

IMPORTANCE OF KNOWLEDGE FOR CRITICAL THINKING

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ABSTRACT

Critical thinking can be considered as principled approach to create own attitudes and opinions. It turns out that receiving information passively without their analysis does not allow in the current information environment to create own opinion independent of external influences. It turns out that receiving information passively without their analysis does not allow own opinions to be created independent of external influences in the current information environment. Critical and systems thinking in human life has fundamental importance in creating new values. This paper points to the fact that the person who does not have wide knowledge base, fails in the decision making (inaccuracies) or creates faulty conclusions. A significant influence has critical thinking in relation to tackling the particular situation. In the process of finding the optimal solution is necessary to use analysis skills and their appropriate combination to create new solutions. Significant position in the process of developing knowledge has education. One of the pillars of education is educational system, which must allow students to obtain both general and professional knowledge. A student who obtained wide overview has the potential to make the right decisions, be creative. Creative acts require a creative personality.

KEY WORDS

Critical thinking, knowledge, education

INTRODUCTION

Contemporary society solves number of problems whose common denominators are the information boom causing rapid changes in the society and the chaos in people's thinking. A large amount of information supplying enormous amount of data influence the individuals from various sides. A person as an individual is unable to process and credibly evaluate such a data flow so that he can make his own opinion. Therefore, we let us be influenced by the data already processed, embedded and prepared in a particular context, acting for us as information. This, however, poses a serious problem, which consists in the fact that data prepared in advance are adjusted by a specific template, according to the vision of the commentator, in order to influence our opinion. An individual can create professional opinion given the volume of knowledge in the various scientific disciplines only to a limited set of data. Normally this is an area in which he is an expert. It is necessary to be able to differentiate and to recognize credibility of the data encountered in order to create a professional world outlook. The main role in this process represents critical thinking. It is a tool for assessing the credibility of data and methods of analysis in order to create individual's own opinion (Koukolík, 2010).

Critical thinking becomes a crucial thought process for an individual in a situation when he must evaluate a range of information. From this perspective, we consider this definition of critical thinking as a one of the best: "The assertions are statements that we adopt as a true or as a false. Critical thinking is carefully-considered decision on whether we accept or reject the argument/assertion or waive opinion

about it. Critical thinking also includes a degree of certainty with which we accept or reject the claim /assertion (Koukolik, 2010).

It is inevitable to approach the data with great caution and with certainty that the issue will be discussed from the same perspective during the debate. One problem can be analysed from different perspectives, but then the conclusions drawn in respect of the problem can be greatly different. In assessing the data we need to take into account whether they are facts or opinions. The rule says that when it comes to subjective opinion, it is a matter of taste or preference. The statement is objective and concerns the fact, when it can decide whether the statement is true or false.

The antithesis of fact is "factoid", the data that resemble a fact. Factoid data are intentionally distorted so as to correspond to the political tendencies of certain influential groups in the society. We encounter this issue daily in television, radio and newspapers. Many of them do not distinguish between news and commentary. News should be the facts and nothing but the facts. They should be full, open and free of bias. Commentaries are opinions that are regulated by a specific template. Miserable news casts selects and adjusts the facts and even mingles with their commentaries and presents this mixture to the listeners or the readers. The purpose is bringing to the mind of an individual propagandistically desirable feeling and make the individual think those "facts" are of his own opinion. Here it should be noted that people are equal but their opinions are not. There are opinions highly professional but also false, misleading, stupid and also socially highly dangerous ones.

In this context the use of critical thinking is one of the fundamental procedures for creating own opinions based on facts. Critical thinking skills are biologically conditioned. According to the definition, only people are capable of critical thinking. Critical thinking requires human genetic data and human brain. Critical thinking can be understood as a kind of decision-making. It depends on the control of brain function, memory, and level of education, oriented attention and intelligence. People must learn to think critically. Learning should begin already at preschool age. It should be noted that the critical thinking it is not a state but a process that needs to be preserved and developed. Self-aware people are working on developing of critical thinking throughout the life.

APPLICATION OF THE CRITICAL THINKING

Critical thinking is not only the process of creating own opinions based on own knowledge and information but can be extended to data processing, aimed at creating a decision for solving the actual situation. Particular situation is solved on the basis of information obtained with our senses and on knowledge (experience) gained during our life and also by working and learning in the school (Fig.1) The volume of knowledge is not stable and during person's life is changing. New knowledge is being extended but there is also a process of forgetting. The analysis of the situation is performed on the basis of knowledge and current information obtained through the senses. If the incompleteness of the data is found out during the analysis, the system operator is used and the missing data are added through a source of information. The source of the data can be encyclopaedia, specialized literature, internet,

Success of analysis of the situation and finding a solution is conditioned by procedures of critical thinking, based on a comprehensive and objective assessment of available data and their mutual interaction. In this context, it is necessary to underline the direct correlation between the volume (completeness) and data by creating the objective view, which makes an optimal solution to the situation. The process of creating opinion is based on our knowledge that directly influences the achievement of a solution. The right decision depends on whether we will use important data unloaded for background noise information or data belonging to the group factoids. A person acquires knowledge from the birth. We learn gradually from elementary knowledge, to knowledge enabling scientific discoveries. A brain, on the basis of combining ability, foreseeing ability, and imagination, can create such links, which lead to the creation of opinion, new information and solving situations. To what extent we manage to solve the situation depends just and only on how we evaluate and create links between data. A procedure to do it precisely describes the principle of critical thinking. An essential in the whole system of solution to the situation is the amount of data (knowledge) that allow making the right decision. In this context, some politicians can be mentioned, who are able to serve any function and are confident about their

knowledge to cope with it. Decisions taken by these politicians are far from critical thinking, because they consider only one interest aspect of the issue. The results are far reaching irreversible damages and losses, such as the introduction of inappropriate or discrediting of functioning system –to repeal and to replace it with another that has a worse performance than the previous one.

Knowledge is generally derived from the educational attainment. Where there are some of the data unaware, it is possible to supplement them by additional studies. Based on the analysis (Fig. 1),it seems necessary to supplement the data in the form of acquiring new information. We have the possibility to use the system operator and to acquire the necessary data from the sources of information through one from the senses. But there is a little problem. We must recognize which information we need and know where to find them. A general overview, which helps us to discover what information we need and where to find them, can be applied here.

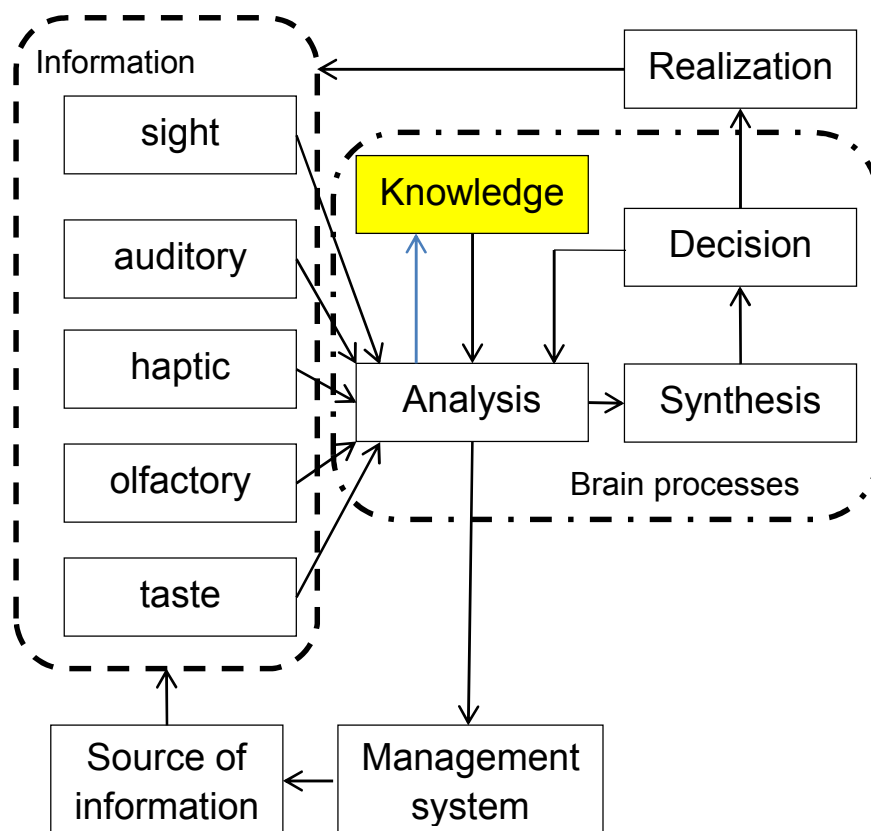


Figure 1: The basic processes of critical thinking

The analysis of data leads to the synthesis and creation of the decision. This decision is again analysed and the consequences of the simulated decisions are again compared with knowledge. It is not possible to strictly insist on the process, because some situations require the cooperation of several people with the support of computer equipment but the essence of the principle is maintained. Thus formed decisions and reassessment is followed by the realization which can be single or gradual. The results of the implementation and information about the activities of the new system are detected by our sensory organs and reassessed (analysis) whether they meet the original intent. Modification of the system can be based on the conclusions of the analysis.

This can be considered a principle of the critical (systemic) thinking that needs to be learnt. People creating new systems and managing groups of other people should master the critical thinking. This group of people has generally a university education, which should be a precondition for a correct application of the process.

CREATION AND DEVELOPMENT OF CRITICAL THINKING AT UNIVERSITIES

The need to teach students to think critically stems from the points given above in the article. To be able to fulfil this requirement, it is necessary for the teacher to master this skill, know the laws and rules. The critical thinking is developed and encouraged in certain subjects such as mathematics and physics. Mathematics and the critical thinking have a number of common principles based on scientific approach to problem solving. Mathematics learns to generalize, to find a solution, but general education is required for critical thinking. Thereto merging methods of analytical thinking, approach to solving the problem with the knowledge of general orientation that allows understanding the broader context. This shows the need to draft study programs so as to contain vocational subjects as well as a general subjects. At present, unfortunately we encounter in connection with the distribution of study at the three-level education with a tendency to educate specialist for a particular sector. In his practice can achieve significant successes, but from the perspective integration into society will have a number of problems with the correct interpretation of information and creating their own attitude towards them. It is usually reflected back on his professional activities.

University students are largely determined by virtual world of Internet. In all subjects of the study program are turning to the internet and through search engines obtain the necessary information. They rely on the fact that all you need to find in the virtual world of the Internet. The truth is that human works analytically and therefore needs a certain amount of data, knowledge which will accompany him in the complex levels abstract thinking. Then insufficient volume of knowledge, conditional on statement "Everything I need I find on the Internet" does not recognize the different aspects of the problem and the relationships between them. They cannot solve a critical topic and its context, clearly and unequivocally express themselves propose new solutions in broad contexts (Krejčí, 2011).

Pedagogues have a great responsibility to teach the students not only the subject but primarily to give them the freedom in their work to experience laurels of victory, but also undergo the consequences of irresponsibility. The difference between the responsibility of the student and the teacher should be noted here. A student can be hardly compelled to be responsible for something about what he cannot decide or choose. Teachers, who have completed a course in critical thinking, influence the overall atmosphere in study groups, which is different compared to those in which critical thinking principles have not been applied. The student who exactly knows the rules, his rights and obligations, himself participates in solving the tasks, learns to find and formulate rules is usually more successful. The role of the teacher is not only in providing expert education but mainly in making an effort to involve students in the process of creation, activities and problem solving. Teaching would therefore not just be a process of transferring the facts, but the process of creating student's own opinions, attitudes. The student should get the interpretation of problem which also includes teacher's opinions and take a stand and have own opinion about the issue of lecturing. It is important that the facts were given complete and free of bias.

TEACHING IN TECHNICAL STUDY PROGRAMMES

The study programs in the higher education such as natural, social, economic and law sciences, services, humanities and arts, education and training are closely connected with the economy. The economy can be considered an integral part of the politics. In this interconnection, comments, opinions, attitudes which reflect the current economic and social situation will appear in the teaching of subjects. Sources of information are news reports in the form of audio-visual or printed version, which includes comments and attitudes of editors. That information contains the subjective opinion or attitude which is generally in line with government policy.

This affects teachers and students in creating their own views on the particular issue. Here starts the role of the critical thinking, which is based on wide general knowledge. In this group would be required to teach students to have critical attitude to information obtained from the media and to differentiate facts, annotated information and shared data.

On the contrary, students of technical specialization, information technology, healthcare, technology, manufacturing and communications, in their studies deal with the issues which are determined by natural laws, theorems and rules. They represent a certain amount of permanently valid data which cannot be misrepresented but only commented. But on the other side, these study programs lack representation of social science, philosophical, economic, legal subjects that complement the general knowledge required for critical thinking.

CONCLUSION

The knowledge of critically-thinking people is as a rule extensive, interdisciplinary and open-minded. Critically thinking individual is usually rational. He knows that in the view of complexity of the world rationality is limited and knowledge is incomplete and open. Cognition represents a lifelong process. Original sources of information are used, not the secondary ones. Firstly, the facts are determined and afterwards they are named. Also the accurate language is used. The mental strategy of critically thinking people is open. They learn long how to examine the phenomena without anger and passion. Of course, critical thinking is hard work which means for people a lifetime commitment. From this perspective, for teaching at the university there are missing elements that would make it possible to understand critical thinking

as a base of the system view on the situations with which future graduate will meet. In this context it should be noted that critical thinking is a process, a procedure to access the information that students need to learn. If the young generation manages to apply the methods of critical thinking in the future the status of teachers during their education will be indisputable. If the teacher has to teach this skill, he must master it firstly himself. He must be aware of the fundamental principles which are desirable to incorporate into the regular teaching.

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