

METACOMPREHENSION OF THE TEXT IN THE EDUCATIONAL PROCESS

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The article was prepared thanks to the support of the University Grant Agency (reg. no. V/17/2024).

Abstract: The aim of the presented paper is to analyse the issue of development of reading comprehension in the educational process, through the application of reading strategies that have a metacognitive character.

Keywords: Reading literacy, reading comprehension, metacognitive strategies.

1 Introduction

If our education system wants to keep up with a continuously changing society, progress and increase the efficiency in the education of learners, it is essential that it also innovates and modifies the approach to learning and teaching in the educational process. Emphasizing metacognition in education guarantees a high-quality and goal-oriented approach, to the development of learners' competences, which leads to gradually taken responsibility for their own learning, problem solving, including the use of appropriate learning strategies and the development of their critical thinking. It is unequivocally proven that metacognitive strategies are of great benefit to the learner, as they influence the development of both lower and higher cognitive processes, and metacognitively oriented teaching also determines the quality of reading comprehension and aids its development, which subsequently influences the level of reading literacy, that is necessary for the functioning of an individual in a society.

2 Reading Literacy and Reading Comprehension

Although we come across a number of definitions for the term literacy, in professional literature, they are relatively ambiguous. The reason is a different view of the skills that are generally associated with literacy. They do however have a common basis, forming reading, writing and thinking. Without them, literacy cannot develop under any circumstances.

We are convinced that every person should have such knowledge, skills and abilities, thanks to which he/she can communicate effectively (socially and technically), think critically and work creatively with the amount of information that consumes the contemporary world. He/she should be able to navigate in a complex environment, be flexible, able to accept changes, know how to work in a team and also use his/her time effectively.

We identify with the opinion of O. Zápotočná (2012), who states that if we want to talk about literacy as the ability to read and write, we must think of reading as a certain level of human thinking, its subsequent conscious "metacognitive" control and of writing as the meaning of a certain composition or structure of a meaningful whole.

Reading literacy is perceived by several authors identically (Kašiarová, N., 2011; Džačovská, S., 2016; Geske, A. – Ozola, A., 2008; Kendeou, P. et al. 2016;) as the competence to understand written text, which is applied within written and linguistic forms with a discourse value for the individual as well as for the society. This competence includes understanding the expressed information, searching for it, integrating and interpreting it, as well as drawing conclusions, examining and evaluating the content, language and individual elements of the text.

The authors A. Muličáková - T. Ustohalová (2015) understand the term reading literacy as the complex development of reading

skills necessary for effective work with text. If the reader consciously handles and uses the acquired reading competences (which enable him/her to work with different types of texts), he/she can progressively develop his/her own reading literacy. The term reading literacy is also defined in the National Strategy, specifically in the PIRLS and PISA literacy studies - international measurements of the educational results of OECD countries. They place particular emphasis on the functional nature of reading, the purpose of which is the rapid acquisition and efficient processing of information from various texts.

According to the PIRLS literacy study, which focuses on the reading literacy assessment of 10-year-old learners, reading literacy is "the ability to understand the forms of written language required by society and/or individuals and to use them. Young readers can derive meaning from a wide variety of texts." The study examines three aspects of reading literacy, namely *comprehension processes, reading goals, and reading habits and attitudes.*

A higher form of reading literacy presents the PISA programme, which is aimed at evaluating 15-year-old learners. In this definition, it is not only a matter of deciphering or understanding the text, but it also includes the understanding and subsequent use of the obtained information for functional purposes. Reading literacy is understood here as "the ability to understand the text read, think about it and use it to achieve one's own goals, to develop one's own knowledge and potential, and to actively participate in society."

In the stated definitions, the investigated components are measurable and can generally be tested. This testable area implies three aspects of reading literacy, namely *information acquisition, information production, and text evaluation.* However, reading literacy generally includes non-testable components that are no less important in the process of its development. These are social and affective elements, the attitudes and values of the individual (National Education Strategic, 2016).

On the basis of the studied professional literature, we conclude that the main goal of developing reading literacy should be primarily a reader who can effectively work with the acquired reading skills to such an extent that he/she can decipher diverse texts used for different purposes. In order to achieve these complex skills and the expected level of reading literacy, it is not enough to practice and develop them only in Slovak language classes. It is necessary that they be systematically developed in all other classes as well.

There is no doubt that reading literacy has an irreplaceable position within the educational process. It is through this literacy that learners gain, acquire and remember information from various fields of education, which can subsequently develop other types of functional literacy. Importantly a necessary condition is the activity of the learner himself/herself, who becomes a processor of textual information.

According to K. Tyson (In Sigmundová, A., 2019), reading comprehension is a process in which the reader creates the meaning of the text based on the interaction of information from the text and their own knowledge, during the reading itself, as well as before and after reading. The given definition corresponds to the construction-integration model of the text comprehension process developed by T. A. van Dijk (2012), according to whom it takes place in two phases:

1. *constructive* (the reader constructs the meaning of the text based on information from the text);
2. *integrative* (the reader integrates this meaning into his/her own knowledge and internal knowledge structure).

Since we lean towards the constructivist paradigm within the educational process, we consider it necessary to develop reading literacy among learners of younger school age, precisely through higher levels of understanding in all subjects in which learners work with textual information.

2.1 Metacognition in the Educational Process

Metacognition generally represents a certain extension of human thinking, it is knowledge about how we think, what we know and don't know. The word meta represents a higher way of thinking, reasoning and a certain perspective, the term *cognition* denotes comprehension (Říčan, J., 2017). Metacognitive thinking in itself implies thought processes related to a person's own cognitive processes, but at the same time planned, controlled, consciously used and evaluated thinking (learning, knowing).

The goal of *metacognitively oriented teaching* is to bring learners closer to the content and process of their own thinking, to support them in thinking about how and why they think in this way, in order to adjust their thoughts and actions to achieve a goal (be it their own or within learning). V. Lokajíčková (2014) talks about the principles of the metacognitive approach in the form of the WWW&H rule (What to do, When, Why, How). On the basis of the above, we conclude that *metacognitively designed teaching* should focus more attention on the course and processes of learning and thinking rather than only on the results of thought activities.

H. Haywood (In Kovalčíková, I., 2018) into the cognitive output of education includes in addition to the acquisition of certain educational content, the internalization of higher forms of thinking and metacognitive strategies, as well as the streamlining of elementary cognitive functions that participate in cognitive processes.

Metacognition also plays a big role in individual reading processes. By working with the text, learners can develop their *metacognitive skills*, improve their ability to understand the text, which helps them to remember better. In the course of reading, it is necessary that the reader perceives the content of the text all the time and monitors whether he/she understands the text. He/she should evaluate, reflect on his/her actions and use procedures that ensure his/her own understanding. As part of the development of reading literacy through the practice and application of metacognitive strategies in the educational process learners become excellent readers who are able to work with any text in all subjects. They think about their own way of thinking, learning and can:

- *develop a deeper understanding of the text* (use different methods in relation to problem areas, choose the right ways to solve the problem);
- *solve tasks requiring higher thought operations* (offering opportunities to present one's own opinion, requires learners to argue, to use creativity, to think critically and to participate in group learning);
- *connect topics in school assignments with real-life problems* (guide learners to use the acquired knowledge in their personal lives).

According to V. Najvarová (2010), a skilled reader with developed metacomprehension manifests himself/herself by isolating information, possibly marking it in the text, expressing relationships between information, arranging information according to criteria, graphically representing, reproducing and interpreting the text, creating questions about the text and answers them, evaluates the content of the text, using previous knowledge. In case of confusion, he/she stops reading and thinks about what has been read so far. He/she then reads the text again and looks for answers to his/her questions about the given text. All the time, he/she reevaluates and checks the information, forms his/her own opinion about the text. A weak reader, a reader who does not have a developed meta-understanding,

cannot regulate his/her own reading and is often dependent on the trial and error method.

In connection with the above we must unfortunately point to the results of research that confirm deficiencies in the field of processing information from the text, e.g. lack of orientation in the text, inability to work with the text as a meaningful source of knowledge, etc. Metacognitively oriented reading strategies serve to eliminate these deficiencies, which help the learner to orientate himself/herself in the content of the text, mobilize and organize his/her own cognitive activity. When reading and understanding the text, as part of the educational process, it initially involves the systematic support of the teacher, who acts as a facilitator. It is he/she who creates the conditions for the choice of adequate, effective and preferred strategies, presents current, model situations - motivating learners to practice the necessary strategies. In order for metacognitive reading strategies to become an effective means of reading comprehension for the learner, it requires the teacher to have certain knowledge about strategies (Magulová, J., 2008).

According to L. Whitcroft (2010) but also H. Kūçükoğlu (2013) reading strategies are specific procedures that the reader consciously uses when reading and are helpful to better understanding the text. The authors point out that teachers often mistakenly believe that learners will acquire strategies (like reading skills) automatically. In some cases, with more skilled readers, this can happen, but there are also learners who need guidance on acquiring the appropriate strategy.

Reading strategy can become a skill over time, after correct, sufficient and systematic practice. The goal of developing metacognitively oriented strategies is their automation and proper use in various reading and learning situations.

The most frequently used *reading strategies* with a focus on improving the level of metacomprehension of the read text in the educational process, and at the same time the most frequently published in professional publications, are: SQ3R, SQ4R, PQRS, MURDER, KLW, think-along strategy, T. E. Scruggs procedures, cognitive activity pattern method, 3-2-1 Procedure, 5-4-3-2-1 Procedure, Look - Ask - Read - Answer - Repeat, Cinquain, Read - Imagine - Paraphrase - Slow/Speed Up, Concept Map, Create a Text Summary, PRAISE, RISE, EUR strategy, PLAN, RAP, INSERT.

In conclusion we add that in order for learners to learn to work independently with the text (using metacognitive reading strategies), they must go through a certain process, the essence of which is based on the procedural aspects of reading - as a strategic and mental activity that can be purposefully managed, monitored and regulated. Unfortunately, we have to state that this particular area penetrates into our education system only sporadically.

3 Empirical Part

Learning from texts and reading with comprehension is a very common teaching and learning situation, which is an irreplaceable component in the educational process, as well as in everyday life. Despite this, we think that the school does not fully utilize its potential and possibilities in this issue. We still dominantly encounter frontal work with texts (primarily with the textbook), literal reproduction of the text - regardless of the learners' reading level, disrespect for learners' experience with reading and working with texts, insufficient development and use of reading strategies, absence of development of learners' critical thinking...

Authors S. Nash-Ditzel (2010), Y.-F. Yang (2006), M.-R. Ahmadi et al. (2013) unequivocally prove that it is much more effective if learners are guided explicitly, purposefully, and especially systematically to acquire reading skills in the educational process. We believe that by the systematic practice of selected metacognitively oriented reading strategies, we will

support the development of individual cognitive processes that affect the level of understanding of the read text.

When determining the relational research problem *how will applied reading strategies with a metacognitive character affect the level of text comprehension among learners* - we begin with the current educational conditions in which learners are not systematically guided to use individual reading strategies that develop metacognitive processes, aimed at increasing level of comprehension of the read text. On the basis of the implementation of metacognitively oriented reading strategies within the educational process, this strategy can be used to develop understanding of the text within the reading process. We established the following research hypothesis:

H: We assume that learners who have worked with metacognitively oriented reading strategies as part of the educational process will achieve a statistically significantly higher level of understanding of the text than learners who have not worked with metacognitive reading strategies.

The sample consisted of learners of the secondary level at the elementary school in Nitra. There were two classes of the 6th grade, with a total number of 30 learners (there were 15 learners in each class).

Since we implemented a quasi-experiment with the learners, by the pretest and posttest we developed a cloze test (of our own construction). In the *experimental group*, as part of the educational process, we implemented reading activities with the application of reading strategies with a metacognitive character. In the *control group*, teaching was carried out in the traditional manner, in a so-called transmissive way (working with the textbook, working out standard exercises from the textbook, discussing the read text). This means that metacognitive reading strategies were not applied in the control group and the educational process took place without intentionally implemented changes. The research was carried out during *English language and literature* lessons. At the beginning of the experiment, both groups participating in the research were equal in terms of age, method of teaching, achievement, etc.

To determine the level of understanding of the read text, we chose the *cloze test* battery within the control and experimental groups (its essence lies in the cognitive effort that the reader must make to understand the context of the read text). To achieve understanding by completing individual words, it is necessary to know the meaning of the surrounding words, to understand the meaning of the whole sentence and the relationships between them. For the needs of the conducted research, we constructed our own cloze test, while complying with all the required criteria, considering the age group of our respondents. The test consisted of 250 words of natural text, with 35 words omitted. Every fifth word was omitted. The maximum number of points achieved in the final test was therefore 35 points. The time limit for preparing the pretest was 40 minutes. When evaluating the learner's performance in the cloze test, we took into account the number of correctly completed words from the total number of omitted words in the text (it had to make sense in the sentence, so it had to be appropriate in terms of meaning and grammar). In order for the assessment to be objective, we prepared in advance the criteria, a list of words - synonyms, with which learners could fill in the missing words in the test.

In our research, we used the quasi-experiment method, aimed at verification of the effectiveness of reading strategies with a metacognitive nature in connection with improving the level of comprehension of the read text. Individual activities in the experimental group with the application of reading strategies with a metacognitive character (in reading, they represent individual steps taken by the reader in order to really understand the read text, e.g.: determine the purpose of reading; anticipate what the text will be about; remember what he/she knows about the topic; he/she goes back to a certain passage in the text or slows down the reading; he/she looks for the answers,

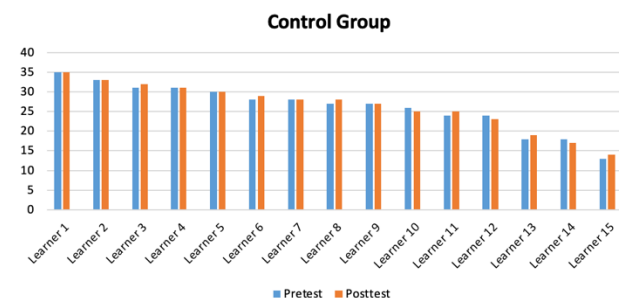
etc.) were planned for ten lessons in the English language and literature.

Our main intention within the framework of applying reading strategies, was to explicitly explain and teach learners the procedure, how to think about the read text, what to emphasize in the reading process. Since the purpose of training reading strategies with a metacognitive character in the experimental group was to gradually transfer the responsibility for working with the text to the learner, we tried to thoroughly explain learners *what* the chosen strategy *is about*, *why* is it important to master the strategy, *how* is it specifically used and *when* is it appropriate to use it. We used *the think-along strategy and the cognitive activity pattern method* to describe individual steps of the metacognitive processes.

During the lessons we focused our attention *on work with the text and application of reading strategies* that are proven in practice. We have selected those strategies that appear to be effective, especially in the initial stages of practicing strategies before, during and after reading. These were strategies of *prevision* (making predictions about the next part of the text), *orientation in the text* (3-2-1 reading strategy, text with mixed sentences, creating headings for parts of the text), *summary* (clarifying unclear parts of the text, unknown words), *visualization* (using a concept map to the story). At the same time, we used *questions* in every lesson, during the entire reading. So, in different stages of reading, with different goals (for levels of understanding), as well as for verifying and activating the learners' previous knowledge or experience.

3.1 Data Interpretation

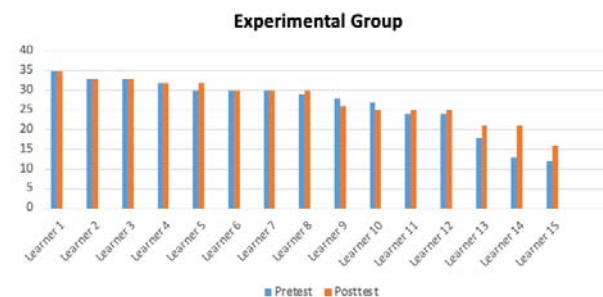
In graph 1 we present the total score of the control group respondents, which was achieved in the pretest and posttest by working out the cloze test.



Graph 1. Pretest and Posttest – Control Group

In graph 2 we present the total point score of the experimental group respondents, which they achieved by completing the cloze test.

Graph 2 Pretest and Posttest – Experimental Group



By evaluation and comparison the results of the pretest of the experimental and control groups, we found that both groups performed approximately equally well in the pretest. The

average value of the correct answers of the experimental group was 26.53 points and the control group 26.20 points. The difference between them was therefore 0.33 points, which represents 0.95% of the total number of points in the final test. This result is not statistically significant. Because of this it was determined that the experimental and control groups were equal at the beginning of the experimental investigation.

By evaluating the results obtained by developing the posttest in the experimental and control group, we found that the experimental group achieved statistically significantly better results, compared to the control group. The average value of correct answers in the point evaluation of the experimental group in the post-test increased from 26.53 points to 27.60 points. We also noticed a shift in the control group, from 26.20 points to 26.40 points. It follows from the above that even though there was a partial shift in the posttest in both groups, this shift was more significant in the experimental group, i.e. up to 1.07 points, while in the control group it was only 0.20 points. The difference between them was 1.2 points, which represents an improvement from 0.95% to 3.43% of the total number of points in the posttest. We conclude that the practice of reading strategies with a metacognitive character within the educational process led to significant changes, i.e. in the shift in understanding in the area of reading, after the completion of the cloze test by the experimental group. The differences and comparison of the results of individual groups are presented more clearly in Table 1.

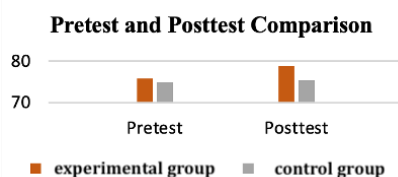
Table 1: Pretest and Posttest - Cloze Test Comparison

	<i>Experimental group</i>	<i>Control group</i>	<i>Difference EG-CG</i>
<i>Pretest</i>	75.81	74.86	0.95
<i>Posttest</i>	78.86	75.43	3.43
<i>Pretest - posttest difference</i>	3.05	0.57	

The results we achieved through research prove that by applying and practicing reading strategies as part of the educational process, the experimental group achieved better results in the posttest – cloze test than the control group. The average point difference between the groups was 1.2 points, which represents 3.43% of the total number of points. Based on the comparison of the input and output values of the pretest and posttest in the cloze test of individual groups, we noted a shift of the experimental group by 3.05% compared to the control group, which improved by only 0.57% compared to the pretest. Based on these results, we can conclude that the application and systematic training of reading strategies in the educational process, developing metacognitive processes in reading, influence the understanding of the read text.

The results obtained in the pretest and posttest (by means of the cloze test of both groups) were also shown in graph 3 for a better orientation, where we can clearly see the shift of the experimental group compared to the control group. It is a percentage expression of the results of both groups.

Graph 3: Pretest and Posttest Comparison - Cloze Test



Based on the above results, we can conclude that the experimental group improved the understanding of the read text. We attribute the stated results and positive impact to the application of reading strategies with a metacognitive nature into the educational process, which involve planning, tracking, monitoring and managing one's own cognitive processes while

reading. In the posttest, learners among whom we applied reading strategies with a metacognitive nature to the learning process achieved a statistically significantly higher level of understanding than learners for whom reading strategies with a metacognitive nature were not applied, which confirmed the established hypothesis.

4 Conclusion

The development of metacognition and the implementation of metacognitive strategies into the educational process guarantees a simpler, better quality and more effective way of teaching. From the metacomprehension point of view and the use of metacognitive strategies in reading, it is within the competence of the teacher not only to teach learners to read, but also to understand what they read. The teacher should turn the lessons into opportunities for learners to think about what they have read, in what way, if and how they understood the text, which includes all stages of reading and learning.

We are convinced that it is necessary to focus (while working with the text) not only on the mechanical practice of reading, but on the systematic use of new reading strategies in each subject. Thanks to them, learners think about what they have read, i.e. about how to process the received information, what to do when they do not understand the information. We believe that by knowing and applying various metacognitively oriented reading strategies, learners can critically evaluate the information they receive, adopt their own attitude and opinion on any text, and use the information they receive appropriately in real life.

Literature:

- Ahmedi, M. R., Ismail, H. N., & Abdullah, M. K. (2013). The Importance of Metacognitive Reading Strategy Awareness in Reading Comprehension. *English Language Teaching*, 6(10), pp. 235-244.
- Džačovská, S. (2016). Mozaika čitateľskej gramotnosti. *Pedagogické rozhľady*, 25(4), pp. 15-12.
- Geske, A., & Ozola, A. (2008). Factors influencing reading literacy at the primary school level. *Problems of Education in the 21st Century*, 6, pp. 71-77.
- Kašiarová, N. (2011). *Čitateľská gramotnosť na vyučovaní slovenského jazyka a literatúry*. Metodicko-pedagogické centrum. ISBN 978-80-8052-378-7.
- Kendeou, P., McMaster, K., & Christ, T. (2016). Reading comprehension: Core components and processes. *Policy Insights from the Behavioral and Brain Sciences*, 3(1), pp. 62-69.
- Kovalčíková, I. (2018). Kognitivistická edukačná paradigma: príklad experimentálneho overovania kognitívnych stimulačných programov. In *Juvenilia paedagogica* (pp. 7-13). Trnava : Trnavská univerzita. ISBN 978-80-568-0131-4.
- Küçüköglü, H. (2013). Improving reading skills through effective reading strategies. *Procedia-Social and Behavioral Sciences*, 70, pp. 709-714.
- Lokajčíková, V. (2014). Metakognice – vymezení pojmu a jeho uchopení v kontextu výuky. *Pedagogika*, 64(3), 287-306.
- Magulová, J. (2008). Čitateľské stratégie žiakov 4. ročníka základnej školy. *Pedagogická revue*, 60(1-2), pp. 61-87.
- Muličáková, A., & Ustohalová, T. (2015). *Rozvoj čitateľskej gramotnosti v primárnom vzdelávaní*. Metodicko-pedagogické centrum. ISBN 978-80-565-1388-0.
- Najvarová, V. (2010). Čtenářská gramotnost žáků prvního stupně základní školy. *Pedagogická orientace*, 20(3), pp. 49-65.
- Nash-ditzel, S. (2010). Metacognitive reading strategies can improve self-regulation. *Journal of College Reading and Learning*, 40(2), pp. 45-63.
- Řičan, J. (2017). Způsoby zjišťování úrovně metakognitivních znalostí: kvantitativní vs. Kvalitativní standard. *Gramotnost, pregramotnost a vzdělávání*. 1(1), pp. 67-85.
- Sigmundová, A. (2019). *Čtení s porozuměním jako předpoklad úspěšné strategie řešení slovních úloh v matematice*. [Dissertation thesis, Univerzita Karlova]. Prague.
- The Republic of the Union of Myanmar. (2016). *National Education Strategic Plan 2016-21*.

https://www.britishcouncil.org/sites/default/files/myanmar_national_education_strategic_plan_2016-21.pdf

16. Van Dijk, T. A. (2012). On macrostructures, mental models, and other inventions: A brief personal history of the Kintsch-van Dijk theory. *Discourse comprehension*, pp. 383-410.

17. Whitcroft, L. (2010). Čtenářské strategie – 1. díl – Co jsou čtenářské strategie. *Čtenářská gramotnost a projektové vyučování*. <http://www.ctenarska-gramotnost.cz/ctenarska-gramotnost/cg-strategie/cg-strategie-1>.

18. Yang, Y. F. 2006. Reading strategies or comprehension monitoring strategies? *Reading psychology*, 27(4), pp. 313-343.

19. Zápotočná, O. (2012). *Čitateľská gramotnosť a jej rozvoj v primárnom vzdelávaní*. VEDA. ISBN 978-80-224-1281-0.

Primary Paper Section: A

Secondary Paper Section: AM