DETERMINANTS OF THE WRITING PROCESS IN ELEMENTARY SCHOOL PUPILS

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Abstract: The presented study presents an elementary theoretical basis of research activities aimed at observation of the relation between pupils' metacognition and the level of their productive text competence. In the presented study we characterize the individual components of metacognition in relation to writing, i.e. we define the individual indicators of self-regulation of learning (self-efficacy, monitoring and self-regulation, strategic thinking, self-assessment). In the second part of the text we describe a possible way of diagnosing and observing pupils, whereas at the same time we expect a positive influence on the writing process itself.

Keywords: writing, self-regulation, self-efficacy, self-assessment, upper elementary school pupil.

1 Introduction

Writing a text is perceived as a problematic learning task. When developing the skill to produce texts, on the one hand pupils acquire text competence, on the other hand the development of (especially strategic) thinking can be significantly influenced. As to strategic thinking, pupils are active learners, think about alternative solutions and potential obstacles, consider risks, structure their individual steps according to a certain time dimension and work attentively with the aim to achieve the best results. If the chosen strategy is wrong or incomplete, deficiencies will be reflected in the quality of the text. At the same time, these deficiencies signalize problematic self-regulation.

The level of pupil's final text is influenced by many factors. On the basis of previously implemented research investigations (Kusá, 2016), we defined the initial aspects of diagnosing metacognitive functions of pupils that are active during the writing process. At the same time, we set an assumption of a direct influence of the metacognition level on the quality of the text. On this basis, we identified a need for further research surveys focused on individualization of the entire research process. Therefore, we focus on continuous observation of the individual pupils and their text production, diagnostics and assessment. The learning process itself will be individualized in the end. The planned experiment will provide the teacher with valuable information concerning the individual pupils and their progress when acquiring their writing skills. This leads to a significantly more targeted intervention in pupils who encounter writing problems.

We assume that various factors play a key role in the writing process. They are indicators of the level of acquiring text competence and the level of metacognitive knowledge and skills: 1. Perceived academic efficacy, relation to the learning role; 2. Level of metacognitive (self-regulation) skills - planning and monitoring; 3. Self-assessment skills. The aim of the following text is to formulate the theoretical basis and to indicate possible approaches to observation of the relation between the above-mentioned factors and the level of productive text competence.

2 Metacognitive knowledge and self-efficacy

According to Hrbáčková (2011), not only cognitive determinants but also affective, i.e. personal relation to learning, and metacognitive, i.e. knowledge and self-management in the process of learning, determinants play an important role in the writing process.

Metacognitive knowledge is individual's knowledge of the strengths and weaknesses of his / her own cognition (Říčan,

2016). Traditionally, metacognitive knowledge includes individual's self-knowledge, knowledge about the task and knowledge about the strategies necessary for him / her to solve the task, and subsequently its controlled application, i.e. the so-called metastrategic knowledge (Říčan, 2016; comp. Flavell, 1979).

An important factor that influences the writing process is the so-called perceived academic efficacy which is part of the metacognitive knowledge (Otani, Widner, 2005). Self-efficacy is a certain self-reflection in relation to the learning task (the level of knowledge about the learning task plays an important role - its value as well as the knowledge of the solution strategies), i.e. believing in one's own abilities (comp. Harris, 2009). With reference to various researches, we can assume a direct connection between perceived self-efficacy and the course and results of learning; if the pupil perceives himself / herself as capable, this fact will be reflected positively in his / her motivation and by his / her choice of the strategy to solve the given learning task (Bandura, 1994). Therefore, we assume that pupils showing a higher level of self-efficacy (pupils who are focused on mastering the learning task and perceive themselves as a factor that affects the course of activity and whether or not the goal is achieved) will show higher performance and efficacy throughout the entire writing process. When such a pupil is exposed to a difficult learning task, he / she perceives it as a challenge, does not give up when things get complicated, does not feel anxiety but, in line with strategic thinking, looks for an alternative solution (Fisher, 2011). Many professionals demonstrate this relation (Bandura, 1994; Pajares, 2003; Schunk, 2010, etc.), i.e. pupils who do not perceive themselves as authors of good texts do not like writing or approach writing differently compared to those with a higher level of self-efficacy (they cannot plan the solution strategy properly, they concentrate poorly, they are anxious when complications occur, feel helpless and often give up their activity, unable to work with time efficiently, avoiding difficult tasks, etc.). They often produce too short or incomplete texts. On the other hand, texts written by pupils with a higher level of self-efficacy are more extensive and their quality is generally better.

Observation of self-efficacy in individual pupils will bring valuable insight into their relation to themselves, the learning task and the expected pupil's approach to the whole writing process. Self-knowledge is one of the main prerequisites for internal motivation and effective self-regulation of learning activities.

3 Metacognitive skills

Strengthening the algorithm of the writing process and internalizing the way of thinking is supported by the conscious control of individual's own cognitive activities, i.e. self-regulation of learning. It consists in the assumption of a self-command language that is related to the so-called silent knowledge – the pupil can recognize what will help him / her to achieve goals, and he / she achieves them (Málková, 2009, Sternberg, 2001). An individual who has assumed metacognitive skills can accurately identify the goal, independently thinks about the procedures that will help him / her to achieve the goal, chooses, evaluates and changes strategies, i.e. he / she engages in an internal dialogue with himself / herself, follows his / her own thinking with the aim to achieve the goal.

Metacognitive skills (referred to as self-regulated learning skills by some authors, e.g, Foltýnová, 2009) which are part of metacognition, consist in planning of cognitive processes, their regulation and evaluation (Cao and Nietfeld, 2007; Krykorková and Chvál, 2001; Veenman et al., 2006, etc.). During planning an individual formulates and analyzes a goal in relation to his / her self-efficacy and his / her own relation to learning tasks of the given type and his / her possibilities. Consequently, he / she chooses the way how to process the learning task, thinks of the

solution algorithm and the appropriate strategies. He / she tries to anticipate obstacles that could complicate the task and thinks in advance about how to implement a change in the solution strategy. The learning task is also being structured. The pupil generates individual activities through which the goal will be achieved and which must be performed in a certain time sequence, i.e. he / she plans a time schedule. We assume that a consistent approach to the monitoring process has a positive effect on achievement of goals (comp. Hacker et al., 2009). Self-regulation itself is a metacognitive control - self-monitoring and self-management. The individual deliberately follows steps through which the task is solved. He / she revises the selected procedures and chooses a different way of solving in case of difficulties, he / she uses the so-called conditional knowledge, i.e. he / she "is capable of choosing adequately and adaptively, depending on the situation, and thus responding to a variable situation by choosing a suitable strategy and adapting to the new conditions" (Říčan, 2016, p. 39). Metacognitive skills also include the ability of self-assessment. This ability has a major impact on transfer of acquired skills, i.e. their use in the future, for teaching tasks of a similar type as well as in situations requiring a similar way of thinking. The pupil continuously and finally evaluates the chosen procedures, especially their effectiveness and importance. After completing the task, he / she discovers critical parts, considers potential changes in the procedures when repeating the task, evaluates the benefit of the task to himself / herself, and so on.

4 Research design proposal

In order to develop text competence, pupil's thinking and his / her metacognition and ability to self-regulate using an appropriate and targeted didactic intervention, it is primarily necessary to capture and describe in detail the possible relation between the observed phenomena and to identify the key factors and possible deficiency areas.

The research survey is focused on working with individuals. We assume implementation of a qualitative research survey which will allow observation of the individual pupils of the experimental group (fifteen pupils) and a detailed analysis of their texts, and in particular a description of the influence of the monitored factors on the form of pupils' texts. To be more specific: the selected group of pupils will be observed as to the influence of self-efficacy and their relation to the learning task on the course of the writing process. Furthermore, the level of metacognitive (self-regulation) skills and their influence on the quality of the text will be examined.

Experimental activity also encourages pupils to work more effectively. Pupils' thinking deliberately slows down. We can assume an increased motivation and interest in the task itself, the solution algorithm is becoming more accurate and consolidated, pupils follow the flow of their ideas and so they become more metacognitive (Cibáková, 2015). We agree with Hrbáčková's opinion (2011) indicating that supporting pupils' self-regulation generally shapes their positive relation to learning and lifelong learning (comp. Říčan, 2016); pupils who regulate their own learning are gradually assuming ways of self-regulation in other areas of life.

The aim of the first phase of the research survey is to capture the influence of the level of self-efficacy in relation to writing on the course of the entire process and its result (i.e. on the quality of the final text). To this end, we primarily plan to use the General Self-Efficacy Scale (GSE) to assess the degree of pupils' optimistic self-esteem and the extent of their belief in their own responsibilities in relation to learning tasks and the perceived ability to manage problems. Pupils will fill in the following ten-item scale (Schwarzer, R., & Jerusalem, M, 1995):

General Self-Efficacy Scale (GSE)	Scoring
1. I can always manage to solve difficult problems if I try hard enough.	
2. If someone opposes me, I can find the means and ways to get what I want.	
3. It is easy for me to stick to my aims and accomplish my goals.	
4. I am confident that I could deal efficiently with unexpected events.	
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	
6. I can solve most problems if I invest the necessary effort.	
7. I can remain calm when facing difficulties because I can rely on my coping abilities.	
8. When I am confronted with a problem, I can usually find several solutions.	
9. If I am in trouble, I can usually think of a solution.	
10. I can usually handle whatever comes my way.	

Scoring	Not at all true	Hardly true	Moderately true	Exactly true
	1	2	3	4

The total score is calculated by finding the sum of the all items. For the GSE, the total score ranges between 10 and 40, with a higher score indicating more self-efficacy.

In order to identify the relation of pupils' self-efficacy in relation to writing, we have created a modified version of the GSE scale. This one is more specific, i.e. relates directly to the problematic task of writing (i.e. it combines two constructs of metacognitive knowledge - the relation to himself / herself and to the learning task). Comparison of the results of both scales will allow us to determine the degree of self-efficacy in relation to the particular problematic task. It is to be assumed that an experimental group may include pupils who generally show a higher degree of self-efficacy, however, it diminishes when the learning task is specified (i.e. pupils do not consider themselves to be good authors of texts but in different learning situations they believe in themselves) and vice versa (generally, pupils do not believe in themselves very much but they consider writing to be their domain). Comparing scores 1 and 2 will allow us to detect such cases.

The modified scale contains the following formulations:

Modified version of the Self-Efficacy Scale	Scoring
1. I can always manage to write a difficult essay if I try hard enough when writing.	
2. If something complicates my writing, I can find ways to overcome the obstacle and continue.	
3. It is easy for me to write a good text.	
4. I know how to write a good text thanks to my experience, possibilities and knowledge.	
5. I believe in myself. I know that I can handle any unforeseen situations or complications I experience when writing a text.	
6. I can write almost anything if I invest the necessary effort.	
7. I can remain calm when facing difficulties during writing because I can fully rely on my coping abilities.	
8. When I am confronted with a problem during writing, I can usually find several solutions how to cope with it.	
9. If I am in trouble (I do not know how to continue, I need to change a part of the text, etc.), I can usually think of a solution.	
10. I can usually handle whatever comes my way during writing.	

The second phase of the research survey will focus on observation of the level of metacognitive skills of pupils (i.e. planning and self-regulation). For this purpose, pupils will draw up a check-list (chart) before they start writing the text through which they will plan all steps that will make them achieve the goal (i.e. to write a text on a particular subject). When processing the check-lists, pupils will be allowed to proceed in any way (structured text, drawings, pictures, etc.). They will also work with the check-list during and after writing; they will put a comment to each check-list item. These comments will include information on the progress of the item, possible complications that may occur and their solutions.

The research data will allow us to observe how pupils perceive the respective learning task, whether they perceive all items of the knowledge domain (i.e. education areas, teaching tasks - in this case all three stages of writing: prewriting, writing, postwriting) or whether they show certain deficiencies in this respect which will subsequently appear / not appear in their texts. All components of the knowledge dimension will be observed according to the revised Bloom's taxonomy (i.e. knowledge of facts, concepts, process and metacognitive knowledge - see Kusá, 2016, p. 27).

The third research phase will be focused on self-reflection and self-assessment which are important parts of metacognition. In order to capture the self-assessment process of pupils, we will use the method of unfinished sentences. Pupils will complete the following formulations:

1.　*I have managed...*
2.　*I need to improve ...*
3.　*Mainly ... facilitated my work.*
4.　*... made my work more complicated.*
5.　*... proved to be good.*
6.　*Next time I would act differently when ………………………………… because ………………………………………………*
7.　*I have learned...*
8.　*I enjoyed...*
9.　*I did not like...*
10.　*I will surely use...*
11.　*I do not think I will use ...*

The unfinished sentences are formulated to develop pupils' self-reflection ability. They encourage them to perceive themselves as a factor that influences the course of learning. In relation to the given learning task and the activities that led to its completion, pupils look to the past (see questions 1, 2, 3, 4, 5, 7, 8, 9) but also to the future as they think of the learning task itself and the transfer possibilities (see questions 6, 10, 11). This research phase also has an educational value as pupils are encouraged to use metacognition.

All the data will be subject to a qualitative content analysis using encoding. Each pupil will be assessed individually. The results of the individual research phases will be interpreted in relation to the final texts of the respective pupils. They will be assessed on the basis of the following criteria: 1. Content, topic; 2. Communication intention; 3. Use of language; 4. Text composition, structure and coherence; 5. Intellectual value, level of argumentation; 6. Creativity, originality.

5 Conclusion

The presented study brings the theoretical basis for the planned research survey which is part of the project named *Autoregulation of learning during production of text carried out by pupils of the upper elementary school*. The aim of the research survey is to observe the level of metacognition in pupils in relation to the writing process. We focus on metacognitive knowledge, i.e. self-knowledge in relation to the given learning task, which is directly related to the level of self-efficacy. At the same time, our aim is also to observe the metacognitive skills used by pupils during the writing process. They include activity planning, self-regulation and the level of self-reflection and self-assessment. For the purpose of the research, it was necessary to determine the relevant theoretical basis, i.e. to clearly define mainly the following theoretical constructs: metacognitive knowledge, self-efficacy, metacognition, metacognitive skills - planning, observation, self-reflection and self-assessment. At the same time, we are also presenting the research design. The research survey consists of three phases and uses such methods that allow insight into the writing process of individual pupils, including observation of non-cognitive, psychological factors. The aim of the text is to draw attention to the connections between the level of the metacognition and the level of pupils' success in the field of writing. At the same time, we point out the need for an innovative approach to assessment of pupils; a teacher using the aforementioned experimental methods can detect the causes of failure of his / her pupils more easily and, therefore, respond in the form of appropriate pedagogical intervention.

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