

SELF-EFFICACY, MONITORING, EVALUATION AND WRITING

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Abstract: This study brings results of the first phase of research probe that monitors relation between the metacognition of pupils of secondary school and level of their writing. Qualitative research probe is focused on the pupils aged 14 to 15 and is based on the continuous monitoring of individual pupils. During the research, respondents worked with several monitoring and diagnostic tools. Research activity had also an experimental nature and supported pedagogical-educative process among the monitored group of pupils – it significantly influenced course of the classes (respecting the processual nature of writing) and approach to particular pupils, mainly within the area of diagnostics and evaluation.

Keywords: self-efficacy, self-regulation, writing

1 Introduction

The aim of this presented study is to present results of research survey carried out within the frame of *Self-regulation of learning during production of text carried out by pupils of the upper elementary school* project. Within the first phase of the research survey we defined required theoretical basis, it means we determined several factors that represent indicators of text competence adoption rate. Its monitoring allows us to describe relation between the level of pupils' metacognition and quality of his/her text.

Factor 1 represents metacognitive knowledge and level of self-efficacy. During the process of writing monitoring it is necessary to pay attention to factors of affectionate nature. In the first phase of the research probe we monitor personal relationship of the particular pupil to writing. In so doing, we rely on the general self-efficacy – pupil evaluates his/her self-efficacy in relation to tasks of any type or to problem situations. We consequently observe pupil's relationship to writing itself – it means how he/she approaches to a given task, how he/she perceives himself/herself as an author of the particular text (comp. Harris, 2009). Based on the earlier findings (comp. Bandura, 1994, Schunk, 2010) we can assume higher quality of texts among pupils with higher personal self-efficacy. Differences between pupils with higher and lower self-efficacy are evident even in the approach to a teaching task itself, in the efficiency of learning process and also in the nature of the resulting text. Metacognitive knowledge include knowledge about the task and strategies for its solution. This knowledge is directly exposed in the process of planning and monitoring and it influences its progression (Říčan, 2016).

Factor 2 is represented by metacognitive skills, it means ability to plan and monitor. The second indicator allows us to determine to which rate the pupil masters algorithm of the task = writing the text. We monitor how the pupil approaches to planning of independent steps and how the pupil uses self-regulation skills and strategic thinking – it means if the pupil continuously evaluates the writing process and if he/she adjust the following procedures based on the previous.

In particular, we monitor:

1. whether and how the pupil defines a goal;
2. whether and how the pupil thinks of the algorithm of a solution – it means if he/she structures the task, defines sub steps that will bring him/her to the goal;
3. whether the pupil considers complications and their potential influence on the change of a procedure.

Factor 3 covers pupil's self-assessment skills. Aim of this part is to monitor progress of self-assessment. Ability to evaluate progress of own educational activity belongs to very important metacognitive skills. Absence of self-assessment negatively influences both opportunity of possible development in the given area and transfer of knowledge, abilities and skills to the next educational and noneducational situations.

2 Research Methodology

Qualitative research probe that was carried out in autumn of 2018 was based on the systematic monitoring of group of 15 respondents aged 14 to 15. In the given development stage significant improvement of metacognition is taking place, we can observe domination of more complex and abstract thinking and we can also assume ability of strategy thinking (Krejčová, 2013). Is it the adolescent period where we can observe improvement of metacognition – pupils' thinking is more complex, abstract and executive functions are also being significantly developed (Krejčová, 2013; Fisher, 2011; Díaz, 2017).

For the purpose of monitoring of factor 1 we used General self-efficacy scale (GSE), in the second stage its modified version (M-GSE). GSE is a scale assessing rate of optimistic self-evaluation of pupils, perceived ability to manage problems and rate of their own belief of their responsibility in relation to tasks (Schwarzer, & Jerusalem, 1995). Modified version was created in order to specify levels of self-efficacy through concretization of a task.

Within the first stage pupils reacted to the following statements through distribution of values from 1 to 4 (not at all true, hardly true, moderately true, exactly true).

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.*

After the certain time period pupils worked with modified scale (M-GSE):

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 research stage is of highly educational character. Prior to writing the text itself (in case of monitored group of pupils these are essay texts) pupils create so-called chart, it means check-list. Based on the obtained materials we can identify a way pupils use to approach to planning and monitoring – through implementation of check-list these processes are activated (comp. Diaz, 2017). We thus find out what the level of their metacognitive ability is (factor 2).

Creation of check-lists is followed by the next research stage – production of text on a given topic. At the beginning of the activity pupils define how they feel through key words (this part is added to the modified GSE scale and allows us to perceive pupil's relationship to writing the text and pupil's momental „tuning“ for the given activity – factor 1). Text itself will be subject to detailed evaluation in these areas:

- text content + argumentation
- creative approach to the topic elaboration
- communication purpose
- language level
- structure of the text, cohesion and coherence

Further, for the purpose of monitoring of factor 3 we used method of unfinished sentences. Pupils were finishing following formulations: 1. *I handled ... well* 2. *I need to improve ...* 3. *My work was easier thanks to...* 4. *My work was complicated because of...* 5. *I had great success with...* 6. *Next time I would use different approach when.....* 7. *I learned...* 8. *I enjoyed...* 9. *I did not enjoy...* 10. *I will find ... valuable* 11. *I will probably not use....* The unfinished sentences have highly educational character – through this activity, pupils develop superinfection skills and not only in the area of evaluation of the carried-out activity but also in the area of transfer of learned subject.

Evaluation of the obtained research data is individualized – materials of each particular pupil are judged and evaluated in a complex fashion.

3 Research Results

Evaluation of GSE indicates that according to the given text pupils show average self-efficacy. After counting all values of the scale we vary between 10 to 40 points whereas low value represents high self-efficacy.

Monitored group of pupils varies between values 12 to 24. Only one respondent (Natálie) is close to the extreme value. Values of GSE were compared to values of M-GSE for every particular respondent. Comparison of results for both scales will allow us to determine rate of self-efficacy in connection with particular problem task, it means writing the text. Among half of the respondents no significant differences were observed – it means that general self-efficacy of the pupils does not differ from self-efficacy in relation to writing of the text. Among the rest of the respondents we observed disproportion of two types. Within the experimental group there are pupils that show generally higher rate of self-efficacy, however, this rate is decreasing with concretization of the task. Such pupils do not consider themselves to be good authors of texts, they are afraid of writing but they are confident in other learning situations. These respondents are marked with symbol yes / - (Karolína, Jakub, Roman). Among the rest of the pupils, disproportion of the second type was observed – among these pupils, general self-efficacy is at the average level, but it is increasing with concretization of the task – it means that pupils believe in their own abilities right in the given problem task. These pupils are marked with yes / + (Petra, Tereza, Stela).

Respondent	GSE	M-GSE	Disproportion
Karolína	17	21	yes / -
Jakub	21	24	yes / -
Martin	24	23	no
Petra	20	16	yes / +

Roman	18	24	yes / -
Sam	25	24	no
Pavel	23	23	no
Tereza	20	16	yes / +
Mariana	19	21	no
Natálie	12	12	no
Nela	21	19	no
Magda	22	21	no
Jan	23	21	no
Stela	20	14	yes / +
Kačka	21	20	no

Table 1: Score for GSE and M-GSE

The second research stage monitored pupils' ability in the area of algorithm verbalization that is worked with during the text creation. During analysis of the check-lists we considered representation of individual stages of the writing process, it means prewriting – writing – postwriting (Carroll, 2007; Šebesta, 2005; model of text production by Hayes and Flower; model of text production by Ludwig) and we did this by usage of three grades marking (yes, partially, no). In case of presence of deficits in area of planning we identified these certain deficits and monitored their influence on the text quality within the following research stage. Following table clarifies in which stages process of writing showed significant deficits.

Respondent	PREW.	WR.	POSTWR.	Deficit area
Karolína	partially	yes	yes	gathering information and its categorization
Jakub	partially	yes	yes	formulation of topic/purpose, planning of procedure, strategy
Martin	partially	yes	yes	formulation of topic/purpose, planning of procedure, strategy
Petra	partially	yes	yes	formulation of topic/purpose, planning of procedure, strategy
Roman	partially	yes	yes	formulation of topic/purpose, planning of procedure, strategy
Sam	partially	yes	yes	planning of procedure, strategy
Pavel	partially	yes	yes	formulation of topic/purpose, planning of procedure, strategy
Tereza	partially	yes	yes	categorization of information
Mariana	yes	yes	yes	---
Natálie	yes	yes	yes	---
Nela	partially	yes	no	formulation of topic/purpose, gathering information and its categorization, text editing
Magda	partially	yes	yes	planning of procedure, strategy

Jan	partially	yes	yes	planning of procedure, strategy
Stela	yes	yes	yes	categorization of information
Kačka	partially	yes	yes	formulation of topic/purpose, planning of procedure

Table 2: Results of check-lists analysis

Check-list analysis pointed out following facts:

- significant number of respondents shows partial deficits in one of the text production stages – only two respondents caught complexly algorithm of text production);
- most frequently the deficits proved in the prewriting stage – pupils frequently forget to form topic and communication goal. At the same time they rarely include stage of procedure planning into the process of writing – it means choice of solution strategy; part of the respondents do not mention collecting or categorizing of thoughts and information (see table 2);
- check-lists of respondents feature certain shortness, mainly within the description of writing and postwriting stages (respondents do not catch multilevel text control – reformulation, language level etc.) – therefore it is necessary to work with a presumption that text editing is carried out unsystematically;
- perception of process character of the text creation shows oftenly original graphic elaboration of check-lists – pupils compared text creation to running/driving a car from the start to finish, to riding a horse through obstacles, to sailing on the river or to a pirate adventure, to trip around the world, to a journey where they visit individual stations (topic – school, gathering information – library, topic selection – library, other planning – travel agency, writing – elementary art school, correction of mistakes – police).

Prior to writing the text itself pupils verbalized their feelings – based on their analysis we can assume what relation to writing pupils have. Among most of the pupils negative feelings prevailed – fear, anticipation, nervousness, aversion, stress (score of modified GSE among these respondents varies between 21 to 4 – these pupils believe in their writing skills far less and at the same time they show negative relationship to the given task). Positive emotions were shown among Petra and Tereza – determination, creativity, responsibility (these are respondents with higher modified GSE score – see table 1) and Natálie, Nela, Magda, Stela a Kačka – enthusiasm, curiosity, determination connected with anticipation (among these respondents modified GSE varies between 12 to 21).

Texts of pupils (essays with topics „Is fashion important?“, „Are we addicted to social networks?“, „I hate and love“, „World without rules“) were judged individually and they gave the teacher valuable information used for dynamic evaluation (it means evaluation of the whole process). As you can see in the following table, we evaluated texts in the five areas with grades A, B, C (in descending order). After this we calculated average value. We used the same values to mark scores within the modified GSE (B represents average value).

Based on the comprehensive analysis the following facts arised:

Only three pupils created structure of the text prior to writing itself (draft, mind map etc.) – text of all respondents except two (Tereza’s text who worked with a draft and created clear picture of the structure of her future text) show composition faults – thoughts are sorted chaotically. We can see direct relation between absence of preparation steps and mistakes made in the structure of the text. This is also confirmed by comparison of deficit areas among individual check-lists to texts – pupils who did not include gathering and categorization of information and

planning of procedure/strategy into their check-lists create texts that show confused structure and chaoticness.

We can see relation between values gained through modified GSE and level of the text (see table 3 – colored cells). Gained values are among most of the pupils identical (it means if the average level is GSE, the level of the pupil’s text is also average). Among smaller group of pupils the values do not match (two pupils show average GSE but created texts of level A; among three pupils the level of the text is lower than their GSE value).

Respondent	GSE/M-GSE	M-GSE score	Quality of text
Karolína	17/21	B	C
Jakub	21/24	B	B
Martin	24/23	B	C
Petra	20/16	A	A
Roman	18/24	B	B
Sam	25/24	B	B
Pavel	23/23	B	B
Tereza	20/16	A	A
Natálie	12/12	A	B
Nela	21/19	B	B
Magda	22/21	B	B
Jan	23/21	B	A
Stela	20/14	A	A
Kačka	21/20	B	A

Table 3: Relation between M-GSE level and quality of text

Self-reflection is necessary part of metacognitive knowledge. It gives a teacher important informatin about learning of the pupils, for the purpose of the following didactic intervention. It is valuable for the pupil himself/herself. Analysis of unfinished sentences brought following findings (we focus on the selected key areas):

Among many respondents we can see obvious connection between deficit areas and self-evaluation – these pupils carry out efficient self-reflection, they are aware of their own reserves.

Most problematic areas were: deeper thinking about the topic, text clarity, explanation, sentence formulation.

Pupils considered creation of the check-lists as valuable. This method of work was innovative for them. We can say that monitoring of pupils itself had an educational dimension. Pupils thought about the writing as a process, they were aware of importance of the planning stage.

We consider transfer as problematic. Four pupils did not finish the given sentences (Kačka, Magda, Nela, Martin) – the others were unified in their formulations. They think that writing the essay and thinking itself can be used in writing of future texts within the school environment but not outside the school. Therefore we can assume that they are not enough aware of a possible transfer of general skills (ability to think deep, categorization of thoughts, argumentation etc.). We consider this area to be a key area in relation to further didactic intervention. The transfer (mainly outside the school environment) forms one of the basic parts of the mediated teaching.

4 Conclusions

Carried out research probe allowed us to monitor process of pupils’ writing, with focus on the relationship between self-efficacy, metacognitive skills and quality of text. Analysis of research data indicated several important facts. We can assume significant connection between GSE and quality of pupils’ texts – it is didactical prosperous to support development of pupils’ self-efficacy and internal motivation to writing as well as awareness of transfer of learned knowledge outside the school environment. We observed direct relationship between process of planning of the writing and quality of the text – if pupils do not monitor all stages of writing it oftenly leads to deficits in the text itself. Monitoring of the whole process allows teacher to precisely identify reasons for pupil’s nonsuccess when writing

the text and it also allows teacher to modify further educational activity. At the same time monitoring represents suitable implementation of metacognitive strategies to the classes (for example through usage of check-lists and self-evaluation techniques) – pupils are led to writing that is managed and evaluated by themselves and at the same time we can assume improvement in their metacognition.

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