

# LEARNING FROM CONFLICT IN HIGHER EDUCATION

Eduardo Simões<sup>1</sup>, Patrícia Rosado-Pinto<sup>2</sup>, Filomena Almeida<sup>3</sup>

<sup>1</sup> ISCTE-IUL (PORTUGAL)

<sup>2</sup> Universidade NOVA de Lisboa (PORTUGAL)

<sup>3</sup> ISCTE-IUL (PORTUGAL)

## Abstract

Due to their structural complexity, and their openness to diversity, universities are prone to conflict, and invest an enormous amount of time and energy to reconcile divergent interests. Thus, conflict is an integral part of academic life, including the classroom, although in this latter case, it is seen as an uncomfortable issue. In fact, as teachers rarely assume that do not have control of their classes, as actually happens often, conflict in the classroom is a matter whose discussion tends to be avoided to not harm the personal and organizational image. As a result, teachers have little or no training to deal with these problems. Although students and teachers may differ on the extent and significance of inappropriate behaviors in the classroom, the extant literature on this issue indicates that there is some consensus on the fact that interpersonal conflicts often result from the interaction between students' "uncivilized" acts and teachers' negative approaches. This presentation is focused on the crucial skills to deal constructively with these problematic situations, through two complementary directions. Firstly, we present the foundations of an intervention model for dealing with conflicts among students and between them and the teachers, in order to minimize the negative impact on relationships, and simultaneously take advantage of the learning potential of well managed conflicts, guiding them towards a solution-finding process. Secondly, we discuss the concept of "problem" as a central tool of a pedagogical strategy to stimulate learning from the resolution of didactically relevant cases, which are based on real situations taken from and similar to those that students will encounter in a professional context. These problems are always presented under the format of cognitive conflicts, and embedded in a specific context. Through a sequential approach, dealing with cognitive

conflicts contributes to a meaningful learning, which in turn facilitates the acquisition of knowledge and the discovery of its applicability. A case in the field of management education to illustrate the method is presented and discussed in the framework of Problem-Based Learning (PBL) strategies.

Keywords: Higher education, cognitive conflict, problem based learning.

## 1 DEALING WITH CONFLICT IN HIGHER EDUCATION

This paper deals with the skills to deal with problematic situations. Two different approaches will be used. First, we present a conception of "problem" in the sense of "conflict." We refer to conflicts that emerge in academic context, seeking to contribute for understanding how to minimize the negative impact on relationships among students and between them and teachers, and by capitalizing simultaneously the potential for learning that conflicts well managed enable to reveal and consummate. Specifically, we propose to support and describe some ways of dealing with differences, towards finding solutions. We intend moving from conflicts to problems, and from these to the search for solutions, in short.

At a second moment, we discuss the concept of "problem" as a central tool of an educational strategy aimed at stimulating learning from the resolution of didactically relevant cases, which are based on real situations, and taken from and similar to those that students will encounter in professional life. These problems, always presented in a specific context, contribute to a meaningful learning which facilitates the acquisition of knowledge and the discovery of its applicability.

We understand that the description and discussion of this educational strategy serve both the teachers and the students. In fact, we propose to bypass a technocratic vision of pedagogy which assumes the teacher as "owner" of educational strategies, and students as passive targets the use of those strategies. Refusing to deal with the problems of higher education as an extension of pedagogical issues relating to children and adolescents, and not as a particular case of adult education, we believe that an informed student is a more dynamic player in the learning process.

Today, as never before, the potential for conflict between individuals and groups was as high in organizations. The multiplicity of external pressures added to the decline of traditional hierarchies lead

to more complex organizational structures that tend to breed more frequent clashes about goals and processes. Another clear feature of the organizational changes of recent decades, the increase in demographic and functional diversity, also constitutes a determinant of organizational conflict based on the more or less explicit differences with regard to beliefs and values.

For their structural complexity, but also for their openness to diversity, universities tend to conflict, and there's a notable amount of time and energy invested internally in the reconciliation of divergent interests. The importance of work coordination and supervision based on professional qualifications tend to elicit conditions for organizational decision-making processes typical of a "political arena" (Mintzberg, 1985), i.e., based on continuous and open negotiation of objectives, priorities and scarce resources. On the other hand, current pressures for structural change, including those involving demands for greater economic efficiency and resource optimization, are also changing values and aspirations of the various stakeholders of higher education institutions (West, 2006), and maximizing the potential for conflict situations, thus requiring administrative infrastructure and human skills more capable of incorporating diverse or even opposite interests (Clark, 2004).

## **1.1 Incivility and conflict within and outside the classroom**

If it seems beyond question that conflicts are relevant in general management and functional relations within the faculty and staff, and this is also true in daily academic interaction among students and between students and teachers.

The conflict occurs naturally in the interaction amongst students and is often associated with specific academic experiences. For example, currently, it is almost impossible for any student to follow a degree course without participating almost continuously in working groups. In most cases, these groups are structured in order to meet the requirements of evaluation, by writing essays, researching literature, or analysing cases. Inevitably, the conflict breaks out regularly during the group work. Differences in personal preferences, contrasting styles in work approach or simply content disagreements are always ready to ignite interactions between group members. Thus, conflict is an integral part of academic life in general, including the classroom, in particular, although in the latter case, it seems to be seen as uncomfortable subject. In fact, this is an issue whose discussion tends to be avoided by teachers for fear of harming to personal and organizational image. As a result, teachers have little or no training to deal with these problems. Perhaps this is why the specific literature is scarce and a large part of the existing one takes on a prescriptive vision, proposing strategies for teachers to deal with conflict situations (e.g., Meyers, 2003) and especially recommending the improvement of communication skills for counteracting the supposed teachers' propensity for authoritarianism, which is considered by many as a key determinant of "incivility" of students (Morrissette, 2001). This approach collides largely with popular theories about the cause of this "incivility", which is generally attributed to aspects such as the massive access to university, the decline of university degrees' prestige. Other authors (e.g., Knepp 2012) indicate additional factors: students arrive unprepared to university-level work, they are often in trouble with various life roles which are requested to them and face enormous pressures integrated in large, impersonal classes. Some intuitions of this kind seem to have been getting some empirical support. Some intuitions of this kind seem to have been getting some empirical support. For example, a corporate vision of the university has as its counterpoint the fact that some students perceive themselves and behave like consumers, i.e., they feel that the main purpose of attending higher education is economic, a way to increase their future earning potential. Nordstrom, Bartels, Lynn and Bucy (2009) have shown that in fact this consumerist orientation in students is predictive of disruptive behaviors in classroom.

In an interactionist perspective, we can consider that behavior of students and teachers, as well as certain context characteristics, are the essential elements of the conflict in higher education organizations. The conflict situations mainly occur in the classroom due to challenging exams' content or scoring, to differences in perception of other academic duties. But, above all, displaying disruptive behaviors during the classes tend to become an immediate trigger of conflict. Indeed, there is some consensus on the fact that interpersonal conflicts in the classroom often result from "uncivilized" postures and acts (e.g., Goss, 1999), even though students and teachers may differ on the extent and significance of these behaviors (e.g., Patron & Bisping, 2008).

The first group includes those conflicts arising from the overt hostility of the students (in groups or alone) regarding the teacher and / or the peers, depreciating the content of courses or discussing the rankings in tests, for example. Other conflicts are the result of negligence and carelessness acts of students, such as being late, engage in side conversation with other partners, using mobile phone in the middle of the class or expressing apathy or boredom (Appleby, 1990), as a form of resistance to

teachers' control acts (Kearney & Plax, 1992). However, conflict potential can also be expanded by some behaviors of the teachers. For example, Johnston (2010) suggests that some habits of teachers are particularly irritating to students: being late, extending the class beyond its scheduled end, being clearly unprepared, not grading assignments on time, or neglecting students' e-mail messages.

With regard to this later aspect, online communication between students and teachers, the likelihood of conflict increases due to the very nature of the media. For example, in e-mail communication, *temporal synchrony bias* (Thompson & Nadler, 2002) generates a response requirement on unrealistic deadlines, to which is added the tendency to assume stances of greater roughness compared to face-to-face communication, which becomes critical when it is necessary to discuss differences. In fact, there is a higher propensity for conflict escalation via email than in face to face communication and by telephone (Friedman & Currall, 2003). Hence, the use of email in the student-teacher relation should be reserved primarily for sharing factual information (appointments, schedule changes, requests, etc.) and not to answer complex questions or to discuss differences. In these situations, using the immediate feedback, which is characteristic of face-to-face communication, in contrast to the deferred feedback in email or partially deferred in the chat, is an essential element in preventing the outbreak of confrontation and especially the conflict escalation. In general, clarifying the rules of communication outside the classes, publicizing the students opening hours and clarifying which media are (not) appropriate to treat the several types of issues may prevent some apparently minor, but stressful conflict situations.

## 2 FROM CONFLICTS BETWEEN PEOPLE TO CONFLICTS ABOUT IDEAS

Perceiving conflict as something undesirable, negative, and whose costs should be mitigated contrasts with a more positive conception: the emergence of differences can be constituted as a potential source of discovery and learning.

As the results of research in this field widely suggest, interpersonal conflict may prove to be destructive and harmful, but can also assume healthy and useful ways. A classic taxonomy of interpersonal conflicts (Guetzkow & Gyr, 1954), including those that occur within groups, distinguished, firstly, affective conflicts which concern personal antagonisms, involving negative emotions and strain between people. These type of conflict is usually dysfunctional when it arises in working groups because it remove the attention of tasks, negatively influencing the performance, reduce the quality and acceptance of decisions, well as the overall job satisfaction (e.g., Amason, 1996; Jehn , 1997). A second category refers to *cognitive conflicts*, that is, those in which there is discussion of ideas. Cognitive conflicts can take two forms: if there is disagreement about what one has to do, people are a facing a task conflict; if although the parties (individuals or groups) disagree on the task at hand, or about the goal to be achieved, but they disagree about how to achieve it, they are experiencing a process conflict. In both cases, are in play different ways of interpreting the same information or face different sets of information held by the parties on the items of the conflict.

When the parties acknowledge and emphasize the cognitive nature of the conflict tend to use a of *Problem solving strategy*. Using it, the individual seeks to satisfy both their own interests and those of others. It requires the identification of points of agreement and disagreement and the integration of the perspectives of both parties to achieve a joint solution. It is especially indicated when problems are complex and there is demand for quality of the agreement, and it implies, in practice, that the dispute is seen as a problem to be solved in common by the parties. Put another way, the effective use of this strategy requires that the parties agree that their differences constitute a cognitive conflict, that is, it's about ideas and not about people.

The implementation of this strategy can be seen as the junction of two sub-processes that arise usually mixed: problem solving, proper, and decision making (Weitzman & Weitzman, 2000). The first concerns the search and discussion of alternatives and the second is associated with the choice of the solution and the inherent commitment to action.

Research has been showing since long, that the problem-solving strategy, compared to other forms of intervention, tends to generate more agreements, more satisfaction with the results in the short and long term, and more durable solutions (e.g., Kressel, Frontera Forlenza, Butler, & Fish, 1994; Van Vliert, Euwema, & Huismans, 1995). Of course, if each of the parties has high social motivation, ie, is concerned about your well-being and also with the other, a satisfactory agreement is more likely.

But one of the possible causes of qualitative and functional superiority of the agreements that result from approaching conflict as a problem is this strategy's potential to foster learning. That is, the

dynamic generated by the quest for a solution to a conflict (perceived as a problem) promotes different and unique links between varied information and integrate it more extensively. In groups, functional results of cognitive conflicts arise when individuals analyse, compare and seek to reconcile different perspectives. Such an approach also increases creativity by stimulating divergent thinking, the type of cognitive processing capable of generating many different ideas on a topic, as opposed to convergent thinking, which focuses on the search for a specific response to a single problem. This effect is especially prominent when innovative alternatives are in confrontation (Thompson, 2011).

## 2.1 Agree to disagree: The First Step for Problem Solving

In a way, one can say that the main challenge to effectively manage an affective conflict is being able to turn it into a cognitive conflict, i.e., leading the parties to abandon the focus on personal issues and start a discussion focused on the problems. The moment the parties agree on the cognitive nature of disagreement there's an essential condition to treat it as a problem is taking place. Agreeing to disagree is a first step. But it is far from being the last. Imagine that two groups of students surpassed an affective antagonism stage and now accept dialogue on the issues that separate them in order to treat them as problems. Although important, this single step does not guarantee the richness of the agreement solution in terms of learning. In fact, the search for joint solutions based on an advocacy stance, i.e., defensive positions, and not an open communication process promoting the exchange of ideas (inquiry), this process outcome will be translated into "winners" and "losers" and not into solutions truly assumed by both parties (Garvin & Roberto, 2001).

When we ask ourselves about the origin of differences in any conflict, we find that, ultimately, are cognitive processes that sustain it: the parties have had access to different information about the matter in dispute, selected it and interpreted it differently. The facts obviously correspond to distinct and unique mental representations and, in fact, it is these that are in conflict.

For example, there is clear evidence that the expression of differences stimulates creativity and performance in organizations. If context promotes the free expression of differences, conflict resolution may lead to greater cognitive accuracy in formulating problems and finding solutions (Schulz-Hardt, Mojzisch, & Vogelgesang, 2007).

What accounts for this effect? The answer is twofold: first, experiencing divergences increases the intensity of information processing both at the individual and group level. At the individual level, there is a greater attention-focusing since people tend to allocate their cognitive resources selectively and one of the conditions under which this happens is precisely when there is a perception of inconsistency between their beliefs or opinions and messages of others. This activation effect seems to be mainly in search of additional information not only on the topic of disagreement, but also on the foundations of perspective of the other party (for a review, see Schulz-Hardt et al., 2007). The group-level differences of the expression results in an increase in the intensity of discussion, with much information exchange, which in turn results in better quality of solutions and decisions with greater state reasons (e.g., Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006).

## 2.2 Cognitive Conflict and Learning

The notion of *cognitive conflict* in the conflict management literature refers, as mentioned before, to a divergence of opinions and ideas between two or more parties. But it acquires a different meaning in the fields of cognitive psychology applied to education. In these, since the pioneering work of Posner, Strike, Hewson and Gertzog (1982), it refers to the essential part of an intervention for enhancing learning through "conceptual change". In this educational strategy, it is fundamental the role of cognitive conflict, understood as a process in which an individual's knowledge (concepts and relations between them) on a given topic, including personal beliefs and theories, is confronted with new and contradictory information. It is also noteworthy that other classical theories have considered cognitive conflict in causing cognitive changes. This is the case of cognitive dissonance theory (Festinger, 1957), according to which the perception of incompatibility between two ideas evoked simultaneously (for example, "I smoke, but I have the information that smoking is highly harmful to health") can generate a state of psychological discomfort, "cognitive dissonance", which the individual tends to settle by changing mental representations ("I stop smoking") or rationalizing them ("in fact, research shows that the genetic factor is a determinant, so I can continue smoking because it makes no difference").

It is possible to consider (e.g., Limón, 2001) that the notion of cognitive conflict, viewed as a learning condition, is rooted in classical conception of "equilibration of cognitive structures" (Piaget, 1975), that

required as stage in a process wherein the subject integrates contradictory information with her personal 'theory', modifying it, either partially or completely.

One key assumption of this particular use of cognitive conflict as a teaching/learning strategy is the idea that the previous knowledge of students plays a decisive role in the construction of new knowledge. Cognitive conflict is therefore deliberately inculcated as part of a strategy to modify and reformat the previous knowledge that students have about one particular subject or theme. In addition, it is considered crucial the active involvement of students in the construction of new knowledge and puts into question the conceptions restructuring concepts. Specifically, this strategy requires the following steps:

1. The first step is to lead students to become aware of their current ideas about the phenomena or issue that is in focus.
2. Creation of cognitive conflict: students become aware of diverging perspectives, or even conflicting with their views and experiences in the past.
3. As a group, in structured, but autonomous activity, students discuss the new information with the purpose to build new understanding of the problem or theme concerned.
4. In a period of metacognitive development, students are supported in articulating the elements of that knowledge in order to facilitate their future use and extension to other areas.

The results of using strategies like this seem to indicate that instigating the cognitive conflict inherently encourages critical thinking and enhances mnemonic organization in learning. For example, in a study about learning of financial accounting skills, in which traditional methods ("intellective tasks") and tasks involving cognitive conflict were compared, this latter method led students to make richer elaborations and to draw inferences of greater scope as a result of the effort to settle the issues in dispute (Springer & Borthick, 2007).

In the case of a group (a class, for example), we can speak of social-cognitive conflict to designate the process triggered by this strategy, since it inevitably leads to controversy in the exchange of information among group members. In this case, the quality of the results seems to be affected by the orientation of social relationships. In fact, stimulating or even deliberately launching a cognitive conflict can inadvertently cause affective conflict, but this effect can be mitigated by the quality of collaboration and information exchange (Mooney, Holahan & Amason, 2007), which is associated to more positive outcomes in cognitive terms (e.g., Buchs, Butera, Mugny & Darnon, 2004).

### **3 LEARNING FROM PROBLEMS**

As regards to learning based on examples from real practice and from the resolution of specific problems, it is necessary to differentiate between two types of strategies - first, learning by problem solving (which in literature often is designated "problem-solving learning") and, second, learning by problems, the object of this paper, "Problem-based Learning" (PBL). In the first case, complete and well-structured examples/cases/problems are presented to students, who will settle them (emphasis on solution) in light of what was taught, usually in a particular subject or discipline, relating the solutions found with a specific curriculum content and by evaluating, then the adequacy of the solution found. In contrast, in PBL, learning is related with scenarios or problem situations, for which, as in real life, there is no unique, correct and predetermined solutions, (Whitcombe, 2011). Working in groups, students will be asked to mobilize knowledge in different thematic areas and to choose the best way to address the situation (emphasis on process and learning derived from it).

Developed in its origin at the Faculty of Health Sciences McMaster-Canada, from the mid-twentieth century, PBL is based on an educational approach in which students analyse problems taken from real life, working in group and under the supervision of a teacher, who plays the role of tutor. In the particular case of medicine training, in which the acquisition of a sound scientific basis in different biomedical areas is valued, along with the acquisition of practical oriented professional skills, i.e., clinical, the promotion of learning based on problems was warmly welcomed, especially by people in new schools, who wanted to build curricula tailored to specific professional situations to be experienced by future doctors (Barrows, 1985). Today, and still in the medical field, there are numerous colleges who organized the curriculum around problems (Rosado Pinto, 2008). Other areas of training in higher education, especially in engineering, have opted for the same path (De Graaff & Kolmos, 2003). Apparently, the more profession-oriented the training is, the more *curricula* are oriented for this type of approach.

### 3.1 Learning Dynamics

The dynamics of a PBL session is based on three fundamental pillars. The first one is the presentation of a problem to a group of students who will approach it in a collaborative manner with the assistance of a teacher (tutor). As a first step, the tutor sets the operating rules and presents the "problem" to students. Therefore, this step consists in providing students with an initial information, usually very brief (which can be transmitted orally, through vignettes with written text or electronic form), that the students analyse, without recourse to any support, teacher or bibliographic. Under the support of the tutor, students should frame the issue in its context and try to understand the situation.

The aim is to mobilize the knowledge that the students already have to allow for the confrontation of opinions and knowledge previously acquired and the application to the problem of those knowledge in a process of progressive approximations stimulant learning desirably. During the discussion, students pose different "explanatory hypotheses" that will drive the following work.

In this process, they identify issues that they do not dominate, or that they simply are unaware of, and which must be studied by the entire group or only by some elements, in order to reach a deeper level of understanding of the problem. These issues are transformed into "learning needs".

Responding to learning needs is the primary aim of the next step, called "self-study" (Towle, 1991). This phase requires on the part of the student, a high degree of autonomy and the urge to be involved in a particular activity, such as bibliographic search and the consultation of available in the institution (lectures on the subject, the teacher himself, other teachers experts in the field in question), to answer questions. More than expert in transmission of content, the teacher at this stage helps you find the sources in which students will address identified learning needs

The next step involves the further problem analysis, from application of knowledge acquired during the self-study period. Students verify to what extent they have a deeper and more differentiated view of the problem, and identify the "sources of learning" that they have used, assessing their suitability for the particular problem under consideration. This discussion will unleash the verification of the relevance of the hypotheses, leading to strengthening or refutation of the ideas put forward so far, and the finding of new gaps and the consequent identification of new learning needs. Over the next steps, students repeat the cycle, in a spiral motion, ever closer the resolution of the problem.

The last step of the process involves a synthesis of the information collected and a decision on this information (most important data to value, additional questions to clarify later, but which do not compromise the understanding of the situation analysis) and learned content and as a period for the evaluation of the entire living process (Mitchell, 1988). Students explain their views on what has been learned, and the dynamics of class, the teacher receiving information about their participation in their work.

This sequence is usually designated in medical education literature by "Maastricht seven jump" (Schmidt, 1983), but it is clearly applicable in many other areas. It requires seven steps and is described by Spencer and Jordan (1999, p. 1281) as follows:

- Clarify tasks to be performed and the terms and concepts that students do not master initially;
- Define the problem and decide as a group which events / situations / issues in which clarifications are needed;
- Analyse the problem ("brainstorming");
- Raise possible explanations and establish a work plan;
- Generate and prioritize learning goals;
- Study the issues that were considered learning needs;
- Apply what has been learned to the problem.

### 3.2 PBL: An Illustration

Next, in order to illustrate the PBL strategy, we describe the necessary steps to use a case in the field of Organizational Behavior' teaching.

Step 1 - The starting point is a case, which full version should be in the hand of the tutor. Here is, in summary, the situation: "Richard is responsible for the service department of a large security company that provides equipment and alarm systems for banks, hotels and industry. In order to improve customer satisfaction levels in supporting after-sales, the general direction has appointed Ricardo to

manage a cross-project team, i.e., including members of various departments: sales, systems design specialists, administrative staff and so on. The mission of this team is to improve support solutions and customer service, innovating and proposing solutions, through which the different departments may contribute to improve service quality". The central point of the situation is that "Richard is in trouble with the operation of the team. Technicians do not seem to listen to the advice and suggestions of the sellers. In turn, these are focused on small problems of procedure involving people of the administrative and maintenance areas, who, in turn, see themselves completely misunderstood by everyone. All this jointly results in miscommunication, continuous conflict and almost no productivity". To meet learning needs, students discuss with the tutor the information sources: Where can we go to learn about this? In classes of this course? In a scientific paper? Speaking to an expert? A seminar (in our school, in another school)? Who will study what? Who summarizes the existing papers on these subjects?

Step 2 - self-study. The time devoted to this phase is decided and managed by students, to meet the identified learning needs.

Step 3 – a session on another day of the week. Students make a synthesis of information they collected in the self-study phase and apply what they have learned to the case study. From this application an evaluation of the hypotheses formulated initially emerges: were they relevant? There are other hypotheses to formulate? And the process starts writing everything on the paper board.

New questions lead to new facts. For example: Why do not they find a solution in two months? Fact: Conflicts. Which problems were encountered during the process? Fact: miscommunication and conflict. And there are new hypotheses. For example: "Diversity generates inevitable conflict" or "conflict can be paralyzing".

And the process repeats with the case discussion, the learning needs, the information sources and task allocation.

Step 4 - self-study.

Step 5 - synthesis of all that has been learned and evaluation. Students summarize all they have learned about the case. Following is the evaluation by the group members, of the work processes and performance (peer assessment). The teacher, as a tutor, also evaluates the group performance in collective and individual terms (there should be a specific instrument for this purpose). The acquired knowledge can then be evaluated in a final test, for example. Tutoring (teacher) is also evaluated by the students (there should be a specific instrument for this purpose).

## **4 CONCLUSIONS**

It can be said that the central aspect of PBL is that students progressively build a body of knowledge, within a context. Simultaneously they develop an information gathering and selection strategy to process relevant data in order to address a specific situation. Beyond the acquisition of knowledge in context and reasoning training, which will allow the further application of knowledge acquired, students have the opportunity to develop data searching techniques, individual and group work, as well as autonomy, communication and self-evaluation skills, which are some of the most crucial skills for their future professional life.

From the point of view of learning processes, PBL is based on prior knowledge and skills of students and cognitive procedures that they have already mastered in order to understand and structure the problem posed, as well as to retain the new information (Ausubel, Novak & Hanesian, 1978). It should be emphasized, however, that the existence of relevant and meaningful prior information is not a sufficient condition to unleash an effective learning process. Previous knowledge should be activated by appropriate stimuli. The context in which learning emerges is a necessary stimulus for the activation of this knowledge and a facilitator of establishing a bridge to the new knowledge. The contextualization (creating the closest possible learning scenarios from real situations) will help provide meaning to learning and to facilitate the acquisition and subsequent implementation of the acquired knowledge and skills to other situations. On the other hand, as learning is meaningful because it is activated by an appropriate context, it may be more motivating and hence more enduring because it occurs actively and by the discovery (Bruner, 1998). The acquisition of new information, its storage and its reactivation can be improved during operations of analysis, synthesis and expansion of concepts. PBL allows for knowledge elaboration, to the extent that it stimulates opportunities for discussion, questioning, work with peers, and a critical reflection on the reasoning process. So the

more elaborate and consistent is the structure that integrates the new information more easily it will be reused in new situations, since it create multiple pathways of access to new knowledge (Novak, 2003).

Group work, a key dimension to the educational PBL, allows each element of the group to deal with a great variety of stimuli, to the extent that in it there's an interaction of different skills, knowledge, styles and cultures. On the other hand, the group and cooperative work provide opportunities to experience rules and values, within a social activity full of negotiations and consensus building situations, in which taking into account the point of view of the "other" allows for the construction of their own views (Escudero Muñoz, 2012, Zabalza, 2006).

Learning about the decision-making process also appears to be one of the benefits of PBL. Indeed, each different problem leads to the need to experience diversified strategies for collecting data since there is no "right" and unique way to get information and it is necessary to decide the best way to meet the goals. As in real life, this process is full of uncertainties. The experience during training, situations of discomfort and the obligation to make decisions based on insufficient data sometimes is a powerful form of training for realistic exercise of any profession, i.e., in a human context of uncertainty and incomplete information. In short, students learn to adapt by accepting doubt and uncertainty (Walton & Mathews, 1989) and having to make decisions based on limited and / or often poorly organized information.

Finally, the motivational component of PBL is particularly important in an adult student (Knowles, Holton & Swanson, 2005) who learns best when he/she feels the need and guides his/her learning efforts by tangible goals, by the applicability of the proposed work and by the feedback provided throughout the educational process.

In summary, we suggest that higher education students can face the stage prior to entry into the profession as a relevant and useful time of learning and preparation for their future life. Thus, contacting with complex and conflict situations should be seen as natural, and valuable the learning opportunities that these experiences can trigger. Therefore, we assume that conflict, error, progressive approaches to a problem, advances, retreats, negotiations, and commitments are very powerful training tools.

What is proposed to higher education teachers, on the other hand, is the challenge of using pedagogically conflict situations, turning them into planned and structured learning moments. These are outstanding opportunities in students' training allowing them to acquire or develop a set of essential transversal skills for their future career.

## REFERENCES

- [1] Mintzberg, H. (1985). The Organization as Political Arena. *Journal of Management Studies*, 22(2), 133-154.
- [2] West, P. W. A. (2006). Conflict in Higher Education and its Resolution. *Higher Education Quarterly* 60, pp.187–197.
- [3] Clark, B. R. (2004). *Sustaining Change in Universities*. Oxford: Open University Press.
- [4] Meyers, S. A. (2003). Strategies to Prevent and Reduce Conflict in College Classrooms. *College Teaching*, 51(3), 94–98.
- [5] Morrissette, P.J. (2001). Reducing Incivility in The University/College Classroom. *International Electronic Journal for Leadership in Learning*. University of Calgary Press, 5 (4). Retrieved from <http://www.ucalgary.ca/iejll/morrissette>.
- [6] Knepp, K. A. F. (2012). Understanding Student and Faculty Incivility in Higher Education. *The Journal of Effective Teaching* 12(1), pp.32-45.
- [7] Nordstrom, C. R., Bartels, L. K., & Bucy, J. (2009). Predicting and Curbing Classroom Incivility in Higher Education. *College Student Journal* 43(1), pp.74-85.
- [8] Goss, S. S. (1999). Dealing with Problem Students in the Classroom. In B. Perlman, L. I. McCann, & S. H. McFadden (Eds.), *Lessons learned: Practical advice for the teaching of psychology* (Vol. 1, pp. 209-212). Washington, DC: American Psychological Society.



- [9] Patron, H. & Bisping, T. (2008). Why Students Misbehave in Class: An Empirical Analysis of Classroom Incivilities. *Mountain Plains Journal of Business and Economics, General Research* 9 (2), pp. 61-74.
- [10] Appleby, D. C. (1990). Faculty and student perceptions of irritating behaviors in the college classroom. *Journal of Staff, Program, and Organization Development*, 8, pp. 41-46.
- [11] Kearney, P., & Plax, T. G. (1992). Student resistance to control. In V. P. Richmond, & J. C. McCroskey (Eds.), *Power in the classroom* (pp. 85-100). New Jersey: Lawrence Erlbaum Associates.
- [12] Johnston, K.M. (2010). Teaching Thoughts - Handling Classroom Conflict. Teaching Assistant Program Teaching Thoughts –Michigan State University, (18-21).
- [13] Thompson, L & Nadler, J (2002). Negotiating via Information Technology: Theory and Application. *Journal of Social Issues*, 58(1), pp. 109-124.
- [14] Friedman, R. A. & Currall, S. C. (2003). Conflict Escalation: Dispute Exacerbating Elements of E-Mail Communication. *Human Relations*, 56, pp.1325-1347.
- [15] Weitzman, E. A. & Weitzman, P. F. (2000). Problem Solving and Decision Making in Conflict Resolution. In M. Deutsch & Peter T. Coleman (Eds.), *The Handbook of Conflict Resolution: Theory and Practice*. San Francisco (pp. 185-209). S. Francisco: Jossey-Bass Publishers.
- [16] Guetzkow, H. & Gyr, J. (1954). An Analysis of Conflict in Decision Making Groups. *Human Relations*, 7, pp. 367-381.
- [17] Amason, A. C. (1996). Distinguishing the Effects of Functional and Dysfunctional Conflict on Strategic Decision Making: Resolving a Paradox for Top Management Teams. *Academy of Management Journal*. 39(1), pp.123-14.
- [18] Jehn, K. (1997) .A Qualitative Analysis of Conflict Types and Dimensions in Organizational Groups. *Administrative Science Quarterly*, 42, pp. 530-557.
- [19] Kressel, K., Frontera, E., Forlenza, S., Butler, F., & Fish, L. (1994). The Settlement Orientation Vs. The Problem-Solving Style in Custody Mediation. *Journal of Social Issues*, 50, pp. 67-84.
- [20] van de Vliert, E., Euwema, M. C., & Huismans, S. E. (1995). Managing Conflict With a Subordinate or a Superior: Effectiveness of Conglomerated Behavior. *Journal of Applied Psychology*, 80(2), pp. 271-281.
- [21] Thompson, L. (2014). *Making The Team -5th Ed.*. Upper Saddle River, NJ.: Pearson.
- [22] Garvin, D. A., & Roberto, M. A. (2001). What You Don't Know About Making Decisions. *Harvard Business Review*, 79(8), pp.108-116.
- [23] Schulz-Hardt, S., Mojzisch, A., & Vogelgesang, F. (2007). Dissent as a Facilitator: Individual- and Group-Level Effects on Creativity and Performance. In C. K. W. De Dreu & M. Gelfand (Eds.), *The Psychology of Conflict and Conflict Management in Organizations* (pp. 149-177). Hillsdale, NJ: Erlbaum.
- [24] Schulz-Hardt, S., Brodbeck, F. C., Mojzisch, A., Kerschreiter, R., & Frey, D. (2006). Group Decision Making in Hidden Profile Situations: Dissent as a Facilitator for Decision Quality. *Journal of Personality and Social Psychology*, 78, pp. 655–669.
- [25] Posner, G. J., Strike, K. A., Hewson, P. W. & Gertzog, W. A. (1982). Accommodation of a Scientific Conception: Toward a Theory of Conceptual Change. *Science Education*, 66, 221–227.
- [26] Festinger, L (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- [27] Piaget, J. (1975). *L'équilibration des Structures Cognitives*. Paris: P.U.F.
- [28] Limón, M. (2001). On the Cognitive Conflict as an Instructional Strategy for Conceptual Changes: a Critical Appraisal *Learning and Instruction*, 36 (4–5) (2001), pp. 357–380.
- [29] Springer, C. W., & Borthick, A. (2007). Improving Performance in Accounting: Evidence for Insisting on Cognitive Conflict Tasks. *Issues In Accounting Education*, 22(1), pp.1-19.

- [30] Buchs, C., Butera, F., Mugny, G. & Darnon, C. (2004). Conflict Elaboration and Cognitive Outcomes. *Theory Into Practice*, 43(1), pp. 23-30.
- [31] Whitcombe, S. (2011). The Influence of Pedagogy on Problem-Based Learning Students' Perceptions of Knowledge. *International Journal of Cross-Disciplinary Subjects in Education*, 2(4), pp. 519-527.
- [32] Barrows, H. S. (1985). *How to Design a Problem-Based Curriculum for the Preclinical Years*. New York: Springer Publishing Comp.
- [33] Rosado Pinto, P. (2008). A Formação dos Médicos, Hoje: Desafios e Realidades (Medical Training Today: Challenges and Realities). *Sísifo. Revista de Ciências da Educação*, 05, pp. 81-96, Retrieved from <http://sisifo.fpce.ul.pt>.
- [34] De Graaf, E., & Kolmos, A. (2003). Characteristics of Problem-Based Learning. *International Journal of Engineering Education*, 19 (5), pp. 657-662.
- [35] Towle, A. (1991). *Critical Thinking: the Future of Undergraduate Medical Education*. London: King's Fund Centre.
- [36] Schmidt, H. G. (1983). Problem-Based Learning: Rationale and Description. *Medical Education*, 17, pp.11-16.
- [37] Spencer, J. A., & Jordan, R. K. (1999). Learner Centred Approaches in Medical Education. *British Medical Journal*, 318, pp. 1280-1283.
- [38] Ausubel, D. P., Novak, J. S., & Hanesian, H. (1978). *Educational Psychology: a cognitive view*, 2<sup>nd</sup> Ed. New York: Holt, Rinehart & Wiston.
- [39] Bruner, J. (1976) *The Process of Education* (Rev. Edition). Harvard: Harvard Business Press.
- [40] Novak, J. D. (2003). The Promise of New Ideas and New Technology for Improving Teaching and Learning. *Cell Biology Education*, 2, pp. 122-132.
- [41] Escudero Muñoz, J. (2012). Claros y Oscuros del Espacio Europeo de Educación Superior Como Innovación Educativa. Paper presented to the VII Congresso IberoAmericano de Docência Universitária.
- [42] Zabalza, M. A. (2006). *Uma Nova Didática Para o Ensino Universitário – Respondendo Ao Desafio do Espaço Europeu do Ensino Superior (New Didactics to Teaching in Higher Education – Responding to the Challenge of Higer Education in the European Space)*. Porto: Universidade do Porto.
- [43] Kowles, M.S.; Holton III, E.F., Swanson, R. A. (2005). *The Adult Learner*. San Diego. Elsevier.