Learning to cooperate for cooperative learning

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Título: Aprender a cooperar para el aprendizaje cooperativo.

Resumen: Aprender a aprender cooperativamente requiere varios cambios tanto en los profesores como en los alumnos: en su percepción del aprendizaje, en sus actitudes hacia la enseñanza y el aprendizaje, y en sus comportamientos sociales y cognitivos en el aula. En este artículo se presentan algunas de las formas que se han desarrollado, a lo largo de varias décadas de investigación y práctica, para capacitar a los profesores ya los alumnos a adaptarse a esos cambios. En este proceso de cambio, los profesores y los alumnos están interconectados y son interdependientes y juntos llevan a cabo los pasos necesarios para crear una auténtica aula cooperativa.

Palabras clave: Métodos de aprendizaje cooperativo; actitudes de los profesores; habilidades cooperativas de los alumnos.

Abstract: Learning to learn cooperatively requires several changes for teachers and students: in their perception of learning, in their attitudes towards teaching and learning, and in their social and cognitive behaviors in class. This article presents some of the ways that decades of research and practice have developed to enable teachers and students to acquire and adjust to these changes. In the process of change teachers and students are interconnected and interdependent, and together carry out the steps needed to create an authentic cooperative classroom.

Keywords: cooperative learning methods; teachers' attitudes; students' cooperative skills.

Introduction

How can you tell when you're in a cooperative learning (CL) classroom? You see students sitting in pairs or in small groups of 3 or 4, and hear them help one another learn, share materials, share ideas, plan how to carry out a learning task. Groups of students in a cooperative classroom achieve learning outcomes, based on a common learning goal, that reflect each group member's unique contribution. When called upon to create something together large or small (e.g. write a few sentences in a specific grammatical tense, investigate a multifaceted problem, or help one another learn math), students experience the enrichment of achievement that is the outcome of learning cooperatively.

Cooperative learning (CL) is a generic pedagogy that is one of the most thoroughly researched approaches to education. Because most CL researchers are also educators they have developed a variety of methods (that consist of steps to be followed systematically), models (that can be followed or adapted flexibly), and short term procedures to facilitate learning together in small groups. Common to all CL methods, models, and procedures is that they organize students "to work in groups toward a common goal or outcome, or share a common problem or task, in such a way that they can only succeed in completing the work through behavior that demonstrates interdependence, while holding individual contributions and efforts accountable" (Brody & Davidson, 1998, p. 8).

As Brody and Davidson (1988) point out, all CL methods, models and procedures call for learners to work together on a task or learning activity that is designed specifically for group work and enables:

- Small-group student interaction that focuses on the learning activity;
- Cooperatively mutually helpful behavior among students;

- Positive interdependence in working together;
- Individual accountability and responsibility for outcomes of group work.

CL has always sought to structure group activities so that every individual member of the group can participate, contribute and benefit. Well-structured CL procedures enable students of various academic levels, diverse backgrounds and cultural heritages to enrich everyone's learning, based on each one's experience, knowledge, and understanding of the world, and create meaningful learning (Sharan, in press).

When does it make sense to study together with another person?

There are two general answers to this question. One is when the group task involves a group reward based on the learning progress of each group member; which means that a team's success depends on each individual member's learning, as in Student Team-Achievement Divisions ([STAD] Slavin, 1999, 2010). In this method teachers form heterogeneous groups whose goals and success can only be achieved if each member of the group learns the objectives being taught; as a result group members are motivated to help one another master the material.

Another answer to this question refers to learning assignments based on a question or a topic that does not have one predetermined answer or solution. To seek possible answers, information or solutions students have to engage in several learning and social behaviors: they exchange opinions about the topic, share and expand their understandings of content, discuss their plans for carrying out an assignment, and discuss how to integrate their outcomes. The most well-known models that incorporate these learning and social dynamics are Jigsaw (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978), Learning Together (Johnson, Johnson, & Holubec, 1998), Complex Instruction (Cohen, 1994), and Group Investigation (Sharan, Sharan, & Tan, 2013; Sharan & Sharan, 1992; Thelen, 1981). We will briefly describe each of

* Dirección para correspondencia [Correspondence address]: Yael Sharan. Group Investigation Projects (GRIP). 2 Hashomer St., Apt. 2. Ramat Hasharon 47209 Israel. E-mail: yaelshar@015.net.il these models before discussing some of the ways teachers can prepare themselves and their students for CL.

In Jigsaw members of "expert" teams, who represent their "home teams," work on academic material that has been broken down into sections. Each expert team studies their chosen (or allotted) section, plans how to present it to its members' the home teams. Each expert team member reports back to his or her home team, which then collaborates on putting together all parts of the Jigsaw (Aronson et al., 1978).

In Learning Together teachers design assignments and choose materials based on the academic and social objectives they set, determine group size, assign students to heterogeneous groups, and assign procedural roles such as facilitator, time keeper, and recorder (Johnson et al., 1998).

Complex Instruction (CI) calls for teachers to adapt existing material so that tasks involve students' multiple abilities, and assign competencies to low-status students. Learning tasks are challenging and open-ended without one specific solution, so that students can explore various solutions and examine them from different perspectives, based on their varying abilities and backgrounds. Students also learn to assume procedural roles (Cohen, 1994).

For a Group Investigation (GI) project the class is organized in heterogeneous or interest groups of students, who raise questions about a topic, seek answers and construct knowledge through individual and cooperative inquiry. Six stages serve as general guidelines for the model. Components of the model may be practiced and used separately. Implementation may combine other models, such as Jigsaw and Structures (Sharan et al., 2013; Sharan & Sharan, 1992; Thelen, 1981).

As its name implies The Structural Approach is not a systematic method or model; it consists of over 200 content-free "structures"—instructional strategies—that facilitate organizing group interaction. They may be used repeatedly in any content area and one or more times in a lesson, even in combination with other models. Each structure consists of a sequence of steps that organizes the interaction of students toward specific cooperative behaviors and learning outcomes. They are invaluable for setting the stage for carrying out CL models and methods (Kagan & Kagan, 2009).

Choosing a method or model

In addition to the methods and models named above there are other ways of organizing CL, such as peer groups (O'Donnell & O'Kelly, 1994), so that choosing a CL method or procedure may be a bit daunting. After all, most CL procedures have been well researched and proven to be effective, so how is a teacher to choose? Before "buying into" a model, method or procedure there are several factors worth taking into consideration:

 Which method, model or procedure is most suited to the content to be learned?

- Which social and learning skills are required? Have the students been prepared to work together and study in groups as called for by the method or model?
- Is the model suited to students' ages?
- How ready are the students to assume responsibility for their learning?
- How ready is the teacher to offer as much or as little structure and direction as the implementation of a specific procedure requires?
- How much time is available for the implementation of the model or procedure?
- How are groups formed?
- What is the optimum group size?
- Are there elements in the CL method, model or procedure that may conflict with local cultural norms?
- What kinds of rewards, if any, are recommended: individual or group grades?

Despite the different degrees to which CL elements are emphasized in the various methods and models, they are not mutually exclusive. In fact they can be seen as constituting a continuum based on the degrees of independence they afford group members in choosing what and how they will learn and the concomitant degrees of structure and direction the teacher has to provide. Many teachers introduce CL into their classrooms by organizing students in pairs, combining Structures in traditionally designed lessons taught with prescribed curricula, as well as implementing STAD and Jigsaw. These methods change the way material is learned without altering the material itself. When choosing a Structure, for example, the teacher looks for one most suitable for the learning goal he or she has in mind. If the task calls for decision making, for example, then a structure for decision making, such as Numbered Heads Together, may be chosen (Kagan & Kagan, 2009). Teachers can easily choose which Structure facilitates the academic and social objectives they want to promote for effective cooperative learning at any particular stage by referring to the chart of the clearly stated goal of each Structure (Kagan & Kagan, 2009).

In the more complex approaches, such as CI and GI, teachers plan and tailor cooperative learning lessons specifically for their students' interests and needs. In these models not all the learning material may be learned cooperatively, but the part that is—the part that presents a multifaceted problem—is either altered by the teacher (in CI) or constructed by the students (in GI). Both these models vary from the traditional transmission model of teaching in that not every student has to work on the same task, the final outcome of the groups' work cannot be specified in advance, and the quantity and pace of learning depend a great deal on the students' capabilities, preparedness and comfort with this type of learning.

By gradually increasing students' competence in CL and the teacher's confidence in guiding the process, the teacher increases the chances of successful implementation. Once students and teachers are comfortable with the various struc804 Yael Sharan

tures, methods and models, they may use them repeatedly and in varying sequences.

Increasing student participation and interaction. The cooperative learning methods and models described above, and others, offer many ways of increasing active student participation in the learning process by having students work together in small groups to help each other accomplish group learning tasks. There is a great deal of variety in the ways cooperative groups can be organized. Sometimes group members work together on projects or other open ended, creative activities, or they may work to help one another master specific academic content. Individual students may be responsible for a specific portion of the group's task, or all students may work on the same task. Groups may stay together for several months or they may be formed anew daily or once a week.

Some cooperative learning methods call for more teacher direction than others, but all of them enable students to interact, in varying degrees, and to talk to one another about what they think, know, and feel about what they're learning. In addition, when studying together in small groups, students help each other, and at the same time, develop self-direction and responsibility for their learning; many find a 'voice' they didn't know they had (Damini, in press). Pescarmona (in press) points out that, by enabling pupils to perceive themselves as an active part of the learning process, cooperative learning activities promote the creation of the classroom as a new public space, in which students are empowered to exercise their own voice.

It is well known that simply seating students in groups does not bring about learning together cooperatively. As Gillies and Haynes (2011) remind us, "It is only when students have been taught how to communicate that the benefits attributed to this approach to learning are realized" (p. 351). Therefore before and during the implementation of CL methods, models and approaches teachers have the responsibility of preparing students by developing "...the skills of learning to communicate effectively through listening, explaining, and sharing ideas but also those skills needed to plan and organize their work that give them the confidence to work more independently of the teacher" (Gillies and Haynes, 2011). After the task is completed, teachers guide groups in the process of reflection on how they worked together to achieve their goal, and how they can improve the way they work together, as discussed below.

A specific strategy that helps students interact effectively and increase their individual responsibility for the group's success is the assigning of roles. This way each group member has an opportunity to do his or her share in maintaining the group's progress (Baloche 1998; Cohen 1994; Kagan & Kagan, 2009; Sharan & Sharan, 1992). For example, one group member can be the reporter, who presents the group's conclusions to the class or teacher; another can be the recorder, who keeps track of group decisions; another—the time keeper, who can make sure group members are using

time well; and another—the coordinator, who helps the group stay on task. Over time group members rotate roles so that all students practice them and experience an added dimension to the individual responsibility involved in carrying out cooperative learning tasks.

The implementation of cooperative learning also requires teachers to acquire new skills: they break the mold of teaching 30 or 40 students as one whole group and take on the added role of guides and facilitators. They also have the added responsibility of designing learning activities that ensureas much as possible-genuine cooperation, and are suited to the students' level of cooperative skills. In effect teachers have a key role in ensuring that groups carry out their tasks effectively; they have to teach cooperative learning skills as well as design appropriate learning tasks. As Baloche (1998) emphasizes: "There is a reciprocal relationship between the skills students need to learn to work successfully in small groups and the kinds of learning experiences teachers design so that students have the opportunities to practice the skills they need to learn" (p. 153). Teachers have a three-fold responsibility: to model these skills in their own teaching, to inculcate them before implementing group work, and to continue developing the required skills at the same time they teach subject matter. And this, like all good teaching, calls for proceeding from the simple to the complex.

Setting the stage for cooperative learning

A wide array of strategies, developed over decades, is available today for teachers to help students acquire the appropriate cooperative social and academic skills (see Baloche 1998; Johnson et al., 1998). All of these are intertwined with teachers' attitudes and readiness for setting the stage for a cooperative learning classroom and cannot be effectively developed in isolation.

Ask questions, invite questions, listen, and reinforce what students say. The teacher's readiness to ask questions that have more than one answer, listen non-judgmentally to students' answers and reinforce their readiness to say what they think are among the most basic of a teacher's attitudes that contribute to the creation of a cooperative classroom climate. These can take many forms: ask questions that call for students to say what they know or think about a topic and listen to their answers respectfully; praise and reinforce what they say without repeating their words; ask students to react to what a classmate said before you do so. Practices like these will reduce the time spent on the game of "ping pong" between the teacher and individual students, and will facilitate to establish the foundation of an environment where listening to one another and respecting others' ideas is the norm. They also provide opportunities for the teacher to comment favorably on the number of ideas students express and enrich everyone's learning. Exercising these practices can be done as part of whole-class lessons, as preparation for pair or group work.

At the same time the teacher can invite students to ask questions. The conditions that effect students' ability to ask questions have been thoroughly researched by Gillies (2000) and Gillies and Haynes (2011). They found that teachers who implement cooperative learning and receive training in explicit strategic questioning strategies engage in verbal behaviors that mediate children's learning. Their studies also showed that the children in these teachers' classes gave more elaborate comments and answers. These findings reinforce the importance of teachers acquiring explicit questioning strategies so they can model them and teach them to their students for effective cooperative learning.

Modify teacher's centrality. When teachers encourage students to listen to one another, to ask questions about what they want to understand and to engage in discussion in pairs, they are taking the first step in modifying the teacher's role as the central focus of attention in the classroom. Even though this small step does not involve a major change in classroom organization, it is nevertheless significant for setting the stage for CL. For many teachers it may be a significant departure from the belief that their students' learning and achievement depends on constant direction and supervision.

In fact, in order to successfully organize authentic group work teachers enter into a new "contract" with their students: teachers ask questions with more than one answer, not to hear the answers they know but to learn what the students know or think, and the teacher listens nonjudgmentally to students' answers. For their part students slowly learn to trust that they may say what they know or think about a topic without being told it is wrong or inappropriate.

As teachers and students gradually live up to the terms of this new contract, classrooms are filled with a richer variety of answers and ideas. The turning point for many teachers is when they hear ideas that they had not anticipated. Often teachers experience an "aha" moment, when, after asking for 3 or 5 answers groups come up with 10 or more, some of which had not even occurred to the teacher. This moment convinces them of the power of CL more than any workshop or article. With practice teachers became convinced of the inherent heterogeneity of any classroom and of the potential contribution each individual child can make to learning, based on his and her understanding of the world, and interest in learning about it.

As mentioned above there are many helpful short term cooperative activities that call for students to talk together and exchange information and ideas without direct teacher intervention, such as Structures (Kagan & Kagan, 2009). In introducing a topic, for example, the teacher may ask students to sit in random groups and use one piece of paper, on which each student in turn will write one or two things he or she knows (or wants to know) about the topic. This Structure, called Roundtable, is a quick and easy way for teachers to learn what students know about the topic and what they

would like to learn (Kagan & Kagan, 2009). With this information available, teachers can easily design lessons that are more relevant to students' understanding and interest and therefore more meaningful. Roundtable may also be used to sum up a lesson or topic, which then becomes a form of evaluation of what was learned, again providing the teacher with relevant information, this time about what was learned and what needs to be reinforced.

Another useful activity for engaging students in discussion is the time honored procedure Think-Pair-Share (Lyman, 1981): teachers invite students to think of an answer to a question, talk about their answers in pairs and, finally, share their ideas with the class. This simple activity gives students a few seconds of 'wait time' to think on their own about their answers to the teacher's question; it generally ensures that they will have something to share with other students.

Incorporate students' answers in the lesson. When teachers listen carefully to students' answers they can point out their diversity and emphasize how all answers enrich the class' understanding and learning. This is another opportunity for the teacher to validate the importance of contributions by students who are shy or withdrawn and seem to 'have nothing to say.' When teachers refer to the answers as the lesson continues students' efforts are reinforced and they will be encouraged to continue to express their views. Students will also be convinced that the teacher is sincere when he or she invites them to offer and exchange their own ideas. By affording all group members an opportunity to contribute to the completion of a group task, cooperative learning creates conditions that help students acquire status and acceptance among their peers, regardless of the differences among them. With time and practice students and teachers realize that the different interests, backgrounds, values, and abilities of group members are in fact the group's greatest asset and the source of a potentially creative learning experience. The accumulated knowledge of group members becomes what Thelen (1981) called their "capital-a form of wealth which carries with it a mounting expectation of further interesting investments" (p. 153).

Establish basic rules. In a whole class traditional lesson the teacher talks most of the time and students typically raise their hands to get permission to answer a question. How are students to get used to the active participation in a cooperative learning classroom? The teacher can make it clear that active participation is based on certain rules of behavior, such as taking turns when speaking in a pair or group, listening respectfully to what others say, paraphrasing what others say before you express your own opinion, to mention a few. Baloche (1998) helpfully organizes the essential skills of cooperation in groups as "Getting together skills," skills for "Getting the job done and staying together," and "Getting it skills" that are useful for building understanding of academic material (pp. 148-149). Teachers would do well to explain

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the need for each skill and, in the spirit of cooperation, invite students to suggest additional standards that they think will contribute to smooth management of group work.

Conduct periodic reflection. To further set the stage for sustainable cooperative learning teachers conduct periodic reflection on the progress of implementation as part of the process of learning how to carry out effective cooperative learning. Reflection involves (a) looking back on how students have worked together and (b) looking forward to plan and set goals for the best ways they can continue working together (Baloche, 1998). A reflective discussion may begin with the teacher asking questions such as:

- a. What did the pair/group do well today? (Listen to one another? Help one another? Make sure everyone had a turn?)
- b. What did you find difficult?
- c. How can you improve how you get along (or carry out your assignment)?

In the lower grades the teacher can present a page that has a "happy face" and an "unhappy face" and ask the children to circle the one that shows how they feel about the group task or the interaction in the group. In the follow-up discussion the children are invited to specify what made them feel the way they did. Reflection may be an oral or a written activity.

As we have seen teachers' and students' preparation for CL are interconnected and therefore reflection is also an important tool for the teacher. Reflection enables teachers to direct and control their practice, and helps them decide if they are carrying out an authentic CL activity. By reflecting on what one does and on students' reactions, the teacher is better equipped to choose among those actions that are best suited to classroom reality. Reflection also facilitates the transformation of practice: when teachers weigh the effects of their experience in the classroom their conclusions may help them plan how to change their behaviors and actions accordingly. Teachers become accustomed to using their thoughts and observations about what goes on in the classroom as a vehicle for learning from and about their practice (Sharan, 2010).

Preparing teachers and students for learning cooperatively is not limited to any subject matter or age group. There is a wealth of experience and literature on the application of CL to all grade levels, and more recently on its application to higher education (Baloche,2011; Cooper, Robinson, & Ball, 2009; Sharan, 2012). A striking example is the application of CL to language teaching. The dynamic elements of CL which actively engage learners in a variety of communicative activities, such as listening to one another and paraphrasing others' comments to check for accurate understanding, make it especially compatible with the goals of communicative language teaching, so that it comes as no surprise that in many countries the first to adopt and implement CL are teachers of a second or foreign language. Their aim is to increase op-

portunities for active use of the new language and have students use language in real-life contexts and increase meaningful practice. In contrast to language teaching in the traditional classroom, where teachers do most of the talking, while implementing cooperative procedures students take turns producing language and comprehending language. Fushino (2011) describes how students' readiness for CL tasks in an English-as-a-foreign language classroom in Japan was enhanced and improved by the practice of basic CL skills, such as asking for and providing help, requesting and giving feedback, and disagreeing politely, together with various CL procedures appropriate for the foreign language classroom (Jacobs, Power, & Loh, 2002).

Cooperative learning in the intercultural class-room

The composition of today's classrooms is rapidly changing; more and more classrooms include students of various religious, ethnic, and cultural backgrounds. Therefore it would be amiss not to mention the role of CL in teaching the culturally diversified classroom. Again, teachers' attitudes play a crucial part in creating openness towards diversity (Damini in press). When the classroom is viewed as an intercultural setting, children of various religious, ethnic, and cultural backgrounds are "no longer regarded as a 'problem' or 'risk,' but as 'resources'" (Portera, 2008, p. 484). CL has always been based on heterogeneous group composition and CL procedures offer all learners the opportunity to harness these various "resources" in the pursuit of learning goals in an environment respectful of all contributions to learning. The culturally sensitive CL classroom creates a 'space' conducive to the exchange of ideas, for a coming together of different viewpoints and for an appreciation for alternative ways of thinking

CL emphasizes the potential contribution each individual child can make to learning, and therefore it is a most suitable candidate for establishing a reciprocal relationship with the field of intercultural education. The vast pool of CL teaching procedures offers teachers in the intercultural classroom multiple ways to actively engage their students' varied backgrounds and learning styles in the learning process. In addition to the implementation of the CL methods, models and procedures mentioned above, and many more, teachers can also design tasks and delegate learning roles that afford each group member an opportunity to do his or her share, thereby creating conditions that help students of different backgrounds and abilities gain status and acceptance among their peers (Cohen, 1994; Sharan & Sharan, 1992). Authentic, well designed and well executed CL methods, models and procedures encourage readiness to include members from different cultural and linguistic groups. From simple CL activities that require minimal interaction to complex models such as Group Investigation, CL creates learning opportunities that call for diverse skills and knowledge. With time and practice students and teachers realize that the different interests, backgrounds, values, and abilities of group members enrich the class' pool of resources for expanding knowledge.

The sense of community that is at the core of the CL classroom, nurtured by interpersonal communication and helping skills, is one important step in the attempt to address the loss of a sense of community that many immigrants feel in their new countries. Creating a sense of community is a principle that has always been at the heart of the cooperative classroom. Building community has been stressed in CL classrooms precisely because most Western societies have lost the feeling of mutual responsibility and help. Ironically, in CL classrooms in New Zealand, for example, Maori children learned anew how to cooperate, a quality they had lost after having assimilated into the dominant competitive culture that gives priority to the individual and to working in-

dependently. The attempt to redress the loss of a sense of community is appreciated today even outside the classroom, in many organizations and businesses that emphasize teamwork and collaboration. It has even spread to today's virtual teams that also require a solid foundation of mutual trust and collaboration if they are to function effectively.

By creating opportunities for the contribution of diverse perspectives to learning, as when carrying out simple CL procedures that invite multiple and diverse answers, the teacher establishes a balance between individual, pair and group work and creates a gradual and smooth transition from teacher directed learning to cooperative learning, where acceptance of diversity is the norm.

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