

The effects of a structured training for the positive implementation of Cooperative Learning.

Patrizia Fantuzzi

PROGETTO CRESCERE Social Cooperative, Reggio Emilia, Italy

Correspondence

p.fantuzzi@progettocrescere.re.it

Cooperative Learning is a structured approach designed to improve the academic and social skills of students.

Several researches have investigated its impact on students and examined the degree of effectiveness on the development of academic and social skills, while the literature has showed partial and inconclusive results about the impact on teachers and about the modification of their own methodologies.

This article describes the effects of a structured training about Cooperative Learning on teachers participating in the course. The purpose of the present study is also to verify if that course develops special social skills useful for teachers' work.

The course is based on active methodology, the simulation, that permits participants to experience the Cooperative Learning approach directly, thanks to the use of "skillbuiders" exercises.

Different instruments of evaluation (individual and group evaluation; emotional and objective evaluation; day-by-day evaluation, final-evaluation, post-evaluation) gather data about the immediate and the following positive effects.

The results show that participants have developed a first academic skill (attention to learning processes and strategies) and a basic social skill (to favourite the equal participation in a groupwork).

The results support the hypothesis that teachers use Cooperative Learning more positively and effectively, if they have a personal experience of Cooperative Learning that permits the implementation of the method.

Keywords

Cooperative development of social and communication skills, learning processes, Learning, teacher and educator attitudes, meta-cognitive discussion, structured training.

Introduction

Over the past thirty years different approaches to Cooperative Learning have been proposed by different researchers: David Johnson, Roger Johnson and Holubec (1993), Robert Slavin (1994, 1995), Shlomo Sharan and Yael Sharan (Sharan, 1995; Sharan & Sharan, 1994), Elisabeth Cohen, (1996), Kagan (1988) and Comoglio (1998).

Johnson, Johnson, and Holubec defined cooperative learning as "the instructional use of small groups so that students work together to maximize their own and each other's learning"(1993, p. 6) and they delineated one structured model of Cooperative Learning. Other researchers underlined the same feature, especially they said that students, using Cooperative Learning, help each other to learn.

Several research articles has been written and are written nowadays, but the majority of researchers studied and underlined the effects of Cooperative Learning on students' learning.

The most important effects that they cite are motivational effects (an increase of motivation to learn), cognitive development effects (a social cognitive conflict permit a comparison between different points of view and different strategies to solve problems), cognitive elaboration effects (an increase of meta-cognitive control: attention, memory, self-evaluation) and effects on social relationship (an increase of social skills).

However the literature has only few studies about the effects of Cooperative Learning on teachers/educators' strategies and methodology to teach. They say that those who participated to a specific course about Cooperative Learning implement the method with benefits for learners (Veenman S., et al., 2002).

In line with these researches, the present research examines the effects of a Cooperative Learning

structured training course on teachers who had participated in it: the hypothesis is that teachers use Cooperative Learning more positively if they had actively participated in a specific group of learning, testing directly the methodology.

The empirical study starts from the thought that specific social and communication skills are necessary to use Cooperative Learning. In other way, teachers or, in general, those who have a role of coordinator in a group of learning, must have proved and developed the five essential elements of a cooperative learning group: “positive interdependence”, “face to face promotive interaction”, “individual and group accountability”, “interpersonal and small group skills” and finally “group processing” (Johnson et al., 1993).

Some researches underline the risk of a cooperative learning training: participants do not effectively use the method in their educational contexts. Some researchers have studied the relationship between teachers beliefs and attitudes and the effective implementation of Cooperative Learning (Case S. L., 1998). These studies describe how teachers who used Cooperative Learning pay more attention to cognitive skills (self-regulation, self-evaluation, attention, development of strategies) than the other ones who pay attention especially to the contents and to the objective results in learning.

A parallelism between teaching and learning can be created. Both need the same cognitive and social skills: motivation, equal participation, collaboration in peer-education. There is a strong connection between the two moments, teaching and learning (Snyder S. A., 1999): a good collaborative teaching is the base to develop a good learning process. Teachers are coordinators, mediators of the learning process: teachers must observe processes, must create the condition for a positive discussion, must create a social-cognitive conflict, developing a comparison between different points of view.

In order to study the effects of a structured training based on the promotion of social and communication skills, this article describes the results of a course organized in Reggio Emilia by a social cooperative L’Arcobaleno Servizi. The course is included in the Mobility Grundtvig Programme (LLP-Lifelong Learning Programme) of the European Community for three years: 2008, 2009 and 2010.

The study presents the analysis of the first period (February 2008-June 2009).

Method

Methodology

The participant group is composed of twenty participants (teachers, educators and coordinators of educational contexts). They have been divided into three small groups (8-5-7) in three different sections of the course.

The main feature of the group is the heterogeneity: they had different nationalities (Spain, France, Denmark, Belgium, Finland, Sweden, Norwegian, Rumania, United Kingdom, Turkey, Greece), different ages (from 25 to 63), different races, different genders, different professions (Pre-school Teachers, Primary School Teachers, Secondary School Teachers, Vocational School Teachers and University Teachers; curricular teachers, special needs teachers, educators and coordinators) and different achievements (expert and no expert in Cooperative Learning).

Groups are guided by two trainers.

First of all, trainers have defined:

- 1) the aim of the course: to present the main Cooperative Learning approaches to practice Cooperative Learning;
- 2) the methodology: the course is organized as a simulation: the subgroups stay together for five days and they worked as any other educational group (similar to a class or a teamwork).;
- 3) the instruments: the coordinator uses specific “skillbuilders” (Cohen E., 1996): activities, games, exercises that create the condition for an equal participation of each member of the groups.

The planning and the organization of the course focuses the attention on an active participation of the members and on a positive and concrete discussion. The course does not allow a theoretical discussion, but permits a direct experience of different theories.

The course presents a structured programme divided into steps having the aim to develop specific social and communication skills.

Table 1 describes this programme: activities, specific objectives, general aims and “skillbuilders” used to develop the skills.

The programme starts from a comparison between the participants’ pre-knowledges and pre-cognitions about Cooperative Learning (step 1), and finishes creating an original idea of the group thanks to emotions and art (step 8). Steps develop the most important social and communication skills summarized in:

1. Communication skills:
 - To compare personal ideas and different points of views
 - To let everyone communicate his/her thought
 - To get quickly to the point
 - To pay attention to what is being said in a group
 - To reflect what people say
 - To criticize ideas and not people
2. Social skills:
 - To pay attention to what other group members need
 - To promote face-to-face interaction
 - To develop positive interdependence
 - To develop an equal participation
 - To open one's mind to different opinions and ideas
 - To learn together
 - To help each other
 - To create a communicative and collaborative group
3. Communication and social skills:
 - To compare personal strategies, to develop original strategies, change personal strategies

The programme offers a progressive sequence of occasion to improve social skills (S) and communication skills (C); there is a strong interconnection between the two types of skills and sometimes the separation is difficult. For this reason, *Table 1* defines the prevalent one, but a

positive “skillbuilder” exercise develops both in the same time.

The researches show that, in a group of adults, “cooperative + communication condition” is the same as a “cooperative condition”; probably, because adults have developed or learnt communication skills. The situation is different with young students: “children in the cooperative + communication condition provid(ed) significantly more elaborative and help-giving behaviours to group members than peers in the other ... conditions” (Robyn & Asaduzzaman, 2008).

In this training the skills' combination is considered an important factor, because the idea is that adults use naturally communication skills but they usually do not reflect about that use and the reflection, like a meta-cognitive process, is an important condition to teach these skills to others. The teachers, during the course, have reflected on cooperative and communicative behaviours, especially on strategies and processes, through a mediation of the trainer.

The mediation is an other important element of the course: the trainer has the role to explain tasks and rules very clearly, to observe behaviours, to guide and help the discussion, to focalize the key-behaviours of the group and, finally, to generalize reflexions to other group learning/working situations.

The mediation is a simulation too: during the course, participants are learners, with an inversion of their natural role and cooperative learning researches confirm that learners “use(d) many of the behaviours and discourses they have heard their teachers use in their interactions with each other” (Robyn & Boyle, 2008).

Table 1
Steps of the course programme: activities, objectivises and aims

STEP	ACTIVITY	SPECIFIC OBJECTIVE	GENERAL AIM Prevalent Skills developed: S (Social) C (Communicative)	SKILLBUILDER
1	To complete a table answering to some questions: 1. what do I know about Cooperative Learning? 2. what would I want to know about... Cooperative Learning? 3. what have I learned about cooperative Learning thanks to a group comparison? 4. Remaining questions.	To compare pre-knowledge and pre-cognition analysis about Cooperative Learning	To compare personal ideas and different points of views (C)	Table k-w-1 (Ogle, 1986)
2	To complete a puzzle in silence and with specific rules.	To respect rules.	To pay attention to what other group members need (S) To promote face-to-face interaction (S) To develop positive interdependence (S)	Broken Circle (Graves & Graves, 1985)

3	To discuss in group about a situation of conflict using an instrument that limits and define the number of personal talking	To define a group solution.	To let everyone communicate his/her thought (C)	Alligator river + Talking Chips (Kagan, S. and Kagan, M., 1998)
4	To discuss in group about a problem to solve using an instrument that defines the methodology of an efficient discussion	To learn to use a specific instrument of communication in group.	To develop an equal participation (S) To get quickly to the point (C) To pay attention to what is being said in a group (C) To reflect what people say (C) To criticize ideas and not people (C)	Space ship + Four Stage Rocket)
5	To discuss in group about a situation of conflict exploring all points of view using an instrument that permits to use different masks	To observe a situation from different points of view.	To open one's mind to different opinions and ideas (S)	Six Hats (Adaptation: + an original discussion situation about immigration in school) (De Bono, 1985)
6	To solve a problem	To use the most effective strategy.	To compare personal strategies, to develop original strategies, change personal strategies (C-S)	Rainbow logic (Stenmark J. K., Thompson V., & Cossey R., 1986).
7	To answer to a comprehension test about a narrative text involving each member of the group	To evaluate group and individual accountability	To learn together (S) To help each other (S)	Teammates consult (Kagan, S. and Kagan, M., 1998) + Jewish Story (Johnson & Johnson, 1987)
8	To develop a common idea in each of work, thanks to emotions and creativity	To define, describe and represent one's own group.	To create a communicative and collaborative group (S)	Emotional exercise and laboratory that develops creativity

Instruments

Different instruments have measured participation, development of social and communication skills, Cooperative Learning implementation and dissemination.

1) Instruments used during the course:

- a) direct observations by trainers of the group during cooperative learning activities thanks to a checklist that permits to evaluate two dimension: the equal participation of the members in the group activities and the attention to the different points of view.
- b) wrap-up and self-evaluation in group at the end of each activity about the meaning of the group working/learning.
- c) a final "skillbuilder" exercise: groups must define themselves, as groups, with three adjectives and three metaphorical words; groups must write a sentence describing them.

This exercise evaluates the emotional dimension: feelings in the group working/learning.

2) Instrument used at the end of the course: a final evaluation questionnaire

The final evaluation questionnaire is an individual instrument that asks open questions about:

- (a) expectations and satisfaction/dissatisfaction of them,
- (b) utility,
- (c) the best and most useful parts of the course.

3) Instrument used 5-8 months later the end of the course: a post-questionnaire used to evaluate the impact of the course in the professional and educational experience of the participants. In particular the questionnaire analyses the utility, the pedagogical effectiveness and, in order to respond also to the aim of the European Community, the possibility of having a dissemination. The questionnaire is composed of open and closed questions.

The first part asks if the participant has used the cooperative learning method in a pure form or mixed with other methodologies.

A second part analyses the modifications in teachers' behaviours and educational methodologies specifically about:

- (a) the role of teacher/educator/coordinator in the group,
- (b) the communication with students,
- (c) the communication with colleagues,
- (d) the cooperation with colleagues,
- (e) the organization of lessons,
- (f) the role given to students in planning lessons,
- (g) the definition of the aims of teaching and
- (h) the evaluation of the students.

Results

The direct observations of cooperative learning activities confirms that groups change their behaviours during the course. In particular, each group has inside participants with different roles: leader, isolated and peer. The evolution is the same for the three groups. Leaders conserve their role but they recognise and admit this position; they control themselves in favour of an equal

participation; they remember the specific rules of some activities having the same aim as all participants. The isolated people became part of the group: they participate with no-verbal communication; they assume “management roles” (Johnson D., Johnson R. & Holubec, 1993), such as the timekeeper; they support the group discussion with a confirmation or an opposition to the general ideas. Peers assume a personal position; sometimes some of them became new leaders.

The general result is a development from an heterogeneous group to a collaborative group, that underlines in the wrap-ups and self-evaluations the positive interaction.

In the final “skillbuilder” exercise, each group speaks about a process of changing. They use similar keywords summarized in: open approach, diversity as resource, development, process in progress (see Table 2).

Table 2
Keywords used by groups to describe themselves

	Keywords			
	open approach	diversity like resource	development	process in progress
Group 1	<i>flexible like us</i>	<i>different personalities</i>		<i>open to new ideas and situations</i>
Group 2	<i>we are open to different activities</i> <i>we are roads with different direction</i>	<i>we are different people with different backgrounds</i> <i>we are multifaced</i>	<i>we developed as individuals and as a group ...we grew up together</i>	<i>possibility to continue this activities in our daily work</i>
Group 3	<i>... We are different streets in our lives, we cross during this week.</i>		<i>... We are here to learn to overpass difficulties and obstacles. We want to find tranquillity and dreams.</i>	

Groups have described themselves with positive emotional word, result of a specific question: *define your group with a word?* (see Table 3).

Finally the groups have created a representation of the group (see Table 4).

Table 3
Emotional words used by groups to define themselves

	Emotional words
Group 1	RELATIONSHIP RESPECT
Group 2	COOPERATIVE DIFFERENT DEVELOPING INTERESTED
Group 3	WARM PERSONALITIES HAPPINESS, FREEDOM, JOY, PLAY DOMINANCE, DIFFERENT LIVES

Table 4.
Sculpture created from the groups to define themselves

	Sculpture representation
Group 1	DIAMOND, ROADS, OPEN DOOR
Group 2	MOUNTAINS, RING
Group 3	CIRCLE, KITE

Data from the final evaluation questionnaire, administered to the participants, support the positive image of the course (Table 5 shows individual and collective evaluations). The individual evaluation is positive when the score of the final questionnaire is upper than

7.5. The score is the media of the scores of the individual items (7 questions with an evaluation from 1 to 10).

Table 5
Final evaluation questionnaire's Data and comparison with the results of wrap-up and self-evaluation of the groups

Instrument of evaluation	FINAL EVALUTATION QUESTIONNAIRE			WRAP-UP and SELF-EVALUATION OF THE GROUP
	IN LINE WITH EXPECTATIONS	EVALUATION	Individual evaluation	Collective evaluation: Important things learned by the group (results of the wrap-up and self-evaluation of the group)
GROUP 1				we come from different countries and work experience. We are here as in a river to look for a new way
member 1	YES	POSITIVE	There were many different things to do and to learn	
member 2	YES	POSITIVE	The training with exercises, was positive as well as the share experiences with different person	
member 3	YES	POSITIVE	I have enjoyed the reinforcement of programme thanks to the application and institution's visits	
member 4	YES	POSITIVE	I think it is helpful to be a part of the programme. I understand my "people" much better	
member 5	YES	POSITIVE	It was very helpful for me the interaction with teachers and participants	
member 6	YES	POSITIVE	All the parts of the course were useful because they created the connection necessary to reach the processes of cognition	
member 7	YES	POSITIVE	Before participating to that seminar I was just thinking to use the cooperative learning but now I'm convinced that is a very good way to transfer thinking, acting and reflecting thanks to interaction	
member 8	YES	POSITIVE	Every idea explained in the course will be useful for my children (adaptation).	
GROUP 2				Together we are more
member 1	YES	POSITIVE	The skillbuilders were very interesting and thought provoking as well as enjoyable	
member 2	YES	POSITIVE	It was interesting the moments when we tested the cooperative learning tools in the group	
member 3	YES	POSITIVE	The Cooperative Learning is not the develop ability of working together but the ability of work better (skill of learning) because we are together.	
member 4	YES	POSITIVE	I tried to teach in an other way, and to cooperate more as a team	
member 5	NO	POSITIVE	Cooperative learning is at the border of emotional and technical construction of a team. When I saw our group here, I'm sure we've created an emotional team, but I'm	

			not sure we have already created a real cooperative of learning.	
GROUP 3				
member 1	YES	POSITIVE	Excellent group work The course made me more tolerant to other people's ideas	To collaborate, interact, listen, accept own frustration. To know some skills that help to reflect on behaviour in groups. To argue negative opinion. To Give a bigger overview. To form your own idea and to listen and reflect on other people's ideas and opinions. Importance of roles and responsibility. To respect rules. We do not need a solution but it is the process that is important. We are an open door spiralling out into the world
member 2	YES	POSITIVE	structured programme, flexible to all situation	
member 3	YES	POSITIVE	different and interesting programme	
member 4	YES	POSITIVE	The course has been of high quality with very approachable course leaders. The group went on well together	
member 5	YES	POSITIVE	The course has been a long learning journey for myself and my setting.	
member 6	YES	POSITIVE	I think courses like this should be more widely advertised as one would like to continue learning more.	
member 7	NO	NEGATIVE		
TOTAL	20			

Table 5 shows the individual evaluations: 18/20 participants say that their expectations have been satisfied and evaluate the course positively; 1 participant (a coordinator of a Non Government Organization) contends that his expectations have not been satisfied, anyway evaluate the course positively; 1 participant (a member of an adult training institute), contends that his expectations have not been satisfied, also evaluates the course negatively.

The individual evaluations underline some positive features of the course: flexibility, development of the group, union of the group, interaction among members.

The groups evaluate the experience positively and they uses some sentences to define the result of the course.

The post-questionnaire reveals that teachers believe that:

(a) they have changed their roles. The course has given "an other way to act" and has showed that an "other education view is possible": they use a non-classical teaching scheme; they are not so impatient about results because the time to create a cooperative group is a long time.

(b) the form of communication with students is different: they underline the importance of encouraging students to think critically and reflectively about their learning processes and the importance to make a collective decision).

(c) the communication with colleagues has been modified (after the course, they consider more important to exchange ideas, opinions and knowledge, to control themselves during a discussion and to accept others and their ideas).

(d) the cooperation with colleagues permits an exchange of ideas and resources. Some of them

think that they had not time to share the results of the course with the colleagues.

(e) the organization of the lesson has been modified in a structured way.

(f) students' questions and observations are respected. Teachers report they had used "more hands-on" learning processes, on strategies and had better utilized cognitive and meta-cognitive questions and discussions with their students but also with their colleagues. In particular, participants underline the importance of the last part of the lesson as a moment of discussion and comparison: teachers observe and at the end guide the discussion on behaviours and processes.

(g) the aims of teaching and (h) the evaluation are changed: the evaluation is an individual evaluation to examine the personal point of start and not the point of arrive.

The best evaluations of the course are 8 mouths after the course, while after a short time (3 months) teachers say that they did not time to experiment the method and especially to spread it in their educational contest. When the teachers have the support of other colleagues in a collegial teaching team, they have more results (Ishler A. L. et al., 1998. Patterson M.E. et al., 1992). In other conditions, they feel alone with a lot of difficulties in applying the method.

In this case, they underline this fact as a problem or as a partial implementation of the results of the course. They think that group cohesion and a friendly relationship with colleagues is an important situation to work and sometime also to permit a permanent use of the method(Ishler A. L. et al., 1998)

These thoughts are very important because researches confirm that "teachers' approach ... may have important implications for the way in which children in the class are privileged or

marginalised by their teacher relationship” (Newberry M. & Davis H. A., 2008). Therefore, a positive collegial teachers’ approach is a condition to develop a direct participation of students.

An other situation of difficulty is when students are too young, for example in pre-school: the application is difficult because it is necessary to work for a long time on the communication skills.

Discussion

The results show that the structured training course has produced positive effects on participants. The course, through the simulation, has offered the occasion to have a meta-cognitive reflection about the role of the teacher as mediator in the learning process.

The participants have developed an important attitude: to pay attention to processes and to strategies more than contents and objective results. They have developed also an important social skill: to favourite an equal participation of each members of the group. Longitudinal data confirm that these are stabilized results.

They have understood that a group working/learning is better than an individual working alone. For this, reason, they have implemented Cooperative Learning in their educational context and have disseminated the method also involving possibly their colleague.

In line with several researches (Robins, 2004), results also reveal that teachers believe that it is important to use a structured method (planning activities, defining roles and rules, defining social aims) because they observe positive and effective results in learning processes: in all instruments of evaluation, participants confirm to have understood that the structured feature of the method is very important, but in different items they contend that the method is flexible, adaptable to different contexts.

Conclusion

The results support the conclusion that, such as students (Pohlman C., 1998), also teachers use Cooperative Learning more positively and effectively, if they actively participated in cooperative. The personal experience of Cooperative Learning is a positive point of start to implement and also to disseminate the method.

Naturally, this study is based on partial data: the training course is at the first step, because other sections are being made during the 2009 and the 2010; the group participating in the study is a

small group. For these reasons, the present study shows an exemplificative method to evaluate the effectiveness of the course, but it is necessary to support the theme with other data.

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