SOCIO-COGNITIVE CONFLICT AS AN EDUCATIONAL FACTOR IN ACQUIRING NEW KNOWLEDGE AND SOCIAL REPRESENTATIONS: PUBLIC HEALTH STUDY CASE

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Abstract. *This article is aimed to analyse socio-cognitive conflict as an educational factor in the context of learning and education. For a long time, socio-cognitive conflict had been recognised as a negative factor in a learning or study process. Actually, a positive attitude toward the phenomenon was formed as late as in recent decades – thenceforth, socio-cognitive conflict is claimed to be a positive phenomenon provided that a teacher is able to and knows how to control it, so that to make it a learning incentive, an epistemological source of new knowledge and social representations. The analysis of socio-cognitive conflict and a study of students' and teachers' attitudes might help to provide a more comprehensive answer to the following problematic questions: how to perceive and explain the idea of socio-cognitive conflict, its educational importance in the context of learning and education? What are the conditions for a positive solution of socio-cognitive conflict? What is the role of socio-cognitive conflict in a learning or study process? Thus, a goal of the article is to reveal the essence of socio-cognitive conflict and aspects of control thereof in the learning situation from the point of view of students and teachers. The article consists of two parts: the first part addresses a theoretical discourse of the concept of socio-cognitive conflict, and the second part is dedicated to empirical research, i.e., study of an attitude of teachers and students toward the socio-cognitive conflict as a source of new knowledge and social representations.*
Keywords: *socio-cognitive conflict, cognitive conflict, adult learning, social interaction.*

Introduction

A person gets involved with socio-cognitive conflict (hereafter – SCC) not only during a learning or studying process, but also in many real-life situations where his/her ideas, knowledge, social representations, attitudes, beliefs, etc. come up against any new overwhelming or contradictory information,

completely different knowledge, attitudes, beliefs, etc. This is known as the SCC situation.

However, not only *socio-cognitive* conflict may develop in the process of learning and cognition, but a *cognitive* one, too. This is not the same thing since the SCC is destabilisation of a learning process that develops in the course of a cognitive process through the interaction with others due to different social representations, attitudes to a fact, phenomenon, subject, information, knowledge, and other types of confrontation (Sacco et al., 2008, 2). The SCC may serve as an educating factor if it allows a learner to appreciate and accept points of view of other people and, at the same time, to change, enrich his/her own social representations of facts, phenomena, subjects and, thus, acquire new knowledge, integrate it into the existing system of knowledge and representations, find a solution to a learning issue (Darnon et al., 2007, 231). Whereas, *cognitive conflict* is destabilisation of a learning process that arises from a person's ignorance and inability to act (Jatkauskienė et al., 2015).

Learning within a group or with a group is a perfect environment for the development of SCC, and, hence, for the emergence, and formation of new knowledge, variation of initial representations. There is perhaps no group of learners or teachers in which all members' attitudes, aspirations, ambitions, certain initial representations of subjects or phenomena, or knowledge would be in complete accord. Such difference often causes conflicts among members of a group and/or between members and a teacher and, consequently, various learning problems (affective, social, motivational, etc.), tension, anxiety, and fear.

In Lithuania, no scientific publications on the SCC in the context of student learning and teachers' didactic activities were found. Some aspects of this scientific problem in the context of adult education and support were covered in previous studies of scholars from Klaipėda University (Jatkauskienė et al., 2015; Nugaras, 2017). There is, nonetheless, a lack of more detailed academic discussions on the SCC, as well as empirical studies in this area. The situation is somewhat different abroad, though, the number of previous empirical studies on this topic is quite small. The reason for this is probably that most researchers are confined by the following challenges of the SCC analysis: a) complexity of teaching activities and learning situations; b) a field of research which highlights personal or professional identity, personal interest, stimulus, competence of teachers and students, interpersonal relationships (not only positive), conflicts, other moral issues that have a negative impact on researchers' motivation in choosing this topic; c) lack of previous studies in the area of social representations of teachers and students; and d) lack of experience in studying the SCC. As a result, today we still have a shortage of scholarly works on the emergence of conditions for and the solution of the SCC in the context of social

interaction as a part of a learning and teaching process. It should be underlined that a deeper analysis of the SCC might not only reveal the concept of SCC, its expression, essence, and role in the context of learning/study – it might also disclose learning peculiarities and the role of teachers in providing support or in analyzing their performance in the context of the SCC.

The article presents key results of empirical research. *Hypothesis of the research*: SCC in the context of learning/study might become an educational factor in acquisition of new knowledge, in constructing new or reconstructing existing social representations, provided that students and teachers understand the idea of SCC and conditions for a positive solution of SCC are created. The following *problematic question* has been construed to verify the hypothesis: What is the educating role of the SCC in the context of learning/study for acquiring new knowledge, constructing and reconstructing social representations? Detail questions have been formulated to answer the above problematic question: How to perceive and explain the idea of SCC in the context of learning/study? What are the conditions for a positive solution of SCC in the context of learning/study? What is the role of SCC in a learning or study process?

Goal of the article is to reveal the idea of SCC and an educational effect thereof in the context of learning/study from the point of view of students and teachers.

The work on the article involved: *scientific literature* – to reveal the concept and expression of SCC; *meta-analysis* – to compare findings of previous studies in this area. Empirical data were collected by means of the questionnaire survey.

The research is based on a *socio-constructivism learning model* that is applied in university studies (Joiţa, 2005), J. Pjažė (2011) with the idea that there are two phases of learning: *destabilisation and stabilisation, conceptualization of perturbation information* (Thievenaz, 2017), which is duly justified in explaining the adult learning in the context of social interaction.

Practical relevance of the research is demonstrated by the following findings:
- Teachers and students are found to perceive the idea of SCC quite differently, that may have negative consequences for quality of studies, learning, teachers' performance, and relations among group members. Therefore, it is considered necessary to provide students with additional information about the SCC phenomenon and advantages of it;
- The study shows that most teachers and more than half of students see the role of SCC as an opportunity to acquire new knowledge, representations, to improve their existing knowledge, as a chance to

make classes more interesting, while students' and teachers' activities – more dynamic. This, consequently, allows stating that SCC can be regarded as an educational factor in the context of learning/study and should be plasticised as a didactic method during classes solely with respect to wishes, attitudes, and, perhaps, abilities of teachers;

- In view of the discussion and conclusions of the study, practical recommendations for teachers on the application and control of SCC are hereby provided.

Theoretical Discourse of the Concept and Role of Socio-Cognitive Conflict

The SCC is one of the concepts that allow describing and explaining the conditions of adult learning in the context of social interaction. Scholars of social psychology began to study the SCC in the 1980s of the 20th century; later, it became the subject of interdisciplinary analysis (Johnson et al., 2009). The interdisciplinary analysis of SCC not only allowed defining the concept, but also emphasised its positive influence on social interaction and, especially, on the adult learning process (Sacco et al., 2008).

According to I. Zaharia (2013, 458), SCC can be defined as a whole of heterogeneous responses to the same cognitive problem. For a long time, socio-cognitive conflict had been recognised as a negative factor in a learning or study process. Actually, a positive attitude toward the phenomenon was formed as late as in recent decades – thenceforth, socio-cognitive conflict is claimed to be a positive phenomenon provided that a teacher is able to and knows how to control it, so that SCC becomes a learning incentive, epistemological source of new knowledge and representations for reviving the entire heterogeneous group of learners (Darnon et al., 2007, 228). This statement can be explained as follows: no fact, phenomenon, or reality exists in its pure form or in social emptiness, while cognition thereof is more like a conversation than a representation of reality. Therefore, each of us has an initial representation (image) of a certain fact, phenomenon, or other reality around us that is based on our personal story, experience, education, knowledge, culture, ideology, and other factors. So it can be argued that there is no single pure fact, phenomenon, event, or reality – there can rather be as many as views of separate people. Moreover, a new attitude, information, or knowledge may happen to mismatch existing representation of a person, as a result, may be unacceptable and rejected by the person, i.e. SCC develops. One of the key preconditions is that the SCC should become a source of learning and educational factor in this case, i.e., a sufficient and affective (emotional) security of the learner (Jatkauskienė, 2013). Otherwise, he/she will not be able and/or be reluctant to permanently experience emotional imbalance, in other words, he/she will be no longer interested in the

cognitive process itself. Hence, cognitive problems, that develop in the process of learning and discussion, are not as threatening as affective learning problems. Through the right guidance, a teacher is able to control the SCC and, thus, put the discussion and the SCC on the right track, so that to turn the latter into a source of learning and an educational factor (Butera et al., 2005).

For almost half a century, cognitive conflict and SCC have been addressed and interpreted in many academic works, by identifying various contributing factors and consequences thereof.

Some didactic approaches, which are practiced at a university, are aimed to encourage student discussion or debate in addressing problematic questions. This may be a workshop, problem-based learning, projects, group discussion, etc. Such didactic approaches stimulate interaction, so it can be assumed that students get involved in the SCC process.

Initially, the concept of SCC was based on the attitude of Z. Pjažė (2011) stating that collaboration plays a major role in individual cognitive development. Later on, experimental studies supported this position and allowed the development of a learning model in which social variables become key elements of the cognitive development process (Belbase, 2014). This position is different from the one of Z. Pjažė (2011) arguing that social variables had been regarded as external and/or peripheral elements.

According to J. Pjažė (2011), there are two phases of learning: *destabilisation* and *stabilisation.* Destabilisation occurs due to unawareness, inability to act (cognitive conflict), and can be expressed as "*I do not know what to do.*" In case of SCC, destabilisation arises from the disapproval of other people's opinions, attitudes, etc. and can be expressed as "*I do not agree, oppose ...*" This destabilisation can be associated with affective problems, e.g., "*I am useless, I cannot do it.*" Stabilisation, solution of the SCC occurs through the process of assimilation-accommodation, in which new experience or knowledge is acquired, and the individual expands his/her field of understanding, perception, knowledge, and activities. Differences in the learning student's conceptions, verification of hypotheses and observations, analysis of finding may cause the so-called "cognitive shock," cognitive conflict, and loss of balance (Jatkauskienė et al., 2015). Should the cognitive conflict arise from the interaction with other learners or teachers, it becomes the SCC. Therefore, the mechanism of cognitive conflict is the same as for the SCC. The only difference is that SCC arises from interaction with other people (Daele, 2009).

As soon as a student faces a problem that makes him/her review the pre-formed concepts or representations, he/she is forced to reassess the existing associations, images, relationships, processes, etc., formed on the basis of incorrect data, information, or knowledge. Such a review is the only way to accept new information, construct new knowledge, and adjust concepts.

Therefore, Ž. Pjažė named this mental process as *accommodation*. The teacher, who resorts to the principles of constructivism or socio-constructivism, can make use of cognitive conflict or SCC and involve a learner in the process of reflection, search for solutions and acquisition of new knowledge.

A teacher's performance may be strong or poor in case of SCC, subject to the destabilisation/stabilisation phases. In diagnostics, acknowledgment of knowledge, and practical training, a teacher is quite active, whereas at the stage of growth, knowledge recognition and formalization, the teacher delegates an initiative to learners. It is particularly important to encourage, motivate a learner, to explain a nature of an issue to be resolved, situations to be analyzed (Davis et al., 2011). Knowledge should actually become a tool for a learner to act and better understand the surrounding environment. Therefore, it is very important for a teacher to shape didactic situations that are regarded as a whole of tasks for acquiring new knowledge and competences (Jatkauskienė, 2013). The didactic situations, while being shaped in the didactic process, must meet two basic requirements:

- situations must be as realistic as possible, without averting away from real life;
- situations must be at least partially familiar to the learner so that to make him/her truly interested in the problem-solving process, at the same time, in acquiring new knowledge and competences.

Even if in the absence of adequate student-and-teacher co-operation to stimulate development, acquisition of new knowledge and competencies, the SCC can become a factor in initiating the person's inner dialogue and reflection.

As mentioned above, SCC can be described as a whole of heterogeneous solutions to the same cognitive problem. Individual cognitive restructuring may occur namely because of the divergence of solutions and confrontation. This thesis is based on several basic principles:

- construction of knowledge is of social nature and based on interaction between individuals;
- any type of interaction is not necessarily a source or factor of learning;
- based on the learning perspectives of interactionism and constructivism, which make a theoretical framework of SCC, the occurrence of divergence, a loss of balance between interacting individuals is important. This is the only prerequisite to an individual reflection, rebalancing and changes in representations or knowledge (Schunk, 2011).

In recent decades, the concept of SCC has moved away from Ž. Pjažė's individualistic idea – according to L. Vygotsky (1978), the background of learning is social interaction. The scientist introduced the concept of the "*zone of proximal development.*" W. Doise and G. Mugny (1997, cit. Nugaras, 2017)

carried on Ž. Pjažė's and S. Vygotsky's ideas and complemented them with some new elements: social interaction, where causing the SCC, becomes a source of cognitive development. Social interaction is, therefore, constructive if it creates a confrontation between divergent ideas.

The initial loss of individual balance is claimed to occur in a group of learners, as each learner faces different perspectives (Johnson et al., 2009). The learner, thus, is forced to perceive his/her thoughts, taking into account thoughts and views of other members of the group. The secondary imbalance is of a different nature: once the learner faces thoughts or attitudes of others, he-she is forced to review his/her personal and other peoples' representations so that to construct new knowledge (Johnson et al., 2009). In this perspective, narrative becomes a way to "think about one's thoughts." allowing to understand one's own and others' reasoning (Sacco et al., 2008).

It should be emphasised that the statement "SCC is a source of learning and educational factor" is to be supported by the following arguments (Nugaras, 2017):

- While transforming the actors into opponents, the SCC encourages them to put their attitudes away and try to perceive views, attitudes and opinions of the others. It is not that simple, in particular, given the fact that the knowledge or expertise available to opponents reveals or underlines their professional or personal identity. Therefore, retreat, refusal of one's position is not always benevolent or well-appreciated in case of social interaction;
- In a social interaction, an actor may receive information that might never have been obtained through learning or solving cognitive problems on his/her own. This allows him/her looking up at the cognitive problem encountered from a different angle, finding a different way of problem solving.

Hence, in case of SCC, clothes of the social context are "pulled on" the cognitive conflict. In fact, the SCC solving process should involve the restoration of not just cognitive, but affective and social equilibrium, too, because the SCC can be both individual and interpersonal. Working on the SCC solution through the interaction with other people is an opportunity to use joint efforts and knowledge of SCC participants to create a new cognitive structure.

Empirical Findings: Analysis of Students' and Teachers' Attitudes toward Socio-cognitive Conflict as a Source of New Knowledge and Representations

Research design. In 2017, the Department of Public Health of the Faculty of Health Sciences, Klaipėda University, initiated an exploratory research with

the aim of finding out an attitude of respondents toward the idea of SCC and its educational role in the context of learning/study for acquiring new knowledge, constructing and reconstructing social representations. Quantitative method was chosen for the empirical research. The design of empirical research was developed on the basis of analysis of scientific literature. It consists of several stages: 1) preparation for research; 2) questionnaire survey; 3) analysis of research data; 4) discussion of research findings.

The first stage involved the development of empirical research tool - a questionnaire of closed-ended questions. It was based on scientific literature and implies basic parameters of the SCC. The first part of the questions is devoted to the analysis of demographic data, the second – to respondents' attitudes towards the idea of SCC in the context of learning/study. The third part deals with the analysis of conditions needed for the positive application of the SCC in the context of learning/study, and the fourth part – with the role of the SCC in the context of learning/study. Validity of the questionnaire (internal reliability) was based on the method of expert assessment. Respondents of the survey were provided with the goal of research and general information on filling-in the questionnaire. Name and surname of the respondents were not asked to ensure anonymity. Questionnaire statements and questions were not offensive or degrading a human dignity.

At the second stage, teachers and students of public health study programmes of Klaipėda, Vilnius and Lithuanian universities of health sciences were surveyed. A sample of the questionnaire survey consisted of respondents (178 teachers and 243 students). The survey involved target criterion selection, i.e., sample units were selected from the population under the established criterion (teachers in the first and second cycle programmes of public health studies and students thereof). The selected method was based on the presumption that teachers arrange their didactic activities in such a way to involve students in discussions, problem-based learning situations, case studies, etc., whereby the SCC develops in one way or another. The sampling aimed to ensure that teachers and students participating in the research represented the generality of teachers and students of the first and second cycle programmes of public health studies. When deciding on the sample size, findings were planned to be summarizing for the generality with 5% error, as per calculation recommendations of K. Kardelis (2002). Therefore, it is believed that 178 teachers and 243 students are a sufficient and representative sample for the case study. Females accounted for 68 percent of respondents in the survey. By seniority, university staff who has worked 10-20 years (35%), 20 and more years (31%) was dominant in the study. Average age of students was 21.3 years old.

The data, obtained in the third stage of study, were analyzed using statistical database methods: descriptive statistics, correlation analysis, etc. The collected data was analysed using the statistical analysis software SPSS 17 for social sciences.

This article presents only some of the key findings of empirical research and demonstrates differences in teachers' and students' attitudes, based on the developed detail questions of the survey. In order to address these questions, teachers' and students' data of the questionnaire were analyzed. Correlation between the findings and other studies is presented in the discussion section.

First detail question of research: How to perceive and explain the idea of socio-cognitive conflict in the context of learning/study?

Table 1. **Perception of the idea of socio-cognitive conflict, in percent**

Descriptive statements	Teachers	Students	Chi square criterion (X^2)
SCC is a situation where newly acquired information and knowledge make me question my existing knowledge system, review, adjust it.	58.1%	44.3%	X^2=1.689, df=1, p=0.004
SCC is a situation where newly acquired information and knowledge do not match my existing information, knowledge, or attitudes, I find them unacceptable.	74.2%	65.8%	X^2= 7.866, df=1, p=0.005

Data presented in the table suggests that participants of the study understand the idea of SCC, however, there are statistically significant differences in estimates observed under the Mann-Whitney U test criterion. From the point of view of teachers (74.2%), the idea of the SCC is supported by the fact that a newly received information or knowledge does not match the person's existing information, knowledge, or attitudes, he/she finds them unacceptable. Such an idea of SCC is supported by fewer participating students (65.8%). Further, more teachers (58.1%) rather more students (44.3%) perceive the idea of SCC as a situation where a newly received information or knowledge raises doubt about the existing knowledge system, make them review or adjust it. Thus, teachers are better informed about the idea of SCC. In one case or another, the SCC involves a social interaction process, in which its participants are supposed to have precedent positive cognitive and social skills, other skills of solving the SCC and learning issues. Consequently, the study findings show that the SCC situation emphasises two different ways of reasoning and decision-making: *focusing* and *de-centering* (Darnon et al., 2007). In case of focusing, a person attaches too much importance to the elements which he/she is observing, which he/she is paying attention to; he/she finds it difficult to perceive point of

view of others and rejects it. In case of de-centering, an individual is able to perceive attitudes of others and review his/her existing system of knowledge.

Second detail question of research: What are the conditions for a positive solution of SCC in the context of learning/study?

*Table 2. **Perception of conditions for a positive solution of socio-cognitive conflict in the context of learning/study, in percent***

Descriptive statements	Teachers	Students	Chi square criterion (X^2)
Emotional security in SCC	51.6 %	24.1%	$X^2 = 7.796$, df=1, p=0.005
Consideration of positive verbal and non-verbal communication	60.8%	83.9%	$X^2 = 5.401$, df=1, p=0.020
Consideration of the importance of arguments presented	51,6 %	32.9%	$X^2 = 3.299$ df=1, p=0.069
Acceptance of the other person's opinion, attitude	58.1%	27.8%	$X^2 = 8.784$, df=1, p=0.003
Review of existing associations, representations, communications, processes, etc., formed on the basis of incorrect information	61.3%	45.6%	$X^2 = 2.201$, df=1, p=0.138
Active teacher guidance in discussion	61.9%	70.6%	$X^2 = 7.666$, df=1, p=0.006
SCC is positively addressed where opponents of the discussion have equal social and professional status	58.2%	87.1%	$X^2 = 8.312$, df=1, p=0.004

The Mann-Whitney U test was conducted to identify statistically significant differences (Mann-Whitney U criterion = 596.500, p = 0.000): the internal rating of teachers was higher than the one of students. Hence, teachers have a better understanding of conditions needed for solving a socio-cognitive conflict. Data presented in the table demonstrate that there is a statistically significant difference in the attitudes of teachers and students toward an emotional security in case of SCC (51.6% of teachers, 24.1% of students). More than half (51.6%) of teachers believe that it is important to evaluate the arguments presented, while only 32.9% of students consider it important. Students (83.9%) more than teachers (60.8%) regard a positive verbal and non-verbal communication. Teachers (58.1%) more than students (27.8%) tend to believe that the other person's opinion, attitude is important in case of SCC. According to the teachers (61.3%), a positively solving of SCC should involve a review of existing associations, representations, relationships, processes, etc., formed on the basis of incorrect information. Yet, both groups (61.9 percent of teachers; 70.6 percent of students) believe that a teacher should take an active guidance in discussion in case of SCC. As many as 87.1 percent of students believe that SCC is positively addressed where opponents of the discussion have

equal social and professional status. In other words, they tend to presume that teachers will find a solution to conflict based on their teaching status and available knowledge. This presumption may shape the majority's attitude, approach to the object or phenomenon of interest.

Third detail question of research: What is the role of socio-cognitive conflict in a learning or study process?

Table 3. **Perception of the role of socio-cognitive conflict, in percent**

Descriptive statements	Teachers	Students	Chi square criterion (X^2)
SCC is worrying, stressful to its participants, as it jeopardises a person's competence and authority	10.1%	77.4%	X^2=48.874, df=1, p=0.000
SCC is an opportunity to show one's knowledge, flaunt one's knowledge before other members of the group	12%	90.3%	X^2= 51.957, df=1, p=0.000
SCC is a great opportunity to share knowledge	71.0%	20.3%	X^2= 34.730, df=1, p=0.000
SCC is an opportunity to understand who your friends and "enemies" are	6.9%	54.8%	X^2= 27.591, df=1, p=0.000
SCC is an opportunity to acquire new knowledge, images (representations), improve available knowledge	93.5%	55.7%	X^2= 14.290 df=1, p=0.000
SCC makes classes more interesting, while students' and teachers' activities – more dynamic	74.2%	44.2%	X^2= 7.980, df=1, p=0.005

The Mann-Whitney U test was applied to identify statistically significant differences (Mann-Whitney U = 154.500, p = 0.000): the internal rating of teachers was higher (90.02%) than the one of students (41.96). That means, teachers have a better understanding of the role of SCC. As many as 93.5 percent of teachers and 55.7 percent of students are convinced that SCC provides an opportunity to acquire new knowledge, images (representations), improve their existing knowledge. It is obvious that teachers (74.2%) and students (44.2%) prefer to apply the SCC as an educational factor during classes, since its makes classes more interesting, while students' and teachers' activities – more dynamic. However, quite a great number (77.4 percent) of participating students believe that SCC is worrying, stressful to its participants, as it jeopardises a person's competence and authority. Only 10.1 percent of teachers support this point of view. Teachers are sceptical about the statement that SCC allows to understand who your friends and "enemies" are – only 6.9 percent of all of the teachers who participated in the study, unlike students (54.8%), support this point of view. Obviously, students believe that SCC might be solved only at the level of mutual relations rather than a cognitive problem.

This allows stating that teachers distinguish between socio-cognitive conflict and regular conflict.

Discussion

The findings of the empirical research are supported by insights into previous studies. Analysis of the SCC allows stating that the initial representation of every real event, fact, phenomenon, or subject has two dimensions: *cognitive* (what a person knows, is aware of the fact, event, phenomenon) and *emotional* (what a person feels, how he/she reacts to fact, phenomenon, subject) responds to fact, phenomenon, object) (Darnon et al., 2007). Every fact triggers an action or reaction to it, which is based on the available initial representation of fact or phenomenon. Therefore, some authors believe (Davis et al., 2011; Buchs et al., 2004) that new information, knowledge received by a group of learners:

(a) *may match a person's representation*, support his/her idea, and, at the same time, to expand his/her knowledge, as this enrichment with information, knowledge, and representations is in line with the person's initial representations. This *process of balancing* the new information and the initial representations does not cause any SCC;

(b) *may mismatch a person's representation*, be unacceptable and rejected. This is a state of shock, known as SCC, as a result of a imbalance in a person's initial ideas, representations, attitudes to a fact, subject, or phenomenon based on new information. Imbalance is expressed as destabilisation of thinking, which gives a sense of insecurity (Buchs et al., 2004). So, in this case, the person often takes a closer look at new information to regain the balance as soon as possible. There is an internal dialogue taking place, in which a person receives new information, knowledge and integrates them into his/her system of knowledge and representations, or, after all, rejects it.

Some authors (Darnon et al., 2007) emphasise two different ways of reasoning and decision-making in case of the SCC: *focusing* and *de-centering*. When focusing, an individual attaches too much importance to the elements that he/she is observing, which he/she is paying attention to, he/she finds it difficult to perceive point of view of others. In case of de-centering, an individual is able to perceive attitudes of other people.

Where participants of a discussion focus solely on their own thinking or reasoning patterns and totally ignore other attitudes, problem solving approaches or possibilities, this situation can be considered as *focusing*. Otherwise, if participants of the discussion consider views of others and construct alternative models of problem solving on this basis, *de-centering* can be argued to take place. The de-centering occurs in the light of social representations of the

participants in the discussion. Therefore, most researchers who have dealt with the SCC (Johnson et al., 2009; Sacco et al., 2008) argue that de-centering in SCC is an essential source of adult-learning as the confrontation of opinions and attitudes becomes a driving force for learning.

However, the success of de-centering, and at the same time, of SCC is subject to certain conditions (Butera et al., 2005; Darnon et al., 2008; Darnon et al., 2007; Asterhan et al., 2010; Skoumios, 2008; 2009; Zaharia, 2008; 2013; Cahn, 2011; Galbraith, 2015, et al.):

- De-centering occurs, and SCC is positively addressed where opponents in a discussion have equal social and professional status;
- If people have different status (e.g., a teacher and a student), a person with a lower status has a tendency to keep to his/her opinion, which is based on own reasoning models. Sometimes, he/she may pretend to be in agreement with a higher status opponent, however, does not change his/her own attitude and ways of reasoning. A person with a higher status and in opposition to a person with a lower status feels much more secure in a discussion or debate. The latter, therefore, finds it easier to combine different attitudes, find alternative ways of problem solving, and, at the same time, decentralize opinions of others;
- If people come to an alternative attitude in SCC, participants in the discussion tend to verify whether this attitude belongs to the majority or the minority. If a new alternative comes from a minority, the participants in the discussion will not usually accept it, as such an attitude may be invalid (ineffective) and have no warranty. However, before rejecting the minority's alternative, it is necessary to "use one's brain" and look for sufficient arguments, which did not even come to mind at the beginning of the debate. Such a situation makes one learn, look for information, and deal with cognitive problems in one way or another. It is, however, believed that the majority's opinion, which needs the approval or support of the minority, is not always a learning factor, as it often lacks alternative approaches or related intense cognitive activities;
- So that to make SCC an educational and learning factor, the opposition of opinions and attitudes must be observed to occur solely on a cognitive rather than social level, i.e., the level of mutual relations.

Where adult learners hold discussions and have disagreements in opinions, a competence of the other person is often questioned. In this case, there will be no change in social representations or attitudes, as SCC becomes a purely interpersonal conflict that stresses unhealthy competition or influence. On the contrary, if the disagreements of attitudes occur at the level of ideas and

arguments (cognitive) rather than at the level of interpersonal relations, participants will try to accept different attitudes and integrate them into their own system of representations. Each teacher should have an aim to supervise a discussion where participants can express different views without compromising their competence. The previous studies claim (Belbase, 2014; Berthiaume, 2008) that the SCC solution is possible if participants in the discussion aim to master, learn, understand a subject of concern rather than to attain personal excellence or to demonstrate their knowledge. In the first case, participants of the discussion look focused, motivated, trying to solve the arisen cognitive problem together. In the second case, where participants are just concerned about demonstrating their knowledge to the group, attaining of excellence, other members usually sense and see it very well, so, may ignore the attitude of such persons toward the subject, phenomenon, or fact, and reject it.

Conclusions

Analysis of scientific literature allows stating that socio-cognitive conflict (SCC) in the contest of learning and study means destabilisation of the learning process, which develops in the course of a cognitive process through the interaction with others due of different social representations, attitudes to a fact, phenomenon, subject, information, knowledge, and other types of confrontation.

The mechanisms of SCC and cognitive conflict are identical, however, these phenomena are distinguished in the context of social interaction, which does not always exist in cognitive conflict.

The study suggests that the research hypothesis (socio-cognitive conflict (SCC) in the context of learning/study might become an educational factor in acquisition of new knowledge, in construction of new or reconstruction of existing social representations, provided that students and teachers understand the idea of the SCC and conditions for a positive solution of SCC are created) has been confirmed.

The study found that its participants (teachers and students) understand the idea of SCC, though, there are statistically significant differences in the estimates of teachers and students observed.

Certain conditions are needed to regard SCC as a positive phenomenon:
- *features of social affective interaction*: an emotionally secure and positive (as well as learning) environment for solving the SCC, which is safe from interpersonal stains;
- *symmetry of social relations*, whereby asymmetry thereof (e.g., a different social-occupational status) *hardly ever creates favourable conditions* for SCC solutions, while the SCC does not become an educational and learning factor. This is especially true of hierarchical

relationships, where SCC is resolved solely on the basis of mutual relations, rather than a cognitive problem. Such an SCC decision is inappropriate since it only emphasises, for example, a teacher's status or underlines a connivance of students;

- *intensity of socio-cognitive relations* (opinions of majority-minority) may have a positive impact on learning if account is taken of a positive verbal and nonverbal communication and the weight of the arguments put forward.

The study found that most teachers and more than half of students perceive the role of SCC as an opportunity to acquire new knowledge, images (representations), improve their existing knowledge, as a chance to make classes more interesting, while students' and teachers' activities – more dynamic. This, consequently, allows stating the SCC can be regarded as an educational factor in the context of learning/study.

Adult learning and educational situations are often complex, ambiguous, involve not only socio-cognitive conflict, but also identity of teachers, adult learners, competence, personal motivation, interpersonal relations, existing social representations, etc. It is, therefore, assumed that the above insights under the study presume further empirical narrative studies in this field to disclose the experience of adult education players (teachers, students, adult learners, etc.), their social representations upon coming through a social conflict as an educational and learning factor, in much more detail.

In summarising findings of the study and discussion, the following recommendations can be made:

1. To apply the SCC in the study process, by encouraging students to share their views and by searching a solution to a relevant problem;
2. To assign tasks to students that need the consensus of several possible attitudes;
3. To encourage a controversial approach by proposing group tasks to highlight the coherence and necessity of different attitudes;
4. To avoid interpersonal conflicts by expressing or commenting on the opinion of a speaker, to prevent personal criticism;
5. To encourage students to reason.
6. To avoid unhealthy competition, leadership, as there are neither winners nor losers in the case of SCC, where views, attitudes and ideas are shared. that is the subject of SCC.
7. To avoid negative assessment of other person's competences, whereby is important to present and discuss rules of discussion, to find answer to a problematic question, but not to acknowledge or deny the competence of another person.

8. To focus students on the task, rather than on public demonstration of knowledge, talents or abilities.
9. During the discussion, to try not to compare different competencies and knowledge of students, so as not to jeopardize self-confidence.
10. To encourage de-centering, trying to raise value to the performance of least involved participants.
11. In arranging group activities and handling the same information, to make sure that a less competent student does not get bored. Therefore, groups should engage students with different sources of information available and different competences.
12. To introduce a discussion strategy and its elements (through properly formulated questions, reasoning techniques, attentive listening techniques, etc.) to students; to make sure they have and apply it.
13. To remind students, whenever necessary, of the basic rule: the SCC is a debate on ideas, not individuals or competencies.

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