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## **Working with Text as a Determinant of the Development of Creative and Critical Thinking**

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### **Abstract**

The paper deals with working with text as a determinant of the development of creative and critical thinking of students. In individual parts of the work, the authors focus on the theoretical basis of creative and critical thinking, and their application in educational practice. Out of several ways of working with the text developing critical thinking, the authors have chosen two ways and subjected them to a theoretical analysis. The aim of the contribution was to point out the importance of both linear and nonlinear structuring of the curriculum in educational practice as well as to analyze the advantages and disadvantages of the given ways of working with text considering the development of students' creative and critical thinking.

### **Keywords**

critical thinking, creative thinking, metacognitive, working with text

### **Creative and Critical Thinking**

Although the present school should respond to the current needs of the current time, we still get in touch mainly with the so-called traditional teaching, the characteristic of which is the transfer of the curriculum in terminate form, which leads to the accumulation of information, but does not encourage pupils to develop their own thinking and to evaluate what they have heard, seen and what they have met with.

Such type of teaching directly suppresses creativity and critical thinking. Pupils play the role of passive participants when their job is not to disturb, to write notes from the

board mechanically, to learn the required text by heart and to be able to answer the questions without any argumentation and assessment. Many teachers do not lead pupils to examine their assumptions independently, to look for evidence, to analyze statements, and to discover contradictions. Many international measurements, such as PISA, in which Slovak children have reached relatively unfavorable results, point to the previously mentioned facts.

When we talk about creative thinking within pedagogical terminology, we mean the specific kind of thinking for which are typical: perseverance, responsibility, external and internal motivation, ability to connect knowledge from different disciplines, independence from authorities, independent thinking, critical assessment of information, searching for variant solutions, to discover the essence.

Therefore, the focus of today's school should not be a traditional transfer of knowledge, but such form of teaching that is based on activating methods – directed towards responsibility for learning and fulfilling duties, formulating hypotheses, creating ideas, solving problems ...

Operationalization of the notion of creativity is an extremely demanding process, because there are many paradigms that the area, theoretically or empirically covers. It could be argued that there are at least as many definitions of creativity as are the experts dealing with the issue.

In general, most scientists agree in the consensus that creativity is (according to Kaufman & Baer, 2004, p.4): "the ability to produce works that are new (i.e., original), of high quality and appropriate (i.e., useful).

We are of the opinion that, thanks to creativity, everyone can adapt to new conditions and circumstances, can find alternative solutions to the problems that arise, and creativity is extremely important in artistic and scientific works.

Creativity began to be investigated systematically after 1950 and J. P. Guilford's speech in the American Psychological Society can be considered for a milestone in this area. In this speech, the author criticized, in particular, the neglect of creativity by psychologists, while the main topics he covered were the possibilities to explore and develop the creative potential of children and explore different strategies of supporting and developing creative personalities.

We agree with V. Spousta (1997), who sees creativity within the framework of psychological and pedagogical understanding primarily as a tool for the self-realization of personality and fulfillment of the meaning of his life. In the intentions of this understanding, the development of creativity is considered to be one of the most up-to-date and most important questions of pedagogical theory.

Creativity should be demonstrated in all areas of educational practice, but the most important attribute in the development of creative thinking of pupils is a creative teacher.

Should a teacher lead pupils to creativity, he must be a creative personality himself. It means that he should be open to other people and their opinions, but at the same time

he should be demanding when observing problems and realizing ideas. As it is described by J. Maňák (1996), curiosity, autonomy, but also courage in thinking, liberation from conflicts and stress are expected from the creative personality, because creativity also requires freedom in the inner-mental world of human.

Solarova (1996) believes that if a teacher is creative at work, he does not only require his students to reproduce the acquired information, but he leads them to an independent and creative activity, critical thinking and selection of information.

We completely agree with this view since it is significant for pupils to search for the information on their own, to evaluate them and select whether it is important or unimportant. At present, we are constantly being confronted with a large amount of information. We listen as well as read some information from different sources, and we do it almost mechanically. We do not judge them critically.

Linhart (In Solárová, 1996) emphasizes that a creative teacher must always think about what to teach, how to teach, when to teach, how to control the learning outcomes and how to develop a student's personality during the learning process. We think that it is ideal when the teacher chooses the methods and forms in which the pupil is led to deal with the tasks that incite to activity and practice.

According to Hvozdk et al. (1994) a creative teaching is accompanied by the following rules:

- a teacher leads pupils to create solutions and alternatives;
- a teacher leads pupils to ask questions and search for answers;
- a teacher leads pupils to an evaluative thinking;
- a teacher works with tasks that are at the boundaries of the possibilities of each student.

In this contribution, creativity is defined as the uniqueness of the methodical creation of work with text, the preparation of the text by the teacher. The teacher can also make a less interesting text or a lesson more interesting and fascinating for pupils when using a creative approach and activity. In this case, the teacher must avoid the monotony and loss of pupils' interest by more frequent alternation and variety of teaching activation methods. It is important to create such environment for the pupil that he makes his own suggestions and insights and expresses his feelings when working with the text Gerušková, M. (2015). We understand this as a part of the development of pupils' critical thinking.

Critical thinking is also undoubtedly an important issue in school education. In the school environment, pupils encounter a lot of texts that are not always mentioned in their textbooks, they also work with modern books, encyclopedias, but also with contributions on the Internet. Their quantity is huge and very accessible, but how about the quality of those texts?

It is important that learners consider and evaluate the relevance of the information in the era of technology and an easy access to all information. This is one of the arguments of the importance of critical thinking not only in school and the school

environment, but also in an ordinary life. Critical thinking should be the competence of every person.

Though ancient Greeks have started to tackle the issue of critical thinking, even today, it is not a matter of course in our education and in our opinion, since not enough attention is paid to critical thinking. In Slovakia, this term comes to attention at the turn of the 20th and 21st century. Experts cannot agree on its uniform and precise definition. From the foreign authors, Facione (1990), Ennis (1991), Paul (1992), Lau (2011) and Watson-Glaser (2012), dealt with the definition of critical thinking. The definition of critical thinking is not unified, but most authors who deal with the issue agree that the nature of thinking is a mental manipulation with words – aimed at words creation, decision-making, and problem-solving.

We understand critical thinking as a set of thought-based operations that begin with information and end by making a decision on the basis of acquired knowledge.

For most authors, critical thinking is associated with a cognitive and affective dimension. e.g. (Watson, Glaser, 2012, p. 6). Cognitive dimension manifests itself in contact with information and argumentation. We rely on Bloom's Taxonomy, where critical thinking is compared to analysis, synthesis, and assessment as a higher ability to think.

The second dimension affects perseverance, curiosity and fulfillment of one's needs. In our view, these two pages need to be complemented by behavioural dimension, for example, when using different approaches for structuring the curriculum - conceptual maps, diagrams. Behavioural dimension is the ability to mediate information using different types of schemes, maps, and tables.

Critical thinking begins when there is a problem that needs to be posed and taken a stand. The main difference between critical and non-critical thinking lies in the fact that non-critical thinking does not evaluate and assume.

A person who uses critical thinking in everyday life distinguishes not only between opinions and facts, but he thinks about information thoroughly to get as much of it as possible.

Teaching pupils to think critically is an extremely demanding process. It is therefore necessary that we lead future teachers to encourage pupils to present their own opinions and attitudes, to give the pupils enough space for analysing information, to gradually learn how to use convincing arguments.

It is important for critical thinking to lead pupils to reason with questions such as: Why do you think so? How does it fit into what you are talking about? What would happen if? ...

This means that critical thinking builds its foundation on understanding and leads to the quality and effectiveness of learning as well as personal development.

We share the opinion of M. Kosturková (2014), who argues that if the critical thinking is not developed at elementary school or secondary school, neither university students nor people in ordinary life and situations will be able to think critically. If future

teachers are not led to use critical thinking during their university studies, what the possibility is they will lead their own students to think critically? A. Petrasová (2009) also points out the unreliability of teachers for this role.

From the available definitions and theories we have defined the basic attributes that are necessary for a critically minded teacher:

- is open his students' questions, encourages them to communicate about the issues;
- asks questions himself too,
- asserts assertively and thus responds to pupils' arguments,
- is not satisfied with the affirmation, but looks for logical evidence,
- distinguishes between facts and opinions,
- does not form an opinion based on one source, but looks at issues from multiple aspects,
- expresses interest in knowing pupils' views,
- critical thinking is a long-term process of self-assessment for him;
- distinguishes between facts and opinions.

We present a clear table in which we differentiate approaches in the teacher's work on the basis of his support for pupils' critical and creative thinking:

*Table 1 Creativity and critical thinking in the teacher's work*

<b>Creativity and critical thinking in the teacher's work</b>	
<b>A teacher supporting pupils' critical and creative thinking</b>	<b>A teacher not supporting pupils' critical and creative thinking</b>
Offers pupils learning strategies	Prefers the established ways of learning
Focus on pupils' collaboration	Acts as an infallible authority
Creates a positive atmosphere on trust	Focuses the learning process on the acquisition of information
Requires and encourages pupils' activity	It suits him if pupils learn mechanically
- Leads pupils to search and select information	The teacher presents the facts and terminate knowledge himself
Appreciates pupils' original ideas and supports pupils in their assessment	Feedback is only provided to teachers
Leads pupils to organize their own knowledge	Pupils' knowledge is organized and handled by the teacher

Leads pupils to solve problems	One-sided communication is preferred.
Explores pupils' motivation	Requires obedience and silence during the lessons
Performs as an organizer and facilitator	Decides on the course of teaching on his own
Evaluates each pupil in terms of his progress, leads to self-assessment- -	When evaluating, compares students to each other
Takes into consideration pupils' interests	Ignores pupils' interests and motivation
Requires alternative solutions and uses divergent tasks	Focuses on convergent tasks
Assigns such tasks that promote the development of creativity and critical thinking	Does not support criticism, ideas, and pupils' queries

### **Learning text as a means of developing critical and creative thinking**

Learning text is a text that is adjusted to educating, self-educating. The most common text in schools is a textbook. The textbook is an educational medium, a didactic tool that provides important information for learners in a formal type of education.

Each text has certain content and formal features that are more or less suited to communicate with pupils. When pupils start to read certain texts at school, they intuitively feel whether they are simple, easy to understand, or difficult, sometimes incomprehensible texts. Understanding a written text is one way of getting information, texts are organized by a particular structure.

We claim that many textbooks for pupils are written in too demanding form, and as a result of it pupils cannot select the main concepts or the relationships between them. Therefore, it is important for the teacher to assess and analyze the curriculum critically before each new class.

When linking critical thinking and working with text, pupils get “under the surface” of the content of what they are learning. At this point, the process of understanding and the evaluation overlap.

In the process of understanding, attention is paid to the reading of the text content the pupil is aware of its meaning and usefulness. This text is received and understood by the pupil. Understanding is, according to P. Gavora (2012), based on knowledge of the world, on the development of cognitive abilities and skills. Understanding the text can be influenced by unknown words in the text, too long compound sentences,

incohesiveness of the text, also the structure of the text affects the overall understanding Mihálechová, M. (2012).

If the pupil finds out he does not understand the text while reading, he can use several methods:

- Interrupts reading and thinks about what he has read so far,
- Reads the whole text once more,
- Starts reading the text that is new to him, he has not read it yet and he is looking for answers to his questions,
- Reads the text further and believes that after reading the entire text he will understand and get a picture of the issue.

In the assessment process, pupils distinguish new text, new information, and put them in a relationship with the existing experience and knowledge. The evaluation is done by the student reviewing the information and making his own opinion about the text. In this process, the pupil works with both quantity and quality, using mathematical and substantive criteria. The pupil evaluates on the basis of some criteria such as (correctness, coherence and continuity, truth, accuracy, but also the value of the source, the author of the text) (Gavora, P. 2012).

Texts and curricula intended for studying should meet the self-regulation function and thus guide the learner to direct and manage his own activities. A. Petrasová, M. Zahatňanská (2014) says that the goal is to provide pupils with better metacognitive abilities through the text. The pupil will gradually improve his ability to understand and memorize the text. This happens thanks to regulatory elements that are reasonably built into the own text.

In this process, however, the teacher must creatively and critically approach to selecting and structuring curriculum content, choosing appropriate methods of working with text, giving time and opportunity for pupils to think critically. It is important to create a non-threatening environment where learners express their opinions without any fear. Currently, the most popular method for developing critical thinking is the EUR method, the Socrates method, the INSERT method, the Cloze-test and association methods such as brainstorming and conceptual mapping. Several specific strategies and programs have been developed abroad, such as STELLA (focusing on History and Chemistry), SPELT (for Mathematics, languages and social sciences).

Methods supporting the development of critical thinking contribute to the development of autonomy and decision making, and the pupil should acquire the skills and habits he will use in lifelong learning. The most common forms of text structuring which teachers work with are linear and non-linear. The teacher adapts the individual methods to these forms by which he tries to develop pupils' critical thinking. We analyze the following two of the above mentioned methods:

**The conceptual map** - represents a nonlinear form of structuring the curriculum. It is an excellent way to visualize how a pupil understands his ideas, how he portrays a

network of terms between relationships. It facilitates students' understanding of the curriculum, transcoding into more acceptable form, reconstructing the curriculum and creating a network of knowledge. This method develops the critical thinking of the pupil, because he has to evaluate the main terms from a lot of texts, to define the hierarchy of these terms and then to think about the relations between them. Each pupil is different, perceives the text differently and thus will have different conceptual maps. That is why we claim that the conceptual mapping also develops creativity.

**Cloze test** - is said to be a very good method for detecting text comprehension. It is a linear structure and it is usable not only in the school environment but also in research as a research method. Although this method is known for over 60 years, it has been used in education and practice just a little. Its appearance is very simple. It includes a coherent text in which the words are omitted and they are replaced by a line. The pupil's task is to complete the correct term / concept. All blank spaces, where the pupil has to add the text, must have the same size. This is because otherwise the size would give him a clue for the question. The teacher makes a decision when creating the cloze test to either skip each n-th word, or skip the words according to some intentions (keywords, verbs ...) The filled word must fit into the sentence meaningfully and grammatically. The objectivity of the evaluation is ensured by evaluating the performance of the pupil by two or more teachers scoring his performance equally. It is essential for a pupil to understand the context, understand the subject, and recognize the meaning of words in order to complete a missing word. This test is not a mechanical reading, but a deduction from the text. (Gavora, P., Šrajerová, H. 2009).

We propose specific steps within the analysis the teacher should adopt in order to be able to get the maximum knowledge needed for his pupils.

### **Teacher's Critical Approach to Curriculum Analysis:**

**Coding** (in this step is the resolution of essential information from insignificant, awareness of new and problematic parts of the curriculum.) We understand the coding as a representation of information according to predetermined codes. In today's world we have much more data and information than needed. Therefore, we have to select the information that is important. This step can also be encoded in the textbook in a symbolic way. It is a kind of record of information that is according to the teacher for pupils:

- Essential information EI
- Known information KI
- New information NI
- Problematic information PI (this is the discrepancy information that needs to be explained from different viewpoints, alternatively state more tasks to acquire the information)

**Comparison and coherence** (this is an analysis of how new information relates to previously acquired information.) In this step, it is not just an intercurricular analysis of

the curriculum but the creation of pupils' cognitive network. Search for possible links within the curriculum, the previous topics, everyday life, examples from practice, assuming of what students might have encountered.

It is also necessary to focus on the fact that pupils' knowledge should never be isolated but should form a coherent, logical unit.)

**Combining** (the given step includes collecting and selective coding, or comparing relevant information and combining it in a productive way.) More precisely, we mean the choice of appropriate methods and ways of working with the text that allow pupils to evaluate, reason, develop higher cognitive processes. During this step, the teacher thinks about methods that develop independent thinking, divergent thinking, pupils' responsibility for own learning, cooperation.

### Conclusion

As it is described by A. Petrásová (2014), it is necessary to realize that it is not possible to apply uniform and universal contents and procedures in any learning situation and to all pupils in the same way. It is desirable to think about the content of the curriculum in the pupil's teaching, how it is mediated and what his developmental prerequisites are.

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