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## **Formation of a Critical Attitude to Information in University Students Through a Social Media Project Based on the Wiki Technology**

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*In recent years, an issue of formation of the so-called critical thinking in the youth has become very popular in the educational environment. Not only students of colleges and universities study it, but also students from high, middle and even elementary schools. More than that, in the scientific community there is still no common understanding of what critical thinking actually is – this is a special type of consciousness, an intellectual ability and a special skill.*

*This article attempts to determine the underlying semantic meaning of the term “critical thinking” and its adequacy in relation to the youth audience. In the work with students and schoolchildren the author suggests using the concept of “critical attitude to information” that is a basic level of critical thinking. This article describes a method of creating a networking, social project based on wiki-technologies as one of the effective means of forming the students’ critical attitude to information.*

*Keywords: critical thinking, critical attitude to information, wiki*

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### **Introduction**

In recent decades, domestic pedagogy has paid serious attention to the development of students’ critical thinking. Only in the period of 2000-2005 dozens of articles were published and at least 12 theses on the subject were defended (Fedorov, 2007, pp.610-615). S.I. Zair-Beck notes that despite the fact that “the term “critical thinking” has been known from the works of such famous psychologists as J. Piaget, J. Bruner, L.S. Vygotskiy for a long time, it has been relatively recently that Russian teachers-practitioners started to use

this concept in the professional language” (Zair-Beck, 2002, p.13).

The researchers explain the need to form the critical perception of reality in school and college students not as a wide spread of computer technologies, globalization and the advent of the information age that became possible due to the scientific and technological progress, but as a problem of media manipulation that turned as a sad consequence of the scientific and technological development. “The emergence of the global and interactive communication system, an extensive penetration of media into the lives of many strata

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of society create new challenges in education aimed at the development of independent and critical thinking including the ability to analyze and evaluate media information and to confront to its possible manipulative influence” (Muryukina, 2007, pp. 4).

T.F. Noel-Tsigulskaya writes that “the need for critical thinking occurs when there is a need to check the trustworthiness of judgments expressed by people – either by ourselves or others. In other words we are talking about the possibility to be misguided by someone, either consciously or unconsciously ...” (Noel-Tsigulskaya, 2000).

### **The elusive object of study**

The modern pedagogical practice has gained rich tooling for training young people in critical thinking skills. Nowadays, there are famous works by M.V. Klarin, R. Buström, E.A. Khodos and A.V. Butenko, I.O. Zagasheva and S.I. Zair-Bek, etc. Along with the obvious advantages of these developments, their main drawback, in our point of view, lies in the fact that the training of students is limited solely to the formation of communication skills and a simple analysis.

Thus, the students are proposed to master the basic laws of logic, learn to defend their own point of view and find mistakes in the statements of an interlocutor. In one of the similar works high school student’s critical thinking is described as follows: “stable abilities and basic mental operation skills, an ability to see shortcomings of theirs and that of others (in behavior, speech, words, deeds, etc), an ability to detect mistakes faster than others, to logically justify evaluation and self-evaluation, to expertly find arguments for and against; tolerance for a reasonable criticism of oneself, etc.” (Shakirova, 2006, p. 289).

With schoolchildren we find a relatively clear description of the results of the formation of critical thinking; however with students everything is more complicated. According to

Professor Shakirova, the highest manifestation of critical thinking in students means “the existence of integrative thinking skills based on the synthesis of logic, problematic, critical thinking and the ability to use these competencies in practical, professional and social activities” (Shakirova, 2006, p. 289). This statement does not only contradict the logical laws of determining definitions (definition includes the concept itself), but also gives no clarity to the essence of the studied phenomenon. Such terminological ambiguity has led to the necessity to consider the understanding of critical thinking in the works of Russian and Western scholars.

### **Critical thinking in Western literature**

The analysis of studies of Western scholars has shown that there is currently no common understanding about what constitutes critical thinking – this is a special type of consciousness, a certain intellectual ability, natural inclinations, and a special skill, etc. Here are some of the most well known definitions:

- “The ability to think critically ... involves three things: (a) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one’s experiences (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods” (Glaser, 1941, p. 5).
- “Critical thinking is a process, the goal of which is to make reasonable decisions about what to believe and what to do” (Ennis, 1996).
- “However defined, critical thinking refers to a way of reasoning that demands adequate support for one’s beliefs and an unwillingness to be persuaded unless the support is forthcoming” (Tama, 1989).

- “The ability to participate in critical and open evaluation of rules and principles in any area of life” (Scheffler, 1973, p. 62)
- “Thinking that devotes itself to the improvement of thinking” (Lipman, 1984, p. 51).
- “skillful, responsible thinking that is conducive to good judgment because it is sensitive to context, relies on criteria, and is self-correcting” (Lipman, 1995, p. 116).
- “Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking” (Paul, 2008).
- The development of intellectual traits, or characteristics of mind which are both necessary for the development of critical thinking (e.g. intellectual perseverance) and need to be developed through critical thinking (e.g. intellectual autonomy). These guard against the development of sophistic or manipulative thinking.
- Knowledge of the problems of thinking, or natural tendencies, such as egocentrism and sociocentrism, which cause deep and systemic problems in human life.

### **Critical thinking in Russian literature**

The detailed analysis of foreign literature is presented, for example, in Rush Cosgrove’s works (Cosgrove, 2009, pp. 17-22), Paul Everett Thomas (Thomas, 1999, pp.11-17), etc.

Internal debate in the field of critical thinking often centers on the disagreements between theoreticians rather than on their agreement, obscuring the core common ground which exists (Hale, 2008). Hale argues that each theoretician may emphasize different aspects of critical thinking, but virtually all agree that it entails analysis and evaluation with a view towards improvement, that it includes the development of intellectual traits, and that it should be applied to one’s own thinking, the thinking of others, and thinking within subject disciplines.

According to the literature Cosgrove divides critical thinking into broad categories (Cosgrove, 2009, p. 21):

- Intellectual analysis, ability to divide important intellectual constructs into constituent parts.
- Intellectual evaluation, ability to evaluate intellectual constructs.
- Intellectual improvement, the ability to correct weaknesses and improve strengths identified through analysis and evaluation.

As it was noted earlier, critical thinking has come under close scrutiny of Russian researchers recently but has already provoked a wave of publications and scientific works on this topic. According to M.V. Klarin, the modern understanding of critical thinking goes beyond the standard set of knowledge-abilities-skills, which is so customary for domestic pedagogy and relates more to the personality: “critical thinking is a rational, reflective thinking that is aimed at determining of what to believe or what action to take. With this understanding, critical thinking includes both the abilities (skills) and predisposition (attitude)” (Klarin, 1994).

E.V. Volkov defines the concept of critical thinking as thinking that differs by “reasonableness and purposefulness – such kind of thinking that is used in solving problems, drawing conclusions, probabilistic assessment and decision making” (Volkov, 2004, p.5).

“*Critical thinking* requires skills of reflection concerning one’s own mental activity, the ability to work with concepts, judgments, conclusions, questions, the development of capacity for analytical activity, as well as for evaluation of similar abilities of other people. In general, critical thinking is characteristic for a practical

orientation. For this reason, it can be interpreted as a form of practical logic examined inside and depending on the context of the arguments and individual characteristics of the judging person” (Sorina, 2003).

As in the case of foreign researchers, the Russian authors also make different interpretations of the concept of “critical thinking”. More detailed reviews on definitions are presented, for example, in the thesis by O.V. Andronova (Andronova, 2010), in a tutorial by E.V. Muryukina and I.V. Chelysheva (Muryukina et al., 2007), in the monograph by A.V. Fedorov (Fedorov, 2007), etc.

It is important to mention that both Western and Russian literature quite often demonstrate a certain “overload” of the term, and as a result the concept becomes purely theoretical and detached from reality. Thus, for example, the U.S. portal dedicated to critical thinking identifies 35 aspects of critical consciousness, according to which a critically thinking person appears as a kind of ideal thinker able to carry out interdisciplinary relations, explain the meaning of words, evaluate the reliability of information sources, generate solutions, etc. (FCT, 2009). M. Lipman describing the distinctive features of critical thinking highlights: the understanding of principles and mechanisms, the construction of a hypothesis, the formulation of judgments based on the criteria, the logical formulation of conclusions, etc. (Lipman, 1988, pp.38-43). Moreover, if we turn to psychology whose object of study is thinking itself, we will find that its purposeful development goes beyond the simple exercises or training sessions offered by the modern pedagogical practice.

### **Thinking formation basics**

A famous Soviet psychologist A.N. Leontiev defined thinking as “a process of reflection of objective reality, constituting a higher

level of human cognition. Thinking provides knowledge of essential features, connections and relationships of objective reality; it carries out the transfer “from the phenomenon to the entity” in the process of cognition <...> Marxism considers thinking as a product of the historical development of the social practice, as a particular theoretical form of human activity that is considered as a derivative of the practical activity. Even at that stage of the development when thinking assumes a relative independence, the practice remains its basis and a criterion of its genuineness” (Reader in Psychology, 1982).

According to Marxism, the emergence and development of thinking in humans is related directly to the empirical realization of the outside world, to the obtainment of personal experience. Leontyev notes that “the loss of the internal theoretical activity of the direct and continuous contact with material objects leads to the fact that it can escape from reality and create false, distorted ideas about it”. Further Leontyev makes an important statement: “In the same way as the practical activity, the internal, intellectual activity meets these or those needs and motivations and, thus, experience the regulative effect of emotions” [ib.]

This statement leads us to a thought that although the daily human activity is regulated by logical and other kinds of thinking, the logic is still not a dominant factor in the situation of a choice between the “regular” activity and that emotionally pleasant. The proof of this assertion may be, for example, an addiction to tobacco, alcohol or other psychoactive substances: although a person logically understands that he damages himself by taking these poisons, in practice he does not follow this understanding, since he aspires to enjoy it. Therefore, if we want, for example, to teach school children or university students to be able to see, as Shakirova says, “their and others’ shortcomings in behavior,

speech, words or deeds” it is not enough to teach them the laws of logic and clear reasoning of their own opinion.

### **The critical attitude to information as a part of critical thinking**

In the issue of formation of critical thinking a well-known theorist and practitioner D. Halpern notes that the term born in cognitive psychology was chosen not quite properly. Let us make a simple linguistic analysis reviewing the meanings of two of its constituent words. Criticism in one of the basic definitions is “a research, scientific test of trustworthiness, genuineness of something (e.g. criticism of a text, criticism of historical sources)” (New Encyclopedia, 2007). If we augment this definition with the abovementioned statement made by Leontyev concerning thinking, then **critical thinking is an intellectual process that allows to get an objective picture of the world based on scientific analysis and verification of the empirical information obtained.** Can we say then that this type of intellectual activity is available to schoolchildren of elementary, secondary or even high schools where critical thinking is being actively promoted now? We tend to think that this description is more appropriate for the scientific mind, thinking of scientists, as seen by Karl Popper.

In the scientific literature we can also find such, in terms of meaning, “lightweight” terms as “criticality of thinking”, “critical style of thinking” and “critical perception of information”. We believe the concept of **“critical attitude to information”** would be more suitable for the youth audience (pupils and students). It can be defined as **a study of any information coming from the outside for their authoritativeness, consistency and ethical correctness.** Its essence is that the subject, when faced with unfamiliar data, performs three successive steps: it

determines the “authoritativeness” of the source of information (according to the developed criteria of authoritativeness); analyzes the “body” of the information message (information may be factual, evaluative, normative, etc.); defines an “action program” inherent in the text (what actions this information provokes and how these activities relate to the ethical standards).

A similar approach is suggested by V.N. Bryushinkin in his work “Critical thinking and reasoning” in 2003: “*Critical thinking* is a sequence of mental actions aimed at testing statements or systems of statements in order to clarify their inconsistency to the accepted facts, norms or values. ... There are levels of critical thinking, each of which has its own form of argumentation, is characterized by different correlations of logical and cognitive components: 1) the empirical level – a critical test of facts 2) the theoretical level – a critical test of theories and 3) the meta-theoretical level – a critical test of rules and values” (Bryushinkin, 2003, p.30).

### **Network communities as a means of forming critical attitude to information**

According to the studies (Chudinova et al., 2004, pp.12-13), audio-visual media have become one of the major sources of information for the youth. The Internet, television, radio have a direct impact on the minds and thinking of today’s students. On the other hand, it is electronic information systems that of today are increasingly used in the formation of information literacy of students and the development of critical thinking. Network communities created in the Internet are now of particular importance. “The medium of network societies is filled with objects, agents and situations that help us to think in new ways and cultivate tolerance, critical and ecological thinking” (Patarkin, 2007, p.6).

Analyzing electronic information sources for their authoritativeness, content and an included action program, students learn a critical approach to new facts and learn to objectively perceive the data. The most important component in this analysis is the determination of “messages” or “motivations” inherent in different types of text, since ultimately a critical attitude to information is meant to protect a person from a deviant behavior that, as it is known, is programmed into us in the process of communication and accepting certain asocial values. M.I. Mahmutov explains the understanding of critical thinking as a person’s ability that helps him to see the discrepancy between a statement (thought) or behavior of another person and a popular belief or behavior or their own ideas about them; to realize the truth or falsity of a theory, a thesis, the inconsistency of a statement and to respond to them; to be able to separate false and wrong from true and right (Makhmutov, 2001, p.91).

Ideally, a person with a formed code of ethics already has the necessary level of critical perception of reality, since such a person will refer any new data to his system of values in life.

Thus, we set a task to find a technique that would facilitate the formation of ethical behavior of students as a basis for their critical attitude to information. Another important condition is that the technique is supposed to involve collective work, since it is always easier to change directions and to adopt new rules of action in the community. The third important condition is that the technique should not be limited by time and space, since the process of acceptance of certain ethical standards is associated with reflection and, therefore, proceeds spontaneously, but not in the specified educational framework.

All these conditions are met by the wiki-systems (WikiWiki). “A radical model of a collective hypertext is implemented in the wiki,

when the ability to create and edit any record is available for every member of the network community. This difference makes wiki the most promising means for collective hypertext writing, a modern electronic board that can be used for writing by an entire group” (Patarkin, 2009, pp.48-50).

### **A network social project “The reasonable choice”**

The experimental work was carried out on the platform of the open Internet system Wikia (ru.wikia.com) where the participants of the experiment (the 4<sup>th</sup> year students-teachers of the Institute of Pedagogy, Psychology and Sociology of Siberian Federal University) developed a social educational project “The reasonable choice” (ru.razum3000.wikia.com). Its meaning was that the students searched, co-edited and published information on the four negative factors that violate conventional ethical norms and have a detrimental impact on human life: gambling, drug use, impurity in relationships and violence towards others.

The task assigned to students involved a search of literary materials (life stories, parables, songs, etc.) dedicated, on the one hand, to the devastating effect of bad habits mentioned above and, on the other hand, describing the positive sides of life based on the principles of purity, truthfulness, self-restraint and compassion. The basis of literary selections included the parable of two wolves – black and white – that represent good and evil in a man. All collected fiction units were sorted into appropriate categories, symbolically personified by various characters: “Friends of the Black wolf” (“The Golden calf” – gambling, “The Trojan horse” – intoxication, “The Filthy pig” – impurity in relationships, “The Cerberus” – violence to others) and “Friends of the White wolf” (“The Swan” – purity, “The Dolphin” – the truth, “The Turtle” – self-

restraint, “The Unicorn” – mercy). The students have provided every story with links to media materials, revealing the problem more fully, for example, articles and videos about the danger of smoking, a film about the importance of relationships, etc.

### **The results of the experiment**

In the course of the project, students quickly mastered the first two components of a critical attitude to information. They learned to distinguish facts from opinion, identified the main criteria for authoritativeness of a source of information, such as *a scientific status, a social status and recognition by society*. However, the most important thing is that having the goal to help others they were constantly reflecting on the importance of ethical perception of reality and, thus, came close to the third essential component – an ethical filter that, as Klarin called it, helps to choose “what to believe or what actions to take”. As shown by the reflective essays written by the participants of the experiment, upon the end of the project they themselves became thoughtful about revising their life values and attitudes. “The collective and co-operative activity of many agents who are ready to criticize and modify hypotheses plays a crucial role in seeking errors, hypothesis testing and falsification of theories. We can tell students about what critical thinking is,

but more than that we can submerge them in the environment where critical discussion is mandatory” (Patarkin, 2007, p.6).

### **Conclusions**

Thus, a critical attitude to information, the formation of which is available to this or that degree on all levels of education, is understood as an initial stage in the development of critical thinking. In the world of media manipulation the critical reflection of the information received from the media, advertising, informal environment can protect young people from their negative influence. As one way of forming a critical attitude to information we chose the method of network educational projects in which students work together to create the electronic media base “The reasonable choice” in the vast web-system Wikia for the prevention of asocial behavior. In the process of searching, editing and publishing of necessary materials the participants of the project learn to explore the sources of information, analyze information messages by themselves and compare the “Action Programme” inherent in the information to their own code of ethics. An important advantage of this method is a possibility for a constant replenishment of the media database “The reasonable choice” and participation of any number of people in the project from all corners of the globe.

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V.P. Chudinova, E.I. Golubeva, A.I. Mikhailova etc. *The Children and libraries in a changing world*, M.: School library, 2004. 336 p. In Russian.

## **Формирование у студентов вуза критического отношения к информации при помощи социального медиа-проекта на базе вики-технологий**

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*В последние годы очень популярной в педагогической среде стала тема формирования у молодёжи критического мышления. Ему обучают не только студентов техникумов и вузов, но также учащихся старшей, средней и даже начальной школы. При этом в научной среде до сих пор нет единого понимания относительно того, что представляет собой критическое мышление – это и особый тип сознания, и интеллектуальная способность, и специальный навык.*

*В данной статье предпринята попытка определить основную смысловую нагрузку термина «критическое мышление» и его адекватность по отношению к молодёжной аудитории. Для работы со студентами и школьниками автор предлагает использовать понятие «критическое отношение к информации», которое выступает базовым уровнем критического мышления. В статье описан метод создания сетевого социального проекта на основе вики-технологий как одно из эффективных средств формирования у студентов критического отношения к информации.*

*Ключевые слова: критическое мышление; критическое отношение к информации; вики.*

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