

POSITIVE INTERDEPENDENCE: DIFFERENT APPLICATIONS

Positive interdependence and Cooperative Learning

Many exponents of cooperative learning, including David, Roger Johnson and Edythe Holubec, Spencer Kagan, Robert Slavin, Shlomo and Yael Sharan, and in Italy Mario Comoglio, hold that for group work to be successful, it is very important to consider in what way positive interdependence has been thought out and structured.

The presence of positive interdependence means students are more involved and cooperative. It sounds easy, and in training courses teachers are told to think of activities in which the final goal is reached only when each member of the work or study group contributes. My experience as a teacher and teacher trainer has taught me that things are much more complicated in the classroom. It's more difficult to combine school objectives and curricula work with the creation of a real and effective interdependence. The aim of this article is to help teachers who would like to transform their groups of students into truly interdependent groups. It is based on the work of experts, and adds some practical hints by someone who works in a classroom every day.

Is it possible to teach positive interdependence?

We are in a situation of positive interdependence when, as we said before, we have a common goal and it can be reached only with the efforts of all group members. Sometimes the situation of mutual dependence is so obvious that the people involved in it automatically behave in a cooperative way (if I have to move a piece of furniture in my house, and it's too heavy to do it by myself, I'll have to coordinate my movements with my wife's). The members of a football, rugby, volley or basketball team have the aim of winning the match, but they'll only manage to achieve it if each player covers his role in the team to the best of his abilities. It's obvious that the aim can't be accomplished if the players don't cooperate. The Italian football team won the World Cup in 2006 not because of the individual performances by Del Piero or Totti, but because an excellent coach like Marcello Lippi managed to create a really compact group that could work together, and was encouraged to do its best, a difficult objective following the scandal of the buying and selling of match results. Sometimes one of the members of a group considers himself more important than the others, and wants to emerge from the group. At that point the group starts to break down.



In this kind of situation insisting on working in an individualistic way means not understanding – or not wanting to understand - that the goal can be reached only by exploiting various competences, not only a single individual's. Team sports are a situation in which **cooperation** is a must, and is nearly always perceived as such subjectively too.

There are many situations in real life that require cooperative behaviour, but not many people are taught to be aware of the importance of cooperation. The world of work is complex, and problems would be solved more easily with the cooperation of many minds that interrelate efficiently. Schools risk carrying on presenting students with situations – difficult situations too¹, but not necessarily complex - to be solved in an individualistic or even competitive way.

Teaching interdependence means creating the conditions in which students feel that cooperation with fellow students is necessary, assuming that they don't already know how to cooperate.

At this point it is essential to create **situations of objective interdependence** for the students. They should be taught to face real situations, like the ones they'll have to face outside school, avoiding the pitfall of presenting unrealistic situations. Nowadays, to be realistic, teachers must present students with **complex** situations, and educate them to solve them in groups where each person can contribute something different. If a teacher, starting from his own subject, can put his students in complex situations - the only type of situation which encourages cooperation between the group members - teaching positive interdependence can become reality. Traditional school activities (lecturing, testing, evaluation) aren't complex activities, they don't create positive interdependence, so there's no point in doing them in groups. For the teacher who wishes to use the group as a learning tool the difficult part becomes creating activities in class with the students which encourage the need to cooperate. The teacher must be able to transform his teaching and educational goals into activities that require the use of differentiated skills, as happens in the real world (some people plan, some sell, some organize...).

We teachers who have always been used to simplifying material (summaries, charts, maps) have to learn to make it more complex and problematic, so that positive interdependence becomes a necessity.

To give a practical example: we can talk about the **Second World War** simplifying the subject matter, explaining the causes, the various stages of the war and the consequences, maybe with the help of charts etc, or we can take some material to school: films, photos, data, headlines and articles

¹ doing a three figure division, or a square root sum can be considered difficult; organizing a school trip can be considered complex



taken from newspapers of the period, and get the students to work in small groups on one particular aspect of the same period. Traditional teaching **simplifies**, group work **complicates**.

Oversimplified topics make it difficult to create situations in which cooperation is necessary (**positive interdependence**), because they don't leave scope for the students' different skills and interests.

A teacher who wants his students to do group work mustn't only create complex activities, but he must also help those students to develop interpersonal skills² and create **face-to face promotive interaction** among the members of each group. Regular group processing is also very important to keep up individual responsibility. Positive interdependence is an essential element of Cooperative Learning and with it students realize that to reach their goal, they are linked to others. Interdependence can be both **objective** and **subjective**. It's **objective** when the activity requires the material cooperation of the members of a group, while it's **subjective** when each single member of the group realizes that this need exists.

For example, to make a class magazine, someone must write an editorial, someone must write an interview, someone must do the layout on the computer, someone must draw and get hold of suitable photos. The situation requires students to talk things through with each other, cooperate, but if they're not used to doing it, it's possible that each member will work by himself, in spite of the situation they find themselves in. They're in a situation of objective interdependence which is not however felt at a subjective level. This can happen, and students will continue not to cooperate, but carry on in an individualistic or competitive way.

If, however, students are continually put in situations of objective interdependence, and are helped to consider the experiences they are having (**processing**), at a certain point they will start using good practices to reach their goal. The situation they are experiencing and the ensuing discussions help them to realize that cooperative behaviour is also effective behaviour. If teachers plan activities that envisage "*common goals, sharing of tasks, resources and information, role taking and group rewards*"³ they will reach excellent results in **cooperation, solidarity** as well as **real learning**.

Different uses of positive interdependence

So far so good. At this point we must put ourselves in the position of a teacher who decides to start using the method. Where does he start from? What are his goals? A teacher who puts his students in

² social skills are: communication, leadership management, conflict management, sharing in problems and decision making. Each social skill is subdivided into many skills, and these social skills can be vastly improved

³ COMOGLIO, M., CARDOSO, M. A., *Insegnare ed apprendere in gruppo*, LAS, Roma, 1996, p. 30



small groups may risk failure at first. Why do certain activities designed to be interdependent in roles or material not encourage cooperation among the members of a group? Why are they not successful in spite of apparently perfect organization?

When faced with the first failures, if we don't wish to abandon the method, two basic questions must be answered:

- how much time did I spend on **informal cooperative learning**?
- Did I create a real **positive interdependence**, or an imitation one?

This article intends to concentrate above all on the second question, trying to go beyond the classic subdivision into **types**⁴. To solve the problems that come up in class it isn't enough to be aware of the different modalities of positive interdependence, we have to ask ourselves how and when to **use** these different modalities. How can I know if a role interdependence is more or less effective than a task interdependence, and if it should be applied before or after information interdependence?

The following material aims to clarify some doubts that arise from this.

Authentic positive interdependence (API)

I have therefore decided to call **authentic positive interdependence** that which is found in the world of work, people with different jobs depend on each other for the successful outcome of a particular operation. In a company people are involved in different sectors: planning, production, marketing and sales. Each sector requires a different specialization, but also the sharing of goals and strategies. It is possible that even in situations of objective interdependence not all the members of a group understand the sense of their jobs at a subjective level. This happens when communication between different sectors is not clear, and/or ideas, strategies and work methods are not shared.

First Application: Authentic academic positive interdependence (AAPI))

Is it possible to create situations in school where the students work in small groups with **authentic positive interdependence**? Is it possible to create activities with common, shared goals, which can be accomplished only with everybody's efforts, in a group where each does what he is best at? This is where we teachers find ourselves in trouble: how is it possible to organize activities like these?

⁴ Johnson, D., Johnson, R. & Holubec, E. *Cooperation in the classroom*. (6th ed.), Edina, MN: Interaction Book Company 1993, COMOGLIO, M., *Educare insegnando*, LAS, Roma, 1998, pp. 59-63



First of all, we have to **know** our students in depth, not only at a cognitive and social level, but from the point of view of their extra-curricular interests. To do this, we can avail ourselves of the normal welcoming activities organized by each school at the beginning of the school year, plus tests, sociograms, and all the activities of informal cooperative learning ⁵ in pairs. These activities should be continued for at least the first three months of school.

After this initial phase it's possible to organize activities in small groups which are able to create **authentic academic positive interdependence**. The activities which take place in authentic academic positive interdependence mean each member of the group does what he is best at, allowing him to give a concrete contribution to accomplishing the goal. Let's look at a concrete example, going back to the class magazine. We will have created authentic positive interdependence if within each group of four students, the one who can write writes an article, one can prepare questions for an interview, someone who is good at relating to people asks the questions, and one who can draw designs the strips to accompany the two articles. Strong points and weaknesses will emerge from an activity which is structured like this. The strong points are, first: motivation and self-esteem, which remain high throughout the activity because each member is called to do what he is best at, and what he likes doing; secondly the development of a good relationship among the components of the group. The students learn to appreciate what they and the others can do, and they can show this to their classmates and teachers.

Possible difficulties can be the need to know the students well (so as to assign them suitable roles and tasks), and the difficulty for some teachers to plan complex activities (planning, procedure and timing are of vital importance).

Many teachers are also in doubt about the usefulness of getting students to work on what they can already do well, even if it is only a question of one or two activities in the whole school year.

These activities, however, should be used, if they can create mutual esteem among members of a Class. But if they are used for the whole school year, they lose their point and effectiveness.

Developing self-esteem and mutual esteem in a group, and esteem between students and teachers is not easy, but it is very important. Schools and parents rarely think that motivation to learn can depend on the ability to manage emotions and interpersonal relationships⁶. Setting up cooperative

⁵ By Informal Cooperative learning we mean all those short specific techniques of group work which can follow a presentation by the teacher

⁶ As regards this topic I would suggest an interesting article: FONTANA, U., *Affettivamente selvaggi o affettivamente educati*, in ISRE Rivista Quadrimestrale, n. 1, anno 2004, pp. 88-103



learning with activities of this kind helps students to work on their own emotions, and helps teachers to get to know their students really well.

Second Application: Authentic academic and formative positive interdependence (AAFPI)

Activities in **authentic academic and formative positive interdependence** mean getting students to do what they're not good at. This is an even more complex activity than the preceding one. The teacher must form heterogeneous groups within which each student must be a helper and helped. Helped because if for example someone can't write a narrative text he must be helped by someone who can, and helper because he must be available to help someone at something he is good at. This type of activity turns out best if the group has already experimented with an activity of **authentic academic positive interdependence**, since at that point members will already know and respect each other. The positive consequences of this kind of activity are linked to the fact that each member works on a particular weak point, and so can learn new contents or skills.

Third Application: Imitation academic and formative positive interdependence (IAFPI)

If the previous two applications use very different skills (for example linguistic and interpersonal skills)⁷, the activities in this application mean group members work on a particular skill – and different members will of course be at different levels in this skill. For example, if the teacher gives the four members of a group four paragraphs of history to study, it's taken for granted that all the members can read and take notes. The members won't have different tasks to do, like drawing, writing, interviewing etc, but they will be encouraged to be interdependent in the contents – each one focussing on one part of the material - or on role interdependence - the whole group studies the same material, but will take on different roles: for example reading, asking questions, summarizing, making charts.

The good part about this activity is that it's not difficult to explain (for example, in the case of a literary passage, one reads, one asks questions, one summarizes and one makes a chart) The bad part is that, if the students are not used to working in groups, or haven't developed the skill of asking for and giving help, the cooperation might be only apparent (the strongest student works

⁷ To understand more about multiple intelligences: Gardner, H., *The disciplined mind*, New York, 1999



alone) Another positive aspect is that if the work is done as it should be, the weakest members learn a lot too.

This kind of activity represents the central part of an annual syllabus, but before proposing them to students, the first and second applications must have been done, because the students must be able to work in groups, and possess certain basic social skills.

Non authentic academic positive interdependence (NAAPI)

Lastly we have activities in non authentic positive interdependence. These are activities where the teacher would like to introduce cooperation, but are structured in such a way as to preclude the need for mutual help. For example, if a teacher puts four students in a group and gives them four divisions to do, the risk is that the best will do three and the others only one. These activities are in fact planning mistakes, easy to make when a teacher starts using Cooperative learning, but mistakes which he must become aware of.

Summing up

If a teacher decides to work with Cooperative learning, the school year should be structured so as to guarantee maximum success for each activity.

The best way to proceed therefore is to start with getting to know each other, going on to informal cooperative learning. When the teacher feels he knows the class well enough, he can move on to the **first** and **second applications**. After doing thorough group processing, it is possible to begin working on activities linked to the **third application** of positive interdependence. As an end of the year test , it would be interesting to set new activities in **authentic academic positive Interdependence** (first application), which we could call **2nd level**. These activities can be part of wider testing, and should help to check if the new skills have been successfully learned by the students.



Summing up chart

Month	Applications	Types	Type of activity
September	getting to know the class	Interdependence of aims tasks, imagination, against an external force	Activities in groups of three or four, with interpersonal skills taking precedence over academic skills
October-November	informal cooperative learning	Interdependence of aims, tasks, roles	Activities in pairs with preparatory work and occasional explanations
December	First application API	Interdependence of aims, tasks and assessment	Activities in groups of three or four. Interpersonal skills taking precedence
January	Second application AAFPI	Interdependence of aims, tasks and assessment	Activities in groups of three or four with interpersonal and academic skills having equal importance
Feb-May	Third application IAFPI	Interdependence of aims, materials, information, roles and assessment	Activities in groups of three or four, with academic skills taking precedence
May-June	First application :API 2 nd level	Interdependence of aims, tasks and assessment	Activities in groups of three or four, with the goal of assessing both interpersonal and academic skills acquired

Conclusion

Before concluding this article, I would like to underline some considerations linked to the fact that the method must be applied gradually.

Many teachers enthusiastically throw themselves into the activities, but it is of paramount importance to start by getting to know the class well, and then proceed to informal cooperative learning. Planning of the activities during the school year is important too.

If a teacher has clear ideas about the three different possible applications, he can not only control his own activities better, but is freer in his work too. In fact it is possible to anticipate one application and postpone another, but only as long as the consequences of doing so are fully understood. It's also possible to decide to use only one application during the first year of experimenting with the method. It is the teacher who decides what to do, and how to do it, depending on his objectives and the class he is working with. I trust that this article will have helped to clarify the potential results and consequences of the teacher's decisions.

Paolo Scorzoni

Junior High School teacher

www.abilidendi.it

translation by Margaret Hazard



References

- Deutsch, M. (1962). Cooperation and trust: Some theoretical notes. In M. R. Jones (Ed.), *Nebraska symposium on motivation*, 275-319. Lincoln, NE: University of Nebraska Press.
- Johnson, D. W. (1991). *Human relations and your career* (3rd. ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Johnson, D. W. (1993). *Reaching out: Interpersonal effectiveness and self-actualization* (6th ed.). Needham Heights, MA: Allyn & Bacon.
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction Book Company.
- Johnson, D. W., & Johnson, R. T. (1995). *Teaching students to be peacemakers* (3rd ed.). Edina, MN: Interaction Book Company.
- Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1993). *Cooperation in the Classroom* (6th ed.). Edina, MN: Interaction Book Company.
- COMOGLIO, M., CARDOSO, M. A., *Insegnare ed apprendere in gruppo*, LAS, Roma, 1996
- COMOGLIO, M., *Educare insegnando*, LAS, Roma, 1998
- FONTANA, U., *Affettivamente selvaggi o affettivamente educati*, in ISRE Rivista Quadrimestrale, n. 1, anno 2004, pp. 88-103
- Gardner, H., *The disciplined mind*, New York, 1999
- Johnson, D. W., Johnson, R. T., & Smith, K. A. *Basic elements of cooperative learning*. In K. A. Feldman & M. B. Paulsen (eds.), **Teaching and learning in the college classroom**. ASHE Reader Series. New York: Ginn, 1994.

