reading materials, it is essential to carefully plan the debate about the text’s content. Highlighting different roles of reading (reading for acquisition of new information/learning/relaxation/pleasure) and individual’s different attitudes towards this activity, class reading needs to be organized as a challenge worth undertaking.

Methods

Participants

The sample included 460 children, good and poor readers who were, at the beginning of the test, aged 10 years and 0 months to 11 years and 4 months. In the sample there were slightly more boys than girls, with the ratio still suitable for ensuring the comparability of groups according to size (54.3% boys and 47.7% girls). Given that, in the research the standardised instruments were not used; the inclusion of both, good and poor readers provided the comparison
of results of different groups and the definition of reference values on the basis of which we can determine good and poor results for individual measurement.

Data Collection Instruments and Procedure

To get an insight into individual components of reading attitude, a questionnaire was used, shortly named reading evaluation questionnaire. It was formulated on the basis of the Denver reading attitude survey (Davis & Rhodes, 1991), published in the manual Literacy assessment: A handbook of instruments (Rhodes, 1993), which collects aids for evaluating different reading components and can be used by teachers.

The questionnaire provides an insight into three different areas related to individual’s reading attitude: frequency of reading activities (reading usage), perception of importance of reading and confidence in proper reading abilities. Originally, the questionnaire contained six questions for each of the areas in which children responded by selecting one of the answers on a five-point scale.

The questionnaire was tested and the construct validity was calculated for it. In the final version, we maintained only the questions which have the highest correlation with the three components of the questionnaire that were observed. Table 1 shows the final correlation matrix of correlation between individual questions and a single component of the questionnaire.

Table 1. Rotated Component Matrix

<table>
<thead>
<tr>
<th></th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Reading usage</td>
<td>Reading usage</td>
<td>Perception of the importance of reading</td>
</tr>
<tr>
<td>Quest._7</td>
<td>.826</td>
<td></td>
<td></td>
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<tr>
<td>Quest._12</td>
<td>.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quest._17</td>
<td>.752</td>
<td></td>
<td></td>
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<tr>
<td>Quest._9</td>
<td>.694</td>
<td></td>
<td></td>
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<tr>
<td>Quest._18</td>
<td></td>
<td>.791</td>
<td></td>
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<tr>
<td>Quest._11</td>
<td></td>
<td>.665</td>
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<td>Quest._14</td>
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<td>.645</td>
<td></td>
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<tr>
<td>Quest._13</td>
<td></td>
<td>.511</td>
<td></td>
</tr>
<tr>
<td>Quest._3</td>
<td></td>
<td></td>
<td>.678</td>
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<tr>
<td>Quest._4</td>
<td></td>
<td></td>
<td>.666</td>
</tr>
<tr>
<td>Quest._1</td>
<td></td>
<td></td>
<td>.649</td>
</tr>
<tr>
<td>Quest._5</td>
<td></td>
<td></td>
<td>.616</td>
</tr>
</tbody>
</table>

The reliability of the instrument for the complete questionnaire, calculated according to the Cronbach’s alpha model is 0,79, whereas for single areas of the questionnaire which represent independent variables is 0,60 (component 3), 0,63 (component 2) in 0,80 (component 1).

The second questionnaire, motivation questionnaire, gives an insight into individual’s source of reading motivation which is manifested in the perception of reasons for one’s success or failure in activities related to reading (intrinsic, extrinsc), and as an additional dimension of internal factors which one can or cannot control.

The questionnaire designed was based on Weiner’s cognitive approach to motivation, i.e. Weiner’s attribution theory (Weiner, 1992). Cognitive explanation of motivation starts with the assumption that all the attempts for understanding our success or failure, we ask ourselves “Why?” Children can attribute their success or failure to their abilities, efforts, knowledge, luck, help, clear instructions, interferences caused by others, etc. Attribution theory of motivation
describes the influence of one’s explanations or excuses on their motivation (Woolfolk, 2002). According to Weiner, most of the attributed reasons for success or failure can be described in three dimensions:

1. locus (place of the reason – inside or outside one’s self),
2. stability (whether the reason is constant or it varies),
3. responsibility or control (whether the person can or cannot control the reason).

In our questionnaire we focused on the first and the third dimension. In total, it contains 20 different statements which represent events related to reading: 10 events with a positive outcome (e.g. I read the story quickly, without any difficulties.), and 10 with a negative outcome (e.g. I read the story, but I did not manage to answer the questions.). Children were instructed to imagine that events happened to them and were asked to select one out of four statements representing the reason for individual event. Two statements represent an external reason of success or failure and two an internal reason; in the the latter, one answer represents a child’s ability of influencing the events, whereas the other represents some characteristic that children cannot influence.

Example:
Event with a negative outcome
_I made many mistakes at reading out loud_
External control …because the text was poorly written.
Internal control / possibility of influence …because I did not try enough.
Internal control / no possibility of influence …because reading is very difficult.
External control …because the text contained many unusual words.

The reliability of the instrument calculated by Cronbach’s alpha model is for the complete questionnaire 0,92, but the more relevant data are those for each separate category of answers, confirmed by the importance of Tukey’s coefficient. Cronbach alphas for each category of answers are much lower, and they range from 0,61 to 0,74.

Methods of data processing

A brief explanation is needed, about the way the groups of readers (subject of our observation, compared according to affective factors) were identified as this work, is part of a wider research.

With hierarchical cluster analysis different, relatively homogeneous groups of readers were identified, namely the groups with a maximum similarity between individuals on selected variables and a maximum diversity between groups (Adams, 1985). We used Ward’s hierarchical agglomerative method which enables a meaningful interpretation of the groups obtained. Ward’s method is often used in taxonomic studies (Afifi & Clark, 1984), as well as in the field of taxonomies of reading difficulties. With this method, the number of groups is not known beforehand, that is why the aim of the use of the method is to get the optimal solution; this being the decision of the one who uses the method and interprets it. The number of groups in the final interpretation was thus adopted on the basis of comparisons between different solutions, by observing the preliminary and further integration of groups in the dendrogram which graphically represents the formation of groups, namely integration of subjects in single steps of classification.

The groups in the next step are additionally described by the variables which did not enter the cluster analysis. The differences between the observed groups were established by the variance analysis. The post-hoc Tukey HSD test was used to accurately determine among which groups there are statistically significant differences.
Results and discussion

The results of the observed variables are shown in Table 2. They are distributed in groups which were formed by the use of cluster analysis. Given that this paper is focused only on the affective factors of the identified groups of readers, let us start with summarizing their other characteristics, identified in a wider research.

The first group, named 'group of readers with compensation dyslexia‘, is characterised by the above-average cognitive abilities and listening comprehension which is highly correlated with reading comprehension (Stanovich, Cunningham & Feeman, 1984; Aaron, 1991; Just & Carpenter, 1987). A particularity of this group consists in a discrepancy between the two components of reading comprehension. Children do not have difficulties with general and language knowledge, their reading difficulties are manifested when reading aloud and during the time-limited reading; they read inaccurately with below-average speed and with a higher number of errors. They have difficulties with rapid and automated language processing, this probably being the basis for the reading difficulties in this group of readers. These difficulties which are reflected in the poorer reading technique are compensated by relatively good usage of context, enabling them a relatively good reading comprehension.

The second group, named 'the group of quick readers with average comprehension', is the most numerous among all groups. The readers in this group have average cognitive and language abilities, their reading is quick and accurate; their comprehension is, in all variables, around the average values. Reading has the same level, regardless whether reading is time-limited or if they themselves establish the time of reading. These are readers with a good reading technique; their comprehension is within the average values that apply to the entire sample. This confirms the fact that a good reading technique is a necessary, but not a sufficient condition for a good reading comprehension.

The third group, named the 'non-specific group of poor readers', is the group with the lowest level of cognitive abilities, but with no problems with quick naming and short-term memory for letters and numbers. All other results, namely the results on tests for determining the reading technique, as well as the results for reading comprehension are below average. They indicate difficulties in decoding speed and accuracy, poor vocabulary and difficulties in reading comprehension.

The fourth group of readers with average cognitive abilities, named “the group of non-compensated dyslexic readers”, has significantly lower results in all tests, as compared with other groups; unlike the third group, the fourth group manifests the difficulties with quick naming and short-term memory. Their reading is extremely slow, inaccurate, with the highest number of mistakes among all groups; their reading comprehension is low in all measurement conditions, irrespective of the type of reading material.

The fifth group, named 'the group of readers with hyperlexia‘, is numerically the smallest, which corresponds to an otherwise normal incidence of this type of reading difficulties. This group is characterized by a good reading technique: they read quickly, making only few mistakes. They, however, obtain markedly below-average results in all tests of reading comprehension. They have slightly lower cognitive abilities; they have lower level of listening comprehension which is considered a direct indicator of reading comprehension potential. Children in this group have thus a well-developed reading technique but have a poor understanding of what they decode.

The sixth group includes “good readers”, namely readers with no reading difficulties. They are characterized by quick, fluent reading, with rare reading errors; their good comprehension is evident in answering questions of both, lower and higher level; they
summarize well what they read. They are additionally characterized by the highest cognitive potential, memory, listening comprehension and processing speed.

Table 2. Presentation of Evaluation of Parameters for Each Group: Variables of Reading Evaluation and Motivation Variables

<table>
<thead>
<tr>
<th></th>
<th>1st group N=90</th>
<th>2nd group N=105</th>
<th>3rd group N=68</th>
<th>4th group N=71</th>
<th>5th group N=35</th>
<th>6th group N=91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading usage</td>
<td>10.64 2.99</td>
<td>10.78 3.11</td>
<td>9.40 2.93</td>
<td>8.73 3.57</td>
<td>9.40 3.84</td>
<td>11.89</td>
</tr>
<tr>
<td>Reading confidence</td>
<td>10.73 3.30</td>
<td>12.28 2.69</td>
<td>10.34 2.86</td>
<td>8.07 3.44</td>
<td>13.37 3.39</td>
<td>13.85</td>
</tr>
<tr>
<td>Evaluation of the importance of reading</td>
<td>14.19 2.51</td>
<td>14.26 2.46</td>
<td>13.00 2.98</td>
<td>12.21 3.60</td>
<td>14.74 1.37</td>
<td>14.42</td>
</tr>
<tr>
<td>External factors</td>
<td>4.68 2.03</td>
<td>4.44 1.82</td>
<td>5.41 2.00</td>
<td>5.75 2.21</td>
<td>4.91 2.10</td>
<td>4.10</td>
</tr>
<tr>
<td>Internal factors</td>
<td>5.06 2.09</td>
<td>5.50 1.85</td>
<td>4.03 1.92</td>
<td>3.69 2.28</td>
<td>5.00 2.10</td>
<td>5.73</td>
</tr>
</tbody>
</table>

\( M \) – arithmetic mean, \( SD \) – standard deviation

Statistical significance of the differences between all observed groups was first confirmed with the variance analysis (Table 3). Further on, post-hoc Tukey HSD test showed the significance of differences between individual groups (Table 4, 5, 6).

Table 3. Variance Analysis of the Variables of Reading Attitude

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
</tr>
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<tbody>
<tr>
<td>Reading usage</td>
<td>6.480</td>
<td>.000</td>
</tr>
<tr>
<td>Reading confidence</td>
<td>29.504</td>
<td>.000</td>
</tr>
<tr>
<td>Evaluation of the importance of reading</td>
<td>3.416</td>
<td>.005</td>
</tr>
</tbody>
</table>

All three groups of poor readers, including the fifth group of readers with hyperlexia, with good reading technique read less, especially those from the fourth group (group of readers with decompensated dyslexia) who otherwise achieve the lowest results in all reading tests. The frequency of reading is in the first group (readers with compensated dyslexia) only slightly lower than in the group of average readers (group of quick readers with average comprehension) (Table 4).
Important information is given by the reading confidence variable which gives us an insight into individual’s perception of their own reading abilities (Table 5). Among the ‘poor readers’ there is a significant upward deviation for the group of ‘readers with hyperlexia’ (5th group) who, despite the difficulties in reading comprehension, have a good reading confidence, even better than the 1st group (readers with ‘compensated dyslexia’) who do not have such a high reading confidence and demonstrate similar results as the 3rd group of markedly ‘poor readers.’ The 4th group of readers with ‘decompensated dyslexia’ who, despite their good cognitive potential, achieve the lowest results in all reading tests and have the lowest reading confidence. Interestingly, both groups of readers without difficulties (good and average readers) do not differ significantly in evaluating their own reading achievement.

Although all groups recognize a considerable importance of reading, even here we can observe significant differences (Table 6). Again we can see the downward deviation in overall result for both groups of ‘poor readers’ (3rd and 4th group), while the 5th group of readers (readers with hyperlexia) do not deviate significantly on this variable from the groups of average and good readers. This is probably related to the reader self-perception which is much higher in the 5th group, as compared to the 3rd and the 4th group.
Comparing the groups on all three variables, we note that the variable most harmonised with the reading achievements, is that which represents a real reading usage. If we were to rank the groups according to reading achievements, we would get the same ranking as if when taking into account the variable of reading usage – the more difficulties, the less frequent the reading usage. The other two variables are most markedly low in the group of poor readers, with higher cognitive potential and the lowest reading achievement – namely in the 4th group of children with *decompensated dyslexia*. The children from the group of *readers with hyperlexia* (5th group) consider themselves as good readers, even better that those from the group of readers with *compensated dyslexia* (1st group). This influences their general attitude towards reading; it being better than in all other groups with reading difficulties. We can thus conclude that the evaluation of importance of reading is closely associated to individual’s reading confidence, while the actual reading usage is more associated to individual’s actual reading achievement.

The results of the motivation questionnaire (Table 2) give an insight into the source of reading motivation for individual groups which is shown as the cause of success or failure in reading activities (extrinsic, intrinsic) and as additional dimension of internal factors which vary, depending on whether an individual can influence them or not. Again, we can observe certain rules applicable in the relationship between internal and external factors. Readers with marked difficulties see their failure as the result of external factors, or those internal factors over which they have no influence. While in the group of readers with *compensated dyslexia* (1st group) and those with *hyperlexia* (5th group) there are no significant differences in choosing between internal and external factors, the group of average readers (2nd group) more often chooses internal factors. The better the readers, the more often they attribute the responsibility for their success to themselves. However, observing the number of answers related to the choice of internal factors, we can see that the best readers do not achieve the highest values, namely the best readers attribute their success to themselves, but this is not necessarily due to their effort, but rather due to their abilities, namely internal factors, something over which they cannot have influence.

Comparing the groups according to the frequency of their choosing of internal, controlled factors shows that the highest values are obtained by the group of *readers with compensated dyslexia* who frequently see the reasons of their success or failure in effort and time they put in reading, namely factors which can be influenced by them. This is probably the key to their overcoming of difficulties successfully that they still have in the reading technique.
Conclusion

The results of this research can serve as the starting point for creating a variety of approaches of support for children with reading difficulties as they provide an insight into the weak and strong points of identified groups of poor readers on different components of reading comprehension.

The basic guidelines of support consist in the combination of a wide range of reading activities which stimulate children to read; with guided teaching of skills still not mastered; them being a prerequisite for reading at the next stages of development. In addition to the basic guidelines for the planning of support for children with reading difficulties, i.e. early identification of problems and early intervention, additional time for learning how to read, using appropriate learning materials, working with small groups of children with similar problems, creating a comprehensive programme involving all important areas of reading comprehension development (Carnine et al., 2004), stimulating curiosity and interest in reading (Switzky Harvey, 1997), consideration should be given to the need for frequent monitoring of a child’s progress and for including relevant feedback related not only to the reading technique but also to the reading comprehension. The latter is, according to the results of the research, important for individuum’s reading confidence and their motivation for the activities which involve reading. The results of studying affective factors in individual identified groups of readers confirm that it is the frequent use of reading skills that in turn influences better reading, forming thus the base (but not a guarantee) for individual’s frequent involvement in activities which include reading. Individual’s perception of their own reading abilities largely depends on the feedback received in relation to reading. This explains the reading confidence in children with hyperlexia who, despite difficulties in reading comprehension, positively evaluate their reading abilities, as they often receive positive feedback particularly in relation to the reading technique and less to their reading comprehension. Conversely, we note poor evaluation of their reading abilities in children with compensated dyslexia who, despite their poor reading technique, have a relatively good reading comprehension. This observation can be an important guideline for teachers when forming the feedback. Based on the results, we can conclude that reading achievements most relevantly coincide with the frequency of reading activities; more difficulties indicate less reading. Evaluation of the importance of reading is closely related to one’s view of themselves as readers. Reading achievements are additionally reflected in the differences between the groups in terms of attribution of one’s success/failure in reading. Better readers often attribute success to themselves. Conversely, readers with marked difficulties more often attribute their failure to external factors or those internal factors they cannot have influence upon. An important cue for planning work with all groups of readers with difficulties in reading comprehension is given by the findings related to the group of children with compensated dyslexia. This group of readers, as compared to other groups, achieved the highest result in measuring the frequency of choosing internal, controlled factors. This means that these readers attribute the reasons for their reading achievements to the amount of effort and time dedicated to reading, etc. For improving the reading achievements of all groups of readers, regular and suitable implementation of reading exercises is essential. It is equally important that children themselves become aware of the importance of the amount of effort and time dedicated to reading practice for overcoming their reading difficulties. Teacher can contribute to such awareness by giving sense to the reading practice and by introducing peer support. Planning of reading practice and support for readers with difficulties must additionally include the reflection on the role of affective factors on reading and the ways to influence them.
References:


