

TEACHERS' UNDERSTANDING OF CRITICAL THINKING DEFINITION

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Abstract

Introduction. The need to develop critical thinking has been growing in the 21st century. It has become a key competence included in the school national programs also in Slovakia. The Slovak teachers' critical thinking conceptualization is analyzed by qualitative study in this research as teachers are those ones responsible for its development in the educational system.

Aim & Method: The study aim was to analyze the Slovak primary and high school teachers' critical thinking conceptualization (N=99, 73% of females, M_{age}=44 years, SD 10.56) and to explore their critical thinking interpretations. Text content analysis is an important part of qualitative research. There are two basic methods – descriptive-interpretative and hermeneutic one, but the best solution is to combine them. The starting point was a basic file reconnaissance by qualitative content analysis to orient in a file, and then to start interpreting the file in the context of hermeneutic approach. The aim was to analyze data from *Critical Thinking Questionnaire* of our provenience on critical thinking conceptualization in 2020.

Results & Discussion: The study results from the qualitative research analysis extracted 2374 words used to describe critical thinking understanding by the research participants. The qualitative frequency content analysis created data matrix decomposition. In the last phase, the synonymous and similar words clusters based on a word stem were formed to create critical thinking categories. The critical thinking “criteria dictionary” was based on frequency hierarchy. The results were compared with standardized critical thinking definitions. The results also proved 55% of respondents used wider or narrow critical thinking definition and 7% of them explained critical thinking completely incorrectly. The study was created as a part of newly established *Slovak Philosophy for Children Center* and of the KEGA 028UMB-4/2021 project.

Keywords: *Critical thinking, qualitative study, teacher.*

1. Introduction

Today it is probably more persistent than ever to think about critical thinking development not only of children, but also of adults. Critical thinking competence stated in the Slovak educational curricular document is considered as an important skill. We do presuppose the concept of critical thinking can have various non-professional interpretations, such as we have noticed in the adolescent's general population. They understand critical thinking very narrowly as a negative criticism aimed at someone – criticizing him/her. They forget that criticism as such can also be understood in the positive sense of good evaluation. On the other hand, if we want to explain the concept of critical thinking, we cannot use words with the same word stem in its definition, for example to criticize. We have analyzed teachers' understanding of critical thinking core conceptualization as a part of our research. They are those ones who facilitate students' critical thinking development. So, we wanted to find out what our research sample of the school teachers understand by critical thinking conceptualization.

In our understanding of critical thinking, we derived from the following definitions. Critical thinking is ...: ... “rational, reflective thinking focused on deciding what to believe and what to do.” (Ennis, in Cam, p. 10); ... criteria-based thinking related to the context (Sasseville, Gagnon, 2011, p. 34 and p. 64); ... independent, individual, information-based, presenting questions and problems, and well-thought-out reasoning is thinking in society. (Klooster, 2000, p. 8-9); ... thinking leading to correct and true conclusions. (Androvičová 2019, p. 113); ... means to evaluate new information, to form judgments, to evaluate the information importance for one's own needs and for real needs of society.” (Petrasová 2019, p. 148); ... "the process by which we evaluate information". (Royal, 2016, p. 8); ... the skill to recognize that an object of interest may be different from what it appears (Barnett, 1997 in Turek 2003); ... is systematic, consistent and objective thinking (Turek 2003, p. 9); ... making reasoned judgments, using criteria to evaluate the quality of anything, ... a consistent way of thinking to judge the validity of something (Beyer, 1995, in Turek 2003, p. 10); ... consistent mental activity aimed at arguments or statements' evaluation and drawing conclusions from them leading to certain opinions and

action (Huitt 1988, in Turek 2003, p. 11); ... intentional effort to understand what is happening via reasoning, evidence evaluating, and careful thinking about the thinking process itself. (Chatfield 2018, p. 6); ... is “the use of those cognitive skills or strategies increasing the likelihood of the desired outcome. It includes cognitive skills, disposition to apply these skills and a great knowledge of the content field (Halpern, Sternberg 2020, p. 8)

Considering these definitions, we form our working *referential definition of critical thinking* as *an ability to know the object of cognition as it is, not as it appears. This presupposes developed cognitive skills. Such a true knowledge of the object should lead to free and responsible decision-making and action.* Based on this definition, we determine the following referential key categories: *knowledge, object, truth, freedom, responsibility, decision-making, action.*

2. Methods

2.1. Research sample

105 teachers of the Slovak primary and high schools took part in the questionnaire survey using the occasional sampling method. We excluded 6 respondents due to incomplete questionnaires. We worked with 99 completed questionnaires of 73 women and 25 men with an average age of 44 years (SD 10.56; min. 24, max. 69) with an average teaching practice of 16 years (SD 10.26, min. 0, max. 41).

2.2. Method and procedure

The author's "*Short Questionnaire About Critical Thinking*" was used to obtain the data distributed online via Google forms platform during the year of 2020. It consisted of 17 items, of which 8 were demographic.

The data were evaluated in two ways.

1 – data from an item *What is critical thinking for you?* – we applied interpretive phenomenological analysis (Smith et al. 2009). We classified the answers into four qualitative groups of critical thinking definition: the definition was correct or incorrect, narrow or broad.

2 – we applied quantitative text content analysis for the data of five items requiring longer response (Ferjenčík, 2000). The starting point was the processing of the so-called frequency dictionary being created by decomposing the respondents' statements (a total of 5751 words) and each word frequency evaluation (a total of 2374). The disadvantages of this approach, mentioned by Hendl (2005, p. 360), were overcome by meaningless lexeme exclusion (such as numbers, conjunctions, prepositions etc., a total of 2255 words) and by lexeme combination with similar word stem on the basis of its meaning. In the next step, we merged the synonyms to create categories. A category dictionary was created rearranged in descending frequency order.

3. Results

The following list shows the occurrence of the 100 most used categories in the analyzed text. The frequency table consists of 2964 occurrences of semantically meaningful words. Bold written categories are closely related to critical thinking definitions. There were 5632 meaningful words from the analyzed text. Each of the listed categories implicitly contains also its derived word types and synonyms (e.g., value, evaluate, full-valued, assess, self-assessment, judge, judgment, verify, meaning, important, relevant, etc.), due to the length of the study, we do not mention them all here. We list the first hundred categories with a frequency from 128 to 9 per a category:

information, value, thinking, opinion, discussion, interest, knowledge, your, student, creation, analysis, man, ability, criticism, problem, teach, search, brainstorming, solution, activity, situation, correctness, possibility, manipulation, deficit, variability, source, method, reading, otherness, verification, work, time, quantity, acquisition, truth, question, reality, acceptance, basis, argumentation, expression, understanding, laziness, consequence, something, comfort, exploration, decision-making, development, formulation, why, fact, hour, attitude, need, independence, present, mainly, experience, society, act, differentiate, reason, theme, text, thing, reflection, goal, evidence, map, answer, resolution, life, presumption gift, generation, Hejny's method, accept, side, world, utilize, conclusion, medium, support, management, follow, connection, role, objectivity, expertise, comparison, practicality, project, study, responsibility, subjection, consequence, EUR, speak.

4. Conclusions

In our list, we have used bold style to indicate terms that are often found in referential critical thinking definitions. We see our research sample combines the nature of critical thinking with information, judgment, evaluation, cognition, creativity, analysis, problem-solving ability, active search

and inquiry, resistance to manipulation, truth, reality, argumentation, understanding, research, consequences, decision-making, formulation, facts, attitudes, needs, experience, society, differentiating, reasoning, reflection, intentionality, classification, assumptions, contexts, objectivity, expertise, comparison, responsibility, and consistency. The referential examples of critical thinking definitions mentioned in the introduction prove the validity of these concepts when we consider critical thinking conceptualization.

We state that the referential key term order in our respondents' dictionary is as follows: *knowledge* (7th position, 90 occurrences), *truth* (36th position, 26 times), *decision-making* (49th position, 18 times), *object* (90th position, 10 times), *responsibility* (96th position, 10 times), *action* (3 times), *freedom* (twice),

A rather surprising finding was the high category rank of "laziness", "comfort", "time", "hour", "Hejny's method". We also expected the desired target value of *freedom* would obtain more than two occurrences. Apparently, this category is represented by its opposite "manipulation" (14th position). Also, the category of *action* is probably represented by the category of *activity* (20th position) and by other active words expressing partial mental processes: *evaluate*, *think*, *discuss*, *create*, *analyze*, *search*, *solve*, etc.

Critical thinking definition qualitative analysis was based on the first item of our questionnaire (*What is critical thinking for you?*) answered by 99 teachers. We distinguished four qualities of the teachers' definition:

38% of respondents provided **a sufficient definition** (e.g., "*Obtaining and verifying information from various sources, rational argumentation, listening to a different opinion, considering the context.*", "*Thinking that can objectively evaluate information.*", "*Facts correct evaluation.*")

critical thinking narrow understanding was formulated by 15% of respondents (e.g., "*Reality analysis based on personal experience, various information sources and one's own opinion formation.*", "*Realistic situation evaluation.*", "*Ability to formulate critical/objective attitude to a topic.*"),

40% stated **critical thinking concept broad understanding** (e.g., "*The own opinion based on the experience.*", "*Creating one's own judgment from reports and information. Being able to think creatively and seek solutions from various perspectives.*", "*Ability to adopt an attitude to information.*"),

7% of our respondents mentioned **a completely inadequate definition** (e.g., "*Thinking in a critical state required by the situation*", "*Searching for the truth.*", "*Expressing own opinion on issue*").

Our findings as being presented, of course, have their methodological limits. In addition to the sample size and its sampling, it is our referential critical thinking definition. We realize that other authors might formulate it differently.

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