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From Constructivism to Dialogism in the Classroom. Theory and Learning Environments

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Abstract

This paper discusses the move from learning theories from the industrial society to learning theories from and for dialogic societies. While in the past intra-psychological elements, such as mental schemata of prior knowledge, were the key to explain learning, today theories point to interaction and dialogue as main means for achieving deep understandings of the curriculum. Concepts arising from psychology and sociology are essential to understand this new conceptualization of learning: dialogic learning, which implies a historico-cultural analysis of mind and the concept of communicative action. This dialogic turn in the explanation of learning has also found its manifestation in classrooms. The Interactive Groups is one learning environment grounded in the theory of dialogic learning which leads to improved academic achievement and coexistence. The article points out some of the dialogic elements of Interactive Groups which explain those results, illustrating how the dialogic construction of knowledge can be favored in classrooms worldwide.

Keywords: interaction, group work, constructivism, dialogic learning, interactive groups.

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The organization of classrooms, since the school became part of educational systems, has assumed important variations according to the evolution of societies and learning theories (Aubert, Flecha, Garcia, Flecha & Racionero, 2008). Taking educational approaches mainly grounded in knowledge produced by psychology, we highlight three schools of thought that have influenced school practices since the second half of the 20th century.

In the first school of thought we find psychological theories that see learning as something that results from and depends on "suitable" and "advanced" models of thinking and behavior, models embodied in the figure of the teacher or specialist. In this perspective, programming of the exposure, relationships, materials, and interactions discourages alternatives of group work or of interaction among peers in the classroom, except in the form of tutoring. In interactions between peers, the more advanced student would serve as a parameter for the less advanced one, and would thus be a source for the other to learn. It is assumed that the most capable will never benefit from the interaction, but indeed would run the risk of regressing (Rosenthal & Zimmerman, 1972). Knowledge, understood as originating from a single stable and authoritative source, passes through the scrutiny of the teacher, a stable agent of authority, to be learned by each student. Also, it is considered that all students should reach the same learning port.

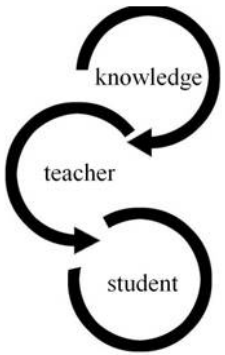

Figure 1. Vertical diagram of knowledge-teacher-student relationship.[1]

Later, in a different direction and concerned with the study and understanding of the processes of signification typical of human cognition, constructivist approaches began to strongly affect the organization of schools and classrooms (Lima, 1990). As a whole, constructivist theories have shown that several sources of knowledge and different experiences are at play in a classroom, and that the teacher must stop assuming the role of a filter of knowledge to be conveyed to the student, or of an organizer of the learning material to be used by the individual student, adopting, instead, the role of organizer of the students' relationship with knowledge and with each other. Starting from very different assumptions about intelligence, and thus producing very dissimilar theories and equally divergent school outcomes, we begin by discussing two constructivist theories, the Piagetian and the Ausubelian, which share a common vision of intelligence as something individual, but which differ from each other in their constitution.

In Piaget's constructivist theory, the structures and functions of human development are universal, occurring in unalterable sequential stages, with individuals varying only in their pace of learning according to their interactions with the physical and social environment (Piaget, 1987; Flavell, 1988). This pace can be modified by interaction among peers whose levels of learning differ from each other (Perret-Clermont, 1980; Perret-Clermont & Schubauer-Leoni, 1981). Also, the starting and ending points, even at different paces, are common to everyone.

In the Ausubelian perspective, individual intelligence is determined by the individual's social background (including his or her cultural, racial and gender origins), which would determine his or her greater or lesser propensity for school learning, since each new lesson learned depends on existing prior knowledge to which the new lesson can be linked (Ausubel, 1968; Ausubel, Novak & Hanesian, 1980). Thus, intelligence is equated with schooled ways of thinking, which posits socially marginalized groups as groups that are less capable (Valencia & Suzuky, 2011). It would be up to the teacher or teachers to prepare the lesson, the training courses, or the instructional material based on two elements: the student's level of prior knowledge and the structure of the contents to be learned, organizing the classroom based on meaningful learning by transmission on behalf of the teacher or by discovery. In the

Ausubelian perspective, it is primarily individual programs based on each student's prior knowledge which are most valued. Group work choices may consider the possibility of joining students who share the same type of origin, experience and levels of ability in the same classroom, or setting up different classrooms according to ability level. Considering that students have unequal starting points, it is expected that the points of arrival will be unequal as well. All research on ability grouping has demonstrated such student grouping to be ineffective in raising the levels of achievement of the less advantaged (INCLUD-ED Consortiu, 2009; Oakes, 1985).

According to the Piagetian and Ausubelian constructivist theories, scientific/academic knowledge synthesizes reality, but its apprehension is determined by the student's interpretative ability. In other words, the student grasps and learns knowledge: a) according to the consecutive and universal stages of development; b) depending on his or her group of origin and intrinsic motivation; c) through the stage at which he or she is, and d) in a manner determined by the starting cognitive point. In this framework, interactions serve to generate cognitive conflict between peers at the same developmental stage or at the border between two stages (Ferreiro, 2001). Such interactions serve for adaptation between peers at similar levels who collaborate with one another, or between peers at unequal levels to motivate the less advanced through a more affective than cognitive effect. Overall, both approaches, illustrate that in the constructivist school of thought of psychology we move from a vertical diagram of the relationship between knowledge, teacher and student, to a triangular diagram of relationships, which has been known as "interactive triangle" (See Figure 2).

More recently, delving deeper into the relationship between knowledge and meaning, principally under the influence of the Soviet school, constructivist approaches of psychology have focused on the study of the relationship between meaning and sense in learning processes, which has led constructivist scholars to point to the need to consider dialogic and communicative perspectives of interactions.

Referring to this process, Zittoun, Mirza & Perret-Clermont (2007) point out that the criticisms of the Piagetian theory about the insufficient attention to the cultural aspects of human development led Piaget

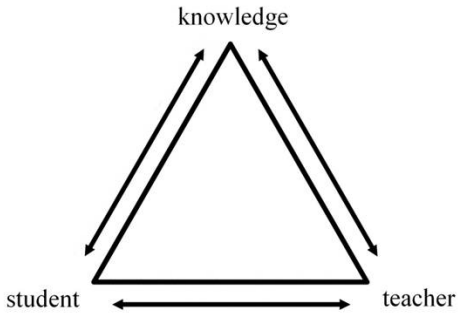

Figure 2. Interactive Triangle of the two-way relationship knowledge-teacher-student.[2]

himself to engage in new studies in different cultures (Piaget, 1966). Clinical trials about conservation (quantity, mass and volume) became a focal point in psychology, to verify the universality of the structures of thought, and were recognized as the most suitable model for the study of intelligence in different cultures. Under theoretical and methodological criticisms (Cole & Scribner, 1974), researchers in the so-called transcultural or intercultural studies area produced a body of knowledge that led to the advancement of understanding about psychological phenomena in relation to cultures which generates specific significations and meanings. According to Zittoun, Mirza, & Perret-Clermont (2007), in reference to the methods of investigation and the results found:

> The decentration treated by intercultural research thus reveals a hitherto invisible dimension: the signification of the task is not given in itself. The person to whom the task is assigned interprets and (re)constructs it, making use of his "personal culture," i.e., the languages, rules and modes of thought which he grew up with and to which he has access (p. 67).

Each person's group of origin and of coexistence are thus considered as sources and archives of knowledge that are deployed in any action of the individuals, which give meaning to the other, to his expectations and

to his actions, thus enabling him to engage in interactions with the objects in specific activities, or to communicate with others if the task requires cooperation in the activity. Unlike Ausubel et. al. (1980), who consider base cultures as subcultures -therefore less complex and causing environments in which less gifted intelligences are produced-, intercultural and transcultural studies have brought fundamental elements of culture as the context for the successful psychological development of individuals.

Returning to the Piagetian perspective, the focus of analysis and understanding lies in the mental structures of the individual, built through constant interactions with the environment – physical and social – during his development. The mind of the child is primary and egocentric and therefore, from this perspective, there is primacy of the individual in relation to social exchanges and to the cultural environment.

In the other position are the sociocultural or historical-cultural approaches, which consider the human mind as social and cultural (Vigotski, Luria & Leontiev, 1988). In this perspective, every act of the child is seen as occurring in an environment built culturally through the history of humanity (Tomasello, 1999). Thus, social interaction is constitutive of human development and of the mental processes of individuals.

Zittoun, Mirza, & Perret-Clermont (2007) organize the productions of sociocultural or cultural historical approaches, which they call post-Piagetian, into four distinct perspectives, as follows: (a) one that focuses on narrations and cultural works (Bruner, 1960, 1983, 1990), (b) one that focuses on activity as a central concept in the analysis of culture and mind (Scribner & Cole 1981; James Wertsch, 1991, 2002; Rogoff, 1990, 1995, 1998, 2003; Scribner, 1984), (c) one that focuses on the semiotic processes (Valsiner, 2000; Abbey, 2006; Lawrence & Valsiner 2003), (d) the one that focuses on dialogic processes, where are grouped the authors dedicated to the analysis of discursive processes and of negotiation of understanding and repositioning in group relations (Pontecorvo, 2004; Clôt, 1999; Rochex,1999; Muller & Perret-Clermont, 1999).

But what are the consequences of these most recent contributions to classroom organization and learning processes in school? How do they

support the social networking that individuals need for their development? In what follows we will answer this question through theories related to the concept of dialogic learning.

Dialogic learning: interaction, intersubjectivity and learning in the information society

In today's context, the production of academic knowledge is intense as information is widely disseminated and incorporated into production systems and social life. The new information and communication technologies generate networks of creation, diffusion and the incorporation of knowledge into production processes in real time (Castells, 1999; Ianni, 2004; Flecha, 2000; Aubert et al, 2008; Racionero et al, 2012). In the Information Society, having access to information and knowledge networks, knowing how to select, among the multitude of accessible elements, analyzing what is found through critical scrutiny in order to make use of it become essential skills for effective functioning in many social spheres. Importantly, the democratization of the Information Society also depends on all students developing these abilities.

In addition, in current societies there is a growing demand for dialogue as a way to negotiate different aspects of life, and as a means to build coexistence in different social spaces. This phenomenon has been described as the "dialogic turn" of societies (Flecha, Gómez & Puigvert, 2001). Violence arises when dialogue is prevented, this augmenting inequalities. Thus, the incorporation of dialogue in the construction of better alternatives in society is a requirement to ensure equal rights and a better life for all. The transformation of school education in the light of dialogic needs and parameters is the subject of the next sections of this article.

The dialogic turn of society has also found expression in learning theories. In this sense, some scholars talk about a dialogic turn of educational psychology (Racionero & Padrós, 2011). This turn implies, on the one hand, placing interaction and dialogue at the center of current explanations of human learning, and design interactive learning environments that respond to how people learn in dialogic societies.

Theoretical ground of dialogic learning environments

An essential view of theories of dialogic teaching and learning is that mind and cognition develops in social interaction. Vygotsky (1996) contributes to the understanding that the mind is formed socially, assuming a movement that is initially interpersonal, and later becomes intrapersonal. The process of development of each individual takes place through his relationships with others in his surroundings, with the more experienced adults in the culture assuming a leading role. Under the influence of Vygotsky, Bruner (2001) defines culture as "a set of tools with techniques and procedures to understand his world and deal with it" (p. 98), or "a way of dealing with human problems: with human transactions of all types represented by symbols" (p. 99). In providing this definition, Bruner can be considered one of the leading theoreticians of the concept of the social mind (Correia, 2003). For him, communication between individuals in a process of interaction mobilizes and produces knowledge, because "by making use of language to achieve their ends, children have more than mastery of a communication code; they negotiate procedures and meanings and when they do this, they are learning the path of culture as well as the path of language" (Alves et. al., 2007, p. 328). Rogoff (1990, 1995, 1998) has been also central in explaining the role of culture in development; for her, individual and culture are seen to be in a state of constant development, dynamically linked and inseparable (Costa & Lira, 2002).

If intersubjectivity is the basis for the construction of subjectivity and intelligence, then, interaction is a factor driving development. But are all types of interactions equally effective in driving learning? What kind of interaction leads to deeper knowledge construction?

Habermas (1987) helps us answer this question. It is in the interaction between different individuals that share unquestionable knowledge which belongs to the life world and is taken for granted how knowledge becomes problematized, enabling individuals to think about and examine it, and then make deliberate choices about its pertinence. Thus, when their basic knowledge is questioned, individuals feel themselves challenged, a process that links knowledge creation and interaction to identity development.

Each individual is constituted life worlds, whose knowledge he constitutes and reproduces, but that is called into question when such knowledge is removed from the general consensus, a situation only generated by the interaction between different individuals or by situations that call what is taken for granted into question. When this occurs, two paths are possible: conflict – if dialogue between the individuals cannot be established because there is no will to reach understanding or communicative consensus – or communicative action, producing new intersubjective knowledge that allows for joint action in the shared world. Mind, knowledge and action in the world are thus permanently constituted in the processes of communicative action (Habermas, 1987).

The deep relation between knowledge, its context of production, and its intended use is emphasized by both Habermas (1987) and Freire (1970, 1997). However, while Habermas is more concerned with the rational use that is made of knowledge and of techniques and technologies, Freire focuses more on the question of purpose of the production. Freire (1970) offers a critical perspective on knowledge to be produced, taught and learned, based on for and against what and who such knowledge is created. Habermas (1987) deposits elements of criticality in the presence of the greatest possible diversity of people upon analyzing the efficacy and correctness of the application of concepts, techniques and technologies to different contexts. The discussion between different individuals, assuming communicative rationality in the process of argumentation permeated by pretension of truth, appropriateness and authenticity is the way to achieve deeper understandings of reality and the result of reaching a state of intersubjectivity.

The concept of intersubjectivity is central to both these theoreticians. Habermas (1987) and Freire (1997) formulated theories that ontologically understood the individual and the system/s as inseparable. This perspective is compatible with psychological theories that consider mind and intelligence as social, understanding the processes of learning and subjectivity as intersubjective. Habermas (1987) expresses this inseparability in the theoretical formulation of the relation between life world and system. Freire (1997) expresses the dialectics between individuals and systems by conceptualizing objectivity and subjectivity

in dialectic relationship, or the link consciousness-world as inseparable.

In Freire (2003), the concept of "unity in diversity" is central and embodies the notion that dialogue and unity among different people, unity in the diversity of their origins and life projects, are necessary to enable individuals to fight for decent living conditions and to respect different ways of being. The opposite is what produces inequalities (Freire, 1970). This analysis shows how society and culture are present in the constitution of identities. Note that Freire (2003) draws attention to the fact that multiculturalism is not a "natural" process, but a product of colonialism, domination, and wars. Hence, to be experienced as a source of knowledge and human enrichment, a political decision must be made about how to achieve coexistence and the protection of those that are different (Mello, 2009a). For Habermas (1987), the coexistence of different cultures, not just side by side but also with one another, requires communication between them. The author claims the need for deliberative democracy to ensure the rights of citizens with different cultural backgrounds to live under the same rights.

The concept of dialogic learning (Flecha, 2000; Aubert et. al., 2008) is strongly underpinned by the aforementioned theories, and joins the most important interactionist and dialogic contributions from psychology, anthropology, sociology, pedagogy, etc to explain how people learn best in current dialogic societies. Dialogic learning takes place when a series of principles, seven, develop in social interaction, namely: egalitarian dialogue, cultural intelligence, transformation, instrumental dimension, creation of meaning, solidarity and equality of differences.

Egalitarian dialogue assumes that the statements and propositions of each participant are considered given the value of their contributions and not depending on their status in relation to age, profession, gender, social class, educational level, etc. This makes possible, for example, that the guide of a non-expert adult becomes acknowledged in the classroom as central to enhance all children's school learning (Tellado & Sava, 2010). Additionally, in environments designed upon the notion of dialogic learning, participants are often allowed to use their cultural intelligence (Flecha, 2000), that is, the set of academic, practical, and communicative abilities, to engage in knowledge construction. But this occurs in learning environments where three conditions are favored and

met: a) interactive self-confidence, b) cultural transfer (of non-academic abilities to academic settings), and c) dialogic creativity (new knowledge resulting from dialogue that capitalizes on everyone's abilities).

Importantly, by sharing different points of view and ways of solving problems through dialogue guided by validity claims, , *transformation* occurs at two levels: intrapsychological and interpsychologial. Intrapsychological because though dialogue existing knowledge gets transformed and expanded. Interpsychological because what is shared mentally is the result of the addition of every person's knowledge in dialogue with the knowledge of the others, which generates a new state of mind. Overall, dialogic learning is aimed at transformation, personal and socio-cultural, and not to adaptation.

Transformation requires emphasis on the *instrumental dimension* of dialogue as a means for knowledge making. Such instrumental dimension refers to those aspects of school knowledge which are required to trespass the doors of socio-economic access to the Information Society (Apple & Beane, 2007). Also, in a society where social change is constant, it is easier to see more processes of loss of meaning (Habermas, 1987). Participation in *dialogic learning* emerges as an important instrument for the *creation of meaning* (Elboj & Puigvert, 2004). Faced with multiple possible choices of how to live, it is difficult to design a single project for all groups or people, and it is difficult for the school to know which values to foster. But usually dominant groups impose their views and discourses, also in schools, and this generates crises of meaning. However, in dialogues where different points of view emerge and are acknowledged on the ground of argumentation, individuals come to know more possibilities and thus choose more freely and critically. Such process creates more opportunities for gaining greater coherence between dreams and actual life. This in turn relates to the principle of *solidarity*. In dialogic learning environments participants share their knowledge for the benefit of all members of the group.

Egalitarian dialogue, cultural intelligence, transformation, the instrumental dimension, creation of meaning and solidarity are also accompanied by the principle of *equality of differences* or, as Freire (2003) posed it, "unity in diversity". This principle breaks with the

inertia that cultural relativism imposes on people from different cultural groups, turning traditions into a mold to which their members must conform (perpetuating not only the relations of power and dominance within their own cultures but also the relations of power of the dominant culture upon the others). Through dialogic learning, each person builds new understandings about life and the world and reflects about his or her culture and that of others, thus gaining greater freedom to choose his way of living and relating to others, as well as creating respect for different modes of living (Giddens, 1995).

The seven principles of dialogic learning are related among them, despite each exists on its own as well. In each, meaning, life experiences, emotion, cognition, culture, and other elements come together, involving different people with whom students interact. This, again, differentiates dialogic learning from prior conceptions of teaching and learning. From the perspective of dialogic learning, the network of interactions and relationships that is formed around each student should be seen as a powerful learning generator of learning, which is no longer stable and merely triangular, as it was conceptualized in the constructivism approach. Students' developmental trajectories are embedded in complex networks that must be understood and taken into account in schools' organization, including that of the classroom, as a space that fosters intersubjectivity. Such constellation of spaces for students' learning and development that dialogic learning environments need to take into account can be represented as follows:

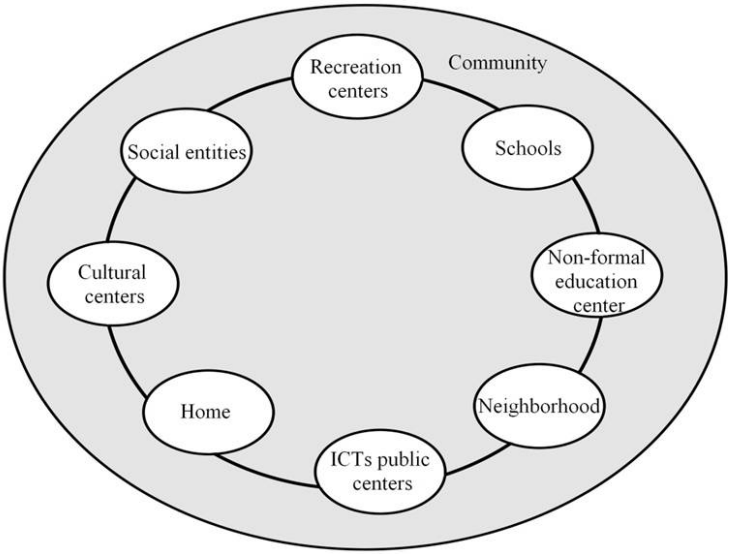

Figure 3. Contexts of interaction, learning and development.[3]

Interactive groups: dialogic classroom organization

Interactive Groups is an inclusive and dialogic type of classroom organization and student grouping (INCLUD-ED Consortium, 2009) that illustrates how the dialogic turn of societies has reached the classroom. When a classroom is organized in interactive groups, teachers create three or four small groups of students depending on the total number of students in the class. The criterion for group composition always is for the maximum heterogeneity in terms of mastery level, ability, culture, race, ethnicity, language, gender, life styles, etc. While meeting this criterion, the grouping is conceptually driven, with teachers making ongoing changes depending on subject areas, lessons within every subject, social relations among students, and suggestions from volunteers. Family and community members participate in the classroom promoting dialogue and solidarity in the

groups with the objective that all students reach the highest learning teachers create three or four small groups of students depending on the total number of students in the class. The criterion for group composition always is for the maximum heterogeneity in terms of mastery level, ability, culture, race, ethnicity, language, gender, life styles, etc. While meeting this criterion, the grouping is conceptually driven, with teachers making ongoing changes depending on subject areas, lessons within every subject, social relations among students, and suggestions from volunteers. Family and community members participate in the classroom promoting dialogue and solidarity in the groups with the objective that all students reach the highest learning objectives. One community volunteer is placed in each group. This allows for the classroom teacher to manage the whole classroom dynamics while the students are working, or she or he can become an extra support in one of the groups. The activities in each group are approximately 20 minutes long, and after that time, each group moves to the next table and works on a different activity with a different adult. In some classrooms, it is the adult who moves rather than the students. The tasks in the groups are short and usually there is a thematic connection between them, with each focused on a different dimension of the lesson topic.

In the groups, students help each other and engage in dialogues to deepen the understanding of the content knowledge they are working on. The teacher is in charge of the classroom management, solves volunteers' and students' questions when necessary, and sometimes provides extra help for struggling students.

Schools involved in the Learning Communities project (Mello, 2009b), a project of educational and social transformation, apply a series of Successful Educational Actions (SEAs), among which we find the Interactive Groups. All these schools have shown to raise the academic achievement of their students as well as to improve social relations organizing the classrooms into interactive groups (INCLUD-ED 2006-2011). There are more than a hundred schools working as Learning Communities in Spain, and there are also schools as learning communities in Brazil and Paraguay. In this article, the organization and learning processes in interactive groups are explored through the case of three Brazilian schools.

Method

Participants

Three municipal primary schools in medium-sized towns in the interior of the state of São Paulo, which had been transformed into Learning Communities, participated in a survey carried out from 2007 to 2009 to determine the impact of the educational project on their practices (Mello, 2009b). The study was conducted with the participation of 34 professionals (teachers, coordinators and principals), 10 volunteers (women of various educational levels, ages and cultural backgrounds), and 50 students (9 and 10-year-old girls and boys from different cultural backgrounds).

Procedure

Based on the communicative methodology of research (Gómez, Puigvert & Flecha, 2011), interviews were held with all the participants individually and in focus groups. The interviews (I) explored the participants' experiences, analyses and points of view regarding the processes and outcomes of learning and interaction in interactive groups. Transcripts of the interviews were coded by school (S1, S2 and S3), by category of the participant (professional – P –, student – s –, or volunteer – v –) and by number of participants (professionals: 1-34; students: 1-50, and volunteers: 1-10). In the two sessions of the focus groups (FG_1 and FG_2), conducted with each category of participants, the focus of the discussion was how interactive groups contribute to learning and to improve the relations of coexistence in the classroom. Finally, the paragraphs of each transcript of the interviews and the focus groups were numbered (§1-98) and, following the communicative methodology, they were assigned to two analytical dimensions: transformative (t.e.) and exclusionary (e.f.).

Results

In terms of simple frequencies, the analysis of all paragraphs (a total of 681, distributed as follows: 250 from students, 348 from professionals and 83 from volunteers) led to the identification of 581 paragraphs about transformative dimensions of learning or living together in interactive groups, while 89 paragraphs indicated exclusionary dimensions.

With respect to the transformative dimensions, four categories emerged: improvement in instrumental learning (s.: 128; p.: 195; v.: 59), improvement in respectful coexistence (s: 91; p:122; v: 14), learning while teaching and teaching while learning (s: 29; p: 2; v: 10), and changes in self-concept (s; 4; p: 0; v: 0). As for the exclusionary dimensions, two themes emerged: insufficient number of volunteers (s: 2; p.: 18; v.:0), and inappropriate behavior of some adolescents in their role of volunteer (s.: 0; p.: 9; v.: 1).

The analysis of the data collected through the discussion groups, led to 791 paragraphs, distributed as follows: 112 from students, 535 from professionals, and 145 from volunteers. In terms of simple frequencies, the analysis of the paragraphs, led to the identification of 663 fragments about transformative dimensions on learning or living together in the classroom, and 128 indicated exclusionary dimensions. With regard to transformative dimensions, the 4 categories that emerged in the interviews were the same as those from the analysis of the interviews: improvement in instrumental learning (s.: 86; p.: 149; v.: 121), improvement in respectful coexistence (s: 24; p: 343 ; v: 21), learning while teaching and teaching while learning (s: 7; p: 16; v: 0), and changes in self-concept (s: 0; p: 0; v: 2). As for the exclusionary dimensions, the same two themes that emerged in the interviews arose here too: insufficient number of volunteers (s: 2; p.: 18; v.:0), and inappropriate behavior of some adolescents in their role of volunteer (s.: 0; p.: 9; v.: 1).

Interactive groups have two main objectives: to accelerate learning and to improve relations of coexistence in the classroom. As the data analyzed shows, both objectives are strongly emphasized by the participants, who added two other benefits related to the guide by a an adult who is more experienced in the culture of reference: the partici-

pants' improved self-concept, and the possibility of teaching and learning at the same time. Exclusionary dimensions had to do with the need for more volunteers to promote supportive interactions in the interactive groups.

To illustrate the qualitative part of the results of the study, in what follows, we highlight a series of excerpts from interviews with different categories of participants regarding the transformative dimensions that interactive groups bring to classroom insteractions. In the following quotation, a teacher highlights how interactive groups enhance learning processes and academic performance and, as a result, ultimately, students' learning is accelerated:

> When I first started working with the interactive group activity, I already felt the difference in the classroom. I could see that the students were faster in performing a given activity. I noticed that the activities proposed through the interactive groups accelerated the students' learning. (S2-I-p13, §21).

The characteristics of interactive groups make possible that students who otherwise would be left behind, in interactive groups engage in the same learning processes as higher achievers do and end up reaching the same curricular objectives. This perception is possible thanks to the support that students receive by peers and volunteers in every group:

> I have students who do not produce in some group or individual activities, but in the interactive group – I don't know if it's because there's someone there that helps a lot – it isn't is a presence of coercion, but a helpful presence, which is there to really help! So their interaction with the group is really cool! (S1-I-p1, §1).

The same teacher completes her statement by pointing out the remarkable increase in the pace of children's learning. In interactive groups children work more and complete learning activities that in a regular classroom usually take the double period of time:

> For example, the activity that I taught, which I knew took half an hour, the children now perform in ten minutes. Sometimes I couldn't believe they were able to do everything. (S1-I-p1, §2)

In addition, in the interactive group, individual learning is seen as a responsibility of the whole group. Therefore, when one student finds some difficulty in understanding the content knowledge, everyone gets committed to help him or her. In this process, teaching and learning take place simultaneously:

> The idea of group work is that the activity has been completed when everyone has succeeded, when everyone has finished it, and not when only one has done so, that's when they begin to understand the mechanism of the interactive group, right? And they begin to succeed in carrying out the activity. That's when they begin to feel capable. And as they increase their pace, they become more and more capable! At this point, they wait the group day eagerly, because they know that, on that day, they will do everything with the others. (S2-I-p4,§7)

As shown in the quotation above, as a student reaches the curricular objectives and is aware of her or his success thanks to the interactive groups, he or she improves his or her academic self-concept, and starts believing that it is possible to do it and to do it successfully with the help of peers and adults. But the gains are for everyone. In interactive groups, everyone benefits from the interaction because learning is intersubjective but also because interactions build upon the existing diversity among all participants. In this regard, the evidence collected shows that the higher the group's internal diversity, the greater and deeper the learning of every individual that is part of it, from both the intellectual and the human and social standpoint. Benefiting from Vygotsky's (1978) theoretical formulation about learning occurring through the mediation of more experienced individuals of the culture, in the Interactive Group, the volunteer himself contributes cultural diversity and instrumental knowledge, and also benefits from the interactions with the students. For example, some volunteers develop more motivation to learn contents of the school curriculum as they later teach that knowledge to the students, despite that is not required from volunteers:

> I relearned what I was forgetting, because you also learn by teaching. I would consult the books in the school's library collection, and whenever there was something I didn't know I would stay there until I learned it so that I could pass it on to the students. (S2-GF1-v1, §3)

The responsibility for learning is shared by everyone in the classroom, but with different roles. It is up to the teacher, the professional with pedagogical knowledge, to assume the commitment of planning the content and activities to be worked on in interactive groups, to explain to the volunteers the activities in the groups, and guide them and solve their questions when it is necessary. The classroom teacher is the one who ensures the correct development of the whole classroom dynamics, encouraging mutual support and respect among the children, youths and/or adults. A fundamental point of which the volunteer takes care of is the way in which the activity is carried out jointly, so that when any student experiences difficulty in solving a given activity, the others also focus on helping him. This encourages role exchanges, in which students can both teach their classmates and learn from them, thereby learning, through egalitarian dialogue, to share efforts and act with solidarity (Elboj et. al., 2001). Children perceive this solidarity in the volunteers, appreciate their unique support, and acknowledge their positive influence in students' learning:

> Each volunteer teaches in a different way, and they all help us to learn things that we often did not know. We like volunteers because they help us carry out the activities and because they want us to be smarter. (S3_I_s35, §2).

Teacher also see as strength for children's learning the fact that volunteers bring to the classroom new abilities, new knowledge, and new role models. The following quotation illustrates how for teachers diversity among adults in interactive groups is a source of instrumental learning:

> I think the interactive group is important for students because it ensures the presence of other people in the classroom. The presence of more people allows for a certain degree of diversity in the classroom. The idea that only the teacher teaches is out. Thus,

> children learn new things with new people, because each one has his particular way, a language, and a different way of teaching. (S3_I_p31,§22).

Also, according to teachers, the presence of more and diverse adults in the classroom also creates opportunities for the development of interactive confidence grounded in solidarity bonds, also necessary for learning:

> The students quickly create bonds with volunteers. They miss a volunteer when he doesn't come or stops coming. When, for whatever reason, the interactive group is not held, they miss it. The students learn to trust these people. (S3_I_p31,§23)

Conclusions

In the Information Society, where both the production of knowledge and its impact on the forms of production and reproduction of human life assume the form of networks among individuals, groups, and institutions, learning takes place intensely in different locations and in the interaction among different people. Given these social changes that have increased the use of communication as a means for solving problems together, the psychological theories that see the formation of the mind in social, historical and cultural processes are more appropriate to support the development of successful school practices (Bruner, 1960, 1983, 1990; Scribner & Cole, 1981; Wertsch, 1991, 2002; Rogoff, 1990, 1995, 1998, 2003; Valsiner, 2000; Muller & Perret-Clermont, 1999).

In this regard, one of the most influential approaches in teaching and learning is Dialogic Learning (Flecha, 2000; Freire, 1970; Wells, 2001), which builds upon the strengths of previous theories of learning but surpasses them in merging the most important dialogic contributions from different disciples in view of reaching a deeper understanding of how people create knowledge together. Among other central differences with Piagetian and Ausubelian perspectives, in the dialogic learning perspective, the main aspect to take into account when designing instruction is not prior knowledge but where

we want to bring the students, their zone of potential development (Vygotsky, 1978). Also, in dialogic learning, we move from interaction based on the constructivist triangle (Piaget, 1966, 1987a), which advanced with respect to previous models of teacher-student vertical relationship regarding knowledge (Rosenthal & Zimmerman, 1972) to interactions with multiple others. In line with Vygotskian theory, in order to achieve the potential level of development, learning environments need to be reorganized to foster interaction among peers with different level of competence and with more adults. Interactive Groups is a learning environment which responds to these needs.

The results of the research discussed here (Mello, 2009b) reveal that participation in interactive groups guided by adults and youth from the community, who join the classroom to promote interaction among diverse peers regarding curricular activities, favors instrumental learning, improves respectful coexistence in the classroom, strengthens the academic self-concept of the participants, as well as creates the conditions for learning and teaching simultaneously. These results are consistent with other research on processes of dialogic learning in interactive groups (Racionero, 2011) and its outcomes in comparison to non-inclusive and non-dialogic classrooms (INCLUD-ED Consortium, 2009).

Overall, the review of the literature and the findings about the perceptions on learning in interactive groups inform us about the need and benefits for transforming school learning environments to make them align with the current tendencies and claims regarding how people learn and develop. While cooperative classrooms represented a step in this regard in relation to more traditional classroom organizations, other learning environments more in line with new learning realities, such as interactive groups, move a step further by means of diversifying interactions with adults from the community and benefiting from their unique contributions as guides of children's meaning making processes. On the ground of these findings, schools should open their doors, and that of their classrooms, to make social tendencies reform learning environments using the evidence of existing research about successful learning environments to ultimately improve all children's learning and achievement.

Notes

[1] This figure illustrates the conductist perspective of interaction in the classroom.
[2] This figure illustrates the Ausbelian perspective of interaction in the classroom.
[3] Source: Aubert et. al. (2008). *Dialogic learning in the information society,* p. 88. Barcelona: Hipatia.

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