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Key points for understanding educational issues

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LEARNING AND COOPERATING IN CLASS

Group tasks, collaborative tables, working in pairs, half-class debates… many pedagogical situations call for student cooperation, whether spontaneous or teacher-initiated. Do these social interactions guarantee learning? What role can the teacher take on, to support and assess each student's efforts and learning within the group? What perspectives can research bring teachers?

> *Cooperative work, which is mainly teacher-initiated and responds to educational learning purposes, is different from collaborative work, which has a looser framework and focuses on group members sharing their knowledge, to pursue a common goal.* (Reverdy, 2016)

Interactions at the core of cooperation

➡ The concept of interaction "*was introduced in the humanities in the second half of the 20th century. The term interaction then referred to any joint action, conflictual and/ or cooperative, bringing together two or more actors.*" (Olry-Louis, 2003) Interactions can be asymmetrical, such as supervision (tutorship, assistance and mutual assistance), or symmetrical (whereby skills and roles take place on the same footing).

Overview of the socio-cognitive conflict

➡ **3 interlinked dimensions:** cognitive, social, affective

➡ **2 influences:** Vygotski on social interactions and cognitive development; Piaget on development through conflict

➡ **A CONCEPT ESTABLISHED BY THE "GENEVA SCHOOL":**
Socio-cognitive conflict is a "*cognitive construction mechanism [based on] a cognitive dissonance (response conflict) and a social dissent (with a partner)*" (Buchs et al., 2008). The regulation of the socio-cognitive conflict leads to a cognitive re-organization for the learners.

COOPERATION AND SCHOOL, A LONG HISTORY

At the beginning of the 20th century, several pedagogical approaches, gathered under the term "New Education", had cooperation as one of their founding principles, in support of a political project: to emancipate the citizens of tomorrow. These movements, which arose on both sides of the Atlantic, had parallel developments:

- A pedagogical and philosophical approach in the United States, inspired by Dewey, theorized in the 1970s under the term "cooperative learning",
- Several pedagogical approaches in France and in francophone countries, among which the Freinet movement or Oury's institutional pedagogy movement, both of which can be found in the school co-operatives (the OCCE, Central School Cooperation Office, and the ICEM, Cooperative Institute of Modern Schooling - Freinet pedagogy).

Another line of research stemming from development psychology focuses rather on children's development during peer interaction. Indeed, having children work in cooperation implies taking into account the social and cognitive aspects of learning. The concept of socio-cognitive conflict, which also includes the affective aspect, was first developed within the "Geneva School", under the double influence of the works of Piaget, for whom conflict plays a primary role in the acquisition of knowledge from one's surroundings, and of Vygotski, for whom social interaction is at the core of cognitive development.

WHAT DOES COOPERATION BETWEEN STUDENTS DEPEND ON?

In order for the socio-cognitive conflict to take place for each student, that is to say when they confront their knowledge with that of their peers, many features must be factored in, depending on the students, the way the teacher organizes their cooperative teaching, but also other parameters:
- The context of the classroom, which itself is conditioned by the national context: depending on the country, a cooperative or a competitive spirit might predominate. This general atmosphere also influences the relationship between teachers and students, and therefore the class atmosphere,
- Pedagogical choices, including that of cooperative activity, which might be considered a complex task rather than a memorization effort; the establishment by the teacher of a motivational climate in class, in order for students to trustingly engage in a task and develop their autonomy,
- Interpersonal relationships between students, which may change, subjected to real or perceived statuses of each student within the group. These relationships are particularly sensitive and loaded when entering adolescence, a time when peer groups are rapidly made and broken.

Cooperative attitudes also depend on the academic level, and amongst others, on gender (a cooperative attitude is more common among girls than boys), or the socio-economic level (the cooperative spirit is weaker in schools with a higher socio-economic level).

LIMITATIONS OF RESEARCH CONTRIBUTIONS

The landscape of research on cooperation at school is rather eclectic, and mostly dates back to the 1980s and 1990s. As is often the case when education is concerned, a cross-reading research is necessary, but even more so for cooperation: what would come of language sciences, which meticulously analyze traces of learning in interactions between students, without educational psychology, which explains the influence of emotions on such interactions? What would come of educational psychology, which attempts to show the effects of these interactions on the development of students, without sociology of education, which recontextualizes the spirit of cooperation within a national context and within specific schools?

All these reasons point towards the shortcomings of considering advances in research on education as recipes to be followed, depending on the specificities of students and classrooms. Instead, they should be understood as potential indicators of analysis to be combined with experiential knowledge accumulated by teachers, the sole keyholders of cognitive, affective, social, contextual and pedagogical dimensions of cooperation between students. The teacher must therefore make sure appropriate conditions are in place, but even more so test and make choices depending on the learning objective, in order to untangle the network of complex mutual influences (the slightest change can lead to greater shifts on every level). A balance is needed between group productivity (which increases with the number of students) and the ability of the group to process interactions (made difficult by the number of students).

For Olry-Louis (2003), the two main purposes of cooperative learning are first *"to consider that it is not enough to put students together on a task for them to work in a cooperative manner, and to assume that an authentic cooperation will develop over time, albeit through specific training. Another purpose is to appreciate the effects of this scheme not only on a cognitive level, but also on a socio-relational level."*

ORGANIZING LEARNING IN COOPERATION

Research has revealed certain beliefs teachers may have about the true benefits of cooperative learning for students: that it purports to develop socialization skills rather than proper learning, since it is undertaken only among peers and without teacher supervision. Or that establishing cooperative work implies many constraints (waste of time, loss of control, poor commitment from students, lack of concentration, difficulty to assess the work of each student…).

It is true that opting for cooperative work implies preparatory work for the teacher: choosing activities which respond well to cooperative work, defining in advance the learning objectives aimed for in this work (which may very well be to develop group work skills, in which case the content of the activity work is less important), and taking the necessary time to ensure appropriate exchange conditions between students. The assessment of cooperative work can be based on learning about group functioning, on the activity itself, and can be individual or collective, depending on the teacher's expectations and learning objectives. In order to favour socio-cognitive conflicts among group members, a certain heterogeneity within the group (social, gender, and skill-based – whether real or perceived – variables) and a reasonable group size (between two and four or five) are advised, although research on education cannot indicate how much depends on the teacher's choices.

> *The approach chosen should prioritize quality interactions, and only then the effects on learning.* (Rouiller & Lehraus, 2008)

THE ROLE OF THE TEACHER IN COOPERATIVE LEARNING: TO EACH HIS OR HER STRATEGY

The role of the teacher in cooperative work is reconfigured: they are required to take on a supporting role for the groups, possibly by defining roles played by students and making sure each student's voice is heard, with the aim to develop individual responsibility within the group. Whenever group members discourage or prevent the efforts of others, interdependence becomes negative and leads to competition. Conversely, if students encourage and facilitate their peers' learning efforts, the interdependence between them is positive and leads to cooperation. Therefore, the term "cooperation", if pushed to its limits, might be defined as the only positive interdependence between group members.

It therefore seems necessary to train students to develop skills useful for cooperative work, which can be developed in three (not necessarily consecutive) steps:

- Starting to learn cooperation (games, peer mediation…) in order to ensure a class atmosphere which is favorable to cooperation,
- Learning to cooperate, developing team spirit (commitment, solidarity, trust…). For this, teachers must focus on the cooperation process, and not only on the tasks the students are expected to complete. Cooperative group work must therefore be internally regulated, for the sake of students' metacognitive reflection on cooperation, and for taking into account the dynamics of the discussion,
- Cooperating to learn, a step for which the teacher must ensure that appropriate conditions are in place for encouraging this cooperation.

Different configurations of cooperative learning

Amongst the many cooperative learning methods is the **Jigsaw classroom** (breaking teaching down as though in a jigsaw puzzle), presented as an informal learning method: teams of 6 students are created to each work on a theme, each student being in charge of a sub-theme. Groups of experts, made up of those in charge of each sub-theme, then work separately and report back to their initial group what they have learned. Such an approach encourages discussions, projects and social dynamics amongst students.

Other models such as **tournaments** or **investigation groups** aim to establish competition between groups of students, with a view to developing both cooperation within groups and competition amongst groups.

A few necessary conditions to establish cooperative learning in class
(Plante, 2012)

➡ Positive interdependence between group members: the group's success is dependent on that of all group members

➡ Individual responsibility: each group member must *"play along"* with the cooperative task

➡ Development of social skills, which must be clearly set out (decision-making, conflict management…)

➡ Constant cooperative work feedback and self-assessment which nourish the group

A FEW REFERENCES TO GO FURTHER

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• Tutorat et apprentissages scolaires, *Carrefours de l'éducation,* no. 27, 2009: *https://www.cairn.info/revue-carrefours-de-l-education-2009-1.htm*

OTHER RESOURCES

• Institut coopératif de l'école moderne - Pédagogie Freinet (Cooperative Institute of Modern Schooling - Freinet pedagogy): *https://www.icem-pedagogie-freinet.org/accueil-principes-pedagogiques*

• Centre d'entrainement aux méthodes d'éducation active (Training Center for Active Educational Methods): *http://www.cemea.asso.fr/*