Cooperative Learning to Promote Human Rights

GEORGE JACOBS

When people think about how primary, secondary, and tertiary education can promote human rights, most think about content such as lessons on overcoming discrimination or on the right to a fair trial. However, teaching human rights is not only about the "what" but also the "how."

The how of teaching involves what is sometimes called the "hidden curriculum." Bigelow (1999: 243) defines it as "the values, habits, and beliefs that are imparted to students through the ways schools are structured and through the routines of school life." For instance, students may study democracy, but if all school decisions are made at the top—by the principal for the whole school and by the teacher for the whole class—and those below are supposed to obey blindly, the hidden curriculum is teaching students something very different from democracy: to follow instructions and not to question authority.

If we are going to successfully teach human rights, therefore, the medium must match the message: the way we teach should be consistent with what we teach. Many human rights-friendly teaching methods exist. I describe one: cooperative learning. An overview of cooperative learning will be presented, including history, research support, and theoretical foundations. Then principles of cooperative learning will be explained, with examples of how they can be applied in the classroom and connected with key human rights concepts.

Cooperative Learning

In cooperative learning activities, small groups of two or more students collaborate to reach group goals. Cooperative learning, however, is more than just asking students to work together. It embodies principles and techniques to help students work together more effectively and involves a conscious and persistent effort to create a sense of community within a class of students and beyond (Forest 2001). Students from university to primary school, and in any subject area can participate in cooperative learning. (See Appendix for a list of web sites on cooperative learning.)

History

The idea that people benefit by cooperating with each other—that "two (or more) heads are better than one" and that "many hands make light the work"—goes back thousands of years and has roots in many cultures, from the ideas of Aristotle in ancient Greece to those of Buddha in ancient India and Confucius in ancient China. Elsewhere in Asia, the *bayanihan* spirit in the Philippines and *gotong royong* in Indonesia and Malaysia are examples of a tradition of cooperation.

Research on cooperation among students can be traced back to the 19th century. However, the term cooperative learning—collaborative learning is a related term (Bruffee 1999)—came into prominence in the 1970s when a great deal of practical and theoretical work began, work

that continues enthusiastically to this day. Today, student-student collaboration has gained a great deal of stature in education, with ministries of education and educators' organizations the world over strongly recommending its use as a key teaching method.

Research

Cooperative learning is one of the best-researched education methods, with studies done in a wide range of countries, at all levels of education, and in many different subject areas (Johnson, Johnson, and Stanne 2000; Slavin 1995). This research suggests that by participating in cooperative learning, students can benefit in the following areas:

- higher academic achievement;
- more active involvement in and responsibility for their own learning;
- greater motivation to learn;
- enhanced interethnic relations;
- increased ability to appreciate and consider a variety of perspectives;
- greater acceptance of academically and physically challenged students;
- improved collaborative skills;
- increased liking for school; and
- improved student attitudes to learning, school, peers, and self.

Theory

A variety of theories support the use of cooperative learning.

- The study of social psychology and group dynamics helps us understand why some groups succeed while others fail (Allport 1954; Aronson, http: / / www.jigsaw.org / index.html; Johnson and Johnson 1999). A key concept is interdependence among people. When we feel positively interdependent with others, we believe a positive correlation exists between what happens to others and what happens to us: a gain for group mates is a gain for us, too. Conversely, when we feel negatively interdependent with others, we believe a negative correlation exists between what happens to them and what happens to us: a gain for group mates is a loss for us. A third possibility is a lack of feeling interdependence with others: no correlation exists between what happens to others and what happens to us, so a gain or loss for group mates has no bearing on whether we ourselves gain or lose.
- In developmental psychology, Piaget (1967) illustrates how intellectual development takes place via interactions with others. A key concept is disequilibrium: when someone presents a view different from our own, we may rethink our view and develop a better understanding of the world. Writing from the standpoint of developmental psychology, Harris (1998) claims that peers' influence on children and adolescents is stronger than that of parents and other adults. For instance, children's choice of language and accent is based more on those of their peers than of their parents or teachers.
- Cognitive psychology also values interaction as a means to promote deep thought and encourage students to examine their own thinking processes. For instance, Webb and Farivar (1994) explore how giving explanations, rather than just answers, to peers and receiving explanations from them promotes learning.
- Behaviorists, too, see value in peer interaction, because peers can be an important source of motivation: students may want to study harder, for example, to live up to their obligations as group members (Slavin 1995). Group mates offer another potential source of positive reinforcement.
- Vygotsky (1978) is perhaps the most cited scholar to support the idea of learning as a social process. According to his sociocultural theory, everything we learn appears first on the social plane between

people and then on the individual plane. We can learn not only from those more expert than ourselves but also from those at or below our current level. For instance, Koschmann (1996) describes how scholars collaborate to construct knowledge and states that students of all ages and levels—and, after all, scholars are students too, and vice versa—can do the same.

Cooperative Learning Principles and Human Rights

Cooperative learning is an umbrella term for a fairly diverse body of concepts and techniques to help maximize the benefits of cooperation among students. Various principles of cooperative learning have been put forward (e.g., Baloche 1998; Johnson and Johnson 1999; Kagan 1994; Slavin 1995). Next, we discuss eight of these cooperative learning principles (Jacobs, Power, and Loh 2002) and how they connect with education for human rights.

Cooperative Learning Principle 1: Heterogeneous Grouping

Cooperative learning groups are mixed based on one or more of a number of variables, including past achievement, sex, ethnicity, social class, religion, personality, age, and diligence. To achieve heterogeneity, teachers can group students, or students can form their own groups. Interaction in heterogeneous groups has a number of benefits such as encouraging peer tutoring, providing a variety of perspectives, and helping students know and like others different from themselves and appreciate diversity.

Coping with diversity is not easy. Prejudices against classmates can easily form in students' minds or be brought to the classroom from outside school, with discrimination and hostility as a result. Integration offers one means of bringing students together. However, just because students are in the same class with students different from themselves does not mean that they will necessarily interact.

Cooperative learning can help. When students are in their heterogeneous groups working together toward a common goal, prejudices can be overcome and stereotypes reexamined. This solution fits with Article 2 of the Universal Declaration of Human Rights (UDHR): "Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."

Students should have some input into cooperative learning groups. However, students' first inclination may be to form groups with those most similar to themselves. Teachers should then remind them of the benefits of heterogeneity and of the importance of learning to work with those different from themselves. That said, while heterogeneous groups are most often recommended for cooperative learning, sometimes homogeneous groups—for instance, all female and all male—may come together briefly to share ideas.

When we opt for heterogeneous groups, we may want to spend some time on ice-breaking or team-building activities because, as Slavin (1995) notes, the heterogeneous combination of students would not likely have been created but for our intervention. This relates to Article 3: "Everyone has the right to life, liberty and security of person." Team-building activities promote a feeling of trust, a feeling that it is okay to make mistakes, okay to ask for help. Students feel secure enough to devote themselves to learning (Schniedewind and Davidson 2000).

A simple team-building activity is the Same Game. It uses the cooperative learning technique, Forward Snowball (Kearney 1993). In countries without snow, this technique can be called Forward Candy Floss.

- Each member of a group of four lists 12 likes or dislikes.

- Pairs explain their lists to each other, make a list of eight common likes or dislikes, and can add ones that were not on either person's list.
- Two pairs repeat the same process, trying to come up with a list of four common likes or dislikes.
- Groups can create a team name, slogan, etc. based on their commonalties.

By identifying commonalties, students come to recognize that they are not so different from their group mates.

Cooperative Learning Principle 2: Teaching Collaborative Skills

Collaborative skills are those needed to work with others. Students may lack them, the language to use the skills, or the inclination to put them into practice. Article 1 states: "All human beings are born free and equal in dignity and rights." The use of collaborative skills such as listening attentively to others, disagreeing politely, and waiting patiently is just one of many ways we can treat each other with dignity and in a spirit of fraternity.

Cohen (1984: 39) believes that "[i]t is a great mistake to assume that children (or adults) know how to work with each other in a constructive collegial fashion." Therefore, teachers may want to teach collaborative skills. Here is the six-step procedure that Johnson and Johnson (1999) recommend for teaching collaborative skills, one skill at a time.

Step 1—Students understand the need for the selected collaborative skill.

For instance, students recount their own experiences, in and out of school, in which the skill was important. With the skill of listening attentively to others, students might tell of a time when they appreciated the way a friend listened to them tell about a problem.

Step 2—Students understand what it means to use the collaborative skill.

If the highlighted skill is listening attentively, the class can construct a T-chart (see example below) that shows what the skill looks like (gestures, facial expression, posture) and sounds like (words or other sounds, written in language students might use). These T-charts can be posted on a wall or written on the board. What a collaborative skill looks like will differ from culture to culture as will, of course, the words used.

Listening Attentively	
Looks like	*Sounds like*
Nodding	Hmmm, right, ahuh, yes
Eye contact with speaker	Asking questions, "Why did you do that?"
Leaning slightly forward	Paraphrasing what was said, "In other words…"
Looking alert	Agreeing/disagreeing: "That's a point, but I'm not sure if I agree."

Step 3—Students first practice the collaborative skill in isolation from subject content.

Students concentrate on just the collaborative skill, not on the regular class content. Because the activity is not connected to the content, students can concentrate on the collaborative skill. For example, students can role-play positive and negative examples of the collaborative skill.

Step 4—Students practice the collaborative skill while learning class and subject content.

When students do a group activity, they try to incorporate the skill.

Step 5—Students discuss their use of the collaborative skill.

During and / or after a group activity, students discuss how often and well they are using or used the collaborative skill. One student per group can serve as observer and note how often group members use a skill and what they say or do while using it. Some keys to successful discussions are allowing sufficient time for them to take place and setting clear expectations as to their purpose.

The teacher can play an important role as an observer. The teacher's presence helps remind the students to use the skill; when we aren't around, they may forget. Remember, initially it's to be expected that students will use the skill in an artificial way. It takes a while for any new skill to feel natural.

Students can also use rating scales or questionnaires to debrief their use of a selected collaborative skill. Here are examples:

> I did a good job of listening attentively to others
>
> Strongly Disagree Disagree Not Sure Agree Strongly Agree
>
> One thing that _____ (name of group mate) did to listen attentively was: _____
>
> Our group listened attentively by: _____ _____

Step 6—We persevere in helping students develop the skill.

Students need to persevere in learning and using the skill in a natural, not artificial, way.

Ways students can keep the skill on their minds include the following:

- student reports on their use of the skill outside of class,
- awareness of use of the skill by the teacher,
- continued focus on the skill over time, and
- use of literature, such as autobiographies and short stories, in which the skill appears.

Cooperative Learning Principle 3: Group Autonomy

This principle encourages students to look to themselves, their group mates, and their other classmates for resources rather than relying solely on the teacher. As Wajnryb (1990: 18) notes:

> Classroom organization in the form of group work allows for the development of a small learning community.… There is also the factor of group responsibility for the work produced.… The creation of small learning communities means increased participation and learner co-operation. This injection of 'democracy' into the classroom allows learners to complement each others' strengths and weaknesses.

Article 20 states: "Everyone has the right to freedom of peaceful assembly and association." Students used to be told: "Eyes on your own paper" and "No talking to your neighbor." Students were supposed to work alone. Any type of assembly of students was seen as causing trouble. Now, with cooperative learning, students assemble in groups to learn.

Article 20 also states: "No one may be compelled to belong to an association." It is not unusual for one or two students to be reluctant to take part in cooperative learning for a variety of reasons. While teachers should respect this wish, they should find out the reasons behind it and see if these can be addressed. For instance, a student may have difficulty getting along with peers. In this case, doing team-building activities and inviting that student to join a group with peers who are skilled at collaboration may make group activities more attractive.

By coming together, students have more power. Canagarajah (1999) highlights how stu-

dents can use the power of groups to make their voices heard and to have a greater role in what is taught and how. Article 21 states: "Everyone has the right to take part in the government of his (sic) country, directly or through freely chosen representatives." By joining together to form groups and by collaborating with group mates as well as with other groups, students have a better chance to take part in decision making in the classroom and other aspects of education.

Cooperative Learning Principle 4: Simultaneous Interaction

In many classrooms, the teacher does 80% or more of the talking. The other 20% or less of class time is divided among students who usually speak one at a time when called on by the teacher. This is called sequential interaction. In contrast, during group activities, one student per group is, one hopes, speaking. In a class of 48 divided into groups of 4, 12 students speak simultaneously. Thus, the term "simultaneous interaction" (Kagan 1994). If the same class is working in groups of 2, even more students—24—may be speaking simultaneously.

Article 19 of UDHR states: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." When a class interacts simultaneously, students have a great deal more opportunity to express themselves. This right of expression lays a key part of the foundation for a democratic classroom.

All cooperative learning techniques encourage simultaneous interaction. A simple example is the technique Circle of Speakers (Jacobs, Power, and Loh 2002). This can be done in groups of two or in larger groups.

- Students have a number. For instance, in a group of four, the numbers would be 1, 2, 3, and 4.
- Each group member takes a turn to speak, going around the circle.
- When all group members have spoken, the first group member speaks again.
- The teacher calls a number and students with that number share with the class an idea from one or more of their group mates.

Cooperative Learning Principle 5: Equal Participation

Although group activities provide opportunities to express ideas, sometimes these opportunities are not evenly distributed within the group, which might be dominated by one or two members. Article 23 states: "Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment." Students mainly learn and help others to learn. As groups are important to learning, all students should be able to participate in group activities.

Cooperative learning offers many techniques to promote equal participation in groups (Kagan 1994). For example, a companion technique to Circle of Speakers is the Circle of Writers (Jacobs, Power, and Loh 2002), where group mates write rather than speak. The Circle of Writers has two versions. In the first, each group has one piece of paper, and members take turns writing on it. In the other version, each member has a piece of paper, and the pieces circulate around the group with each member writing on each piece.

Groups can also do multiple-ability tasks (Cohen 1994). Based on the concept of multiple intelligences (Gardner 1983; Kagan and Kagan 1998)—that there are many ways to be intelligent and that we can increase all the various intelligences—group tasks can allow members to learn in ways they feel comfortable with and to be the star of the group, helping the others. While most school tasks focus on the use of language, logic, and numbers, multiple-ability tasks also bring in music, drawing, visualization, hands-on activities, role play, opportunities for reflection, and chances to work with

others. By using the talents of all group members, multiple-ability tasks give everyone a chance to lead the group, minimizing status hierarchies that might develop in groups and the classroom.

Cooperative Learning Principle 6: Individual Accountability

Individual accountability stresses that all students have the responsibility to take part in the group. When we try to encourage individual accountability in groups, we hope that no one will attempt to avoid doing their share of the work. This fits with Article 29: "Everyone has duties to the community in which alone the free and full development of his (sic) personality is possible."

One cooperative learning technique to get everyone involved is Question-and-Answer Pairs (Johnson and Johnson 1991).

- Both members of a pair write questions, which can be of many types, including review questions or questions about content currently being studied. This technique also provides a good opportunity for students to learn how to ask thinking questions.
- Students write answers to their own questions.
- Students exchange questions—but not answers—and answer each other's questions.
- Students compare answers. Part of this comparison involves stating the evidence for their answers.

Cooperative Learning Principle 7: Positive Interdependence

This principle lies at the heart of cooperative learning. Members feel that what helps one member helps the others, and that what hurts one member hurts the others. Positive interdependence is the "all for one, one for all" feeling that leads group members to want to help each other, to collaborate to achieve their common goal.

All cooperative learning techniques foster positive interdependence, but they do so in different ways:

- *Role-positive interdependence*

Group members can take on a variety of rotating roles to help their group succeed. Some roles are of the housekeeping type such as Timekeeper, who reminds the group of time limits, and Sound Hound, who tells the group if they are being too loud. Other roles involve more thinking. The Questioner asks group mates questions to foster deep thinking. Too much of education focuses on routine, rote learning. Moving toward deep thinking, such as creativity, fits with Article 26: "Education shall be directed to the full development of the human personality." Students cannot make use of the wonderful instrument that is the human brain if education consists only of activities that exercise so little of the brain's potential.

The Checker ensures that everyone in the group has understood the subject being worked on. The Checker is crucial because a group's job is not done when an assignment is finished, whether completing a set of mathematics problems or doing a project presentation. The group's number-one job, the one that must be completed before a group is really finished, is to strengthen all members, so that they all have the understanding and skills to complete the mathematics problems or do the project presentation on their own.

- *Resource-positive interdependence*

To promote positive interdependence via resources, each member has unique resources that they must share for the group to succeed. Jigsaw (http: / / www.jigsaw.org / index.html) is a well-known cooperative learning technique that uses resource positive interdependence. The original version of Jigsaw works like this.

- *Step 1*—Students' original groups of four are called home teams. All members receive different information (for example, a section from the textbook) or find their own.

This is their piece of the jigsaw puzzle. For instance, one member might have information on the habitat of frogs, another on their anatomy, a third on their feeding and reproductive habits, and the last member on threats to the survival of frogs.

- *Step 2*—Students leave their home teams and form expert teams composed of two or three classmates from other groups who have the same piece of information. The role of the expert teams is to understand their piece and prepare to teach it to their home team members.
- *Step 3*—Students return to their home teams and take turns teaching their piece. Group mates ask questions and discuss the presentation.
- *Step 4*—Students take an individual quiz based on information from all four pieces or work together to do a task that requires knowledge taught by all four home team members.

- *External challenge-positive interdependence*

The group works to overcome a challenge. For instance, members might work together to decrease prejudice against physically challenged students or to reduce the amount of waste the school generates. Alternatively, all the groups in the class can work together to improve on their average score on the last quiz.

Cooperative Learning Principle 8: Cooperation as a Value

This principle brings us back to the beginning of the article when we contrasted the what to the how of learning. So far, we have discussed how cooperative learning promotes human rights. Cooperation as a value involves the content that students work on in their groups. Cooperation as a value flows naturally from the most crucial cooperative learning principle—positive interdependence. Cooperation as a value takes the feeling of "all for one, one for all" and expands it beyond the group to encompass the whole class, the whole school, on and on, bringing in increasingly greater numbers of people who wish to cooperate, either directly or indirectly, either in person or from a distance.

Human rights fits here perfectly. If we care about our fellow humans, we want them to enjoy the same rights we want for ourselves. Working to understand and promote human rights offers an endless supply of topics for students to collaborate on, in all subject areas, not just in the social sciences. For instance, in mathematics, students can use data to calculate the number of people who have access to drinkable water. In science class, students can study what makes water fit for drinking. In language class, students can write letters and brochures, draft petitions, and prepare speeches as part of an effort to increase access to clean water.

Conclusion

Article 1 of UDHR states that humans "are endowed with reason and conscience and should act towards one another in a spirit of brother[sister]hood." Cooperative learning allows students to bring alive and nurture this spirit of concern for others everyday as they learn together.

Unfortunately, students may not be adept at collaboration. They may want to listen only to the teacher, believing that their group mates have nothing to offer them. They may cling to old beliefs that teaching means talking, and when teachers are not up in front of the class talking, they are not teaching. These and many other obstacles lie in the path of cooperative learning.

If students cannot read, do not see the importance of reading, and do not enjoy reading, we do not ignore reading. Instead, we try all the harder to help them learn to read, to appreciate why it is important, and to come to love it. The same should be true for cooperation. If we hope to see a world in which people act toward one another in the spirit of fraternity, we need

to help students learn to cooperate, to see the vital need for cooperation, and to enjoy collaborating with others, including their teachers, as we work for a world that fulfills the vision of UDHR.

References

Allport, G.W. 1954. *The Nature of Prejudice*. Cambridge, MA: Addison-Wesley.

Aronson, E. (downloaded, 18 April 2002). *The Jigsaw Classroom*. http://www.jigsaw.org/index.html

Baloche, L. 1998. *The Cooperative Classroom: Empowering Learning*. Upper Saddle River, NJ: Prentice Hall.

Bigelow, B. 1999. Probing the Invisible Life of Schools. In C. Edelsky (ed.), *Making Justice Our Project*. Urbana, IL: National Council of Teachers of English.

Bruffee, K.A. 1999. *Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge.* 2nd ed. Baltimore, MD: Johns Hopkins University Press.

Canagarajah, A.S. 1999. Safe Houses in the Contact Zone: Coping Strategies of African-American Students in the Academy. In Austin, K. (ed.), *Trends and Issues in Postsecondary English Studies.* Urbana, IL: National Council of Teachers of English.

Cohen, E. 1994. *Designing Groupwork: Strategies for the Heterogeneous Classroom*. 2nd ed. New York: Teachers College Press.

Dewey, J. 1929. *Democracy and Education*. New York: Macmillan.

Forest, L. 2001. *Crafting Creative Community: Combining Cooperative Learning, Multiple Intelligences, and Nature's Wisdom*. San Clemente, CA: Kagan Publications.

Gardner, H. 1983. *Frames of Mind: The Theory of Multiple Intelligences.* New York: Basic Books.

Harris, J.R. 1998. *The Nurture Assumption: Why Children Turn Out the Way They Do*. New York: The Free Press.

Jacobs, G.M., M.A. Power, and W.I. Loh. 2002. *The Teacher's Sourcebook for Cooperative Learning: Practical Techniques, Basic Principles, and Frequently Asked Questions*. Thousand Oaks, CA: Corwin Press.

Johnson, D.W., and R.T. Johnson. 1991. *Cooperative Learning Lesson Structures*. Edina, MN: Interaction Book Company.

———. 1999. *Learning Together and Alone: Cooperative, Competitive and Individualistic Learning.* 5th ed. Boston: Allyn and Bacon.

——— and M.B. Stanne. 2000. *Cooperative Learning Methods: A Meta-Analysis.* http://www.clcrc.com/pages/cl-methods.html.

Kagan, S. 1994. *Cooperative Learning*. San Juan Capristrano, CA: Kagan Cooperative Learning.

——— and M. Kagan. 1998. *Multiple Intelligences: The Complete MI Book.* San Clemente, CA: Kagan Publications.

Kearney, P. 1993. *Cooperative Learning Techniques*. Hobart, Tasmania: Artemis Publishing.

Koschmann, T. (ed.) 1996. *CSCL: Theory and Practice of an Emerging Paradigm*. Mahwah, NJ: Lawrence Erlbaum.

Piaget, J. 1967. *Biologie et Connaissance*. Paris: Gallimard.

Sapon-Shevin, M. 1999. *Because We Can Change the World: A Practical Guide to Building Cooperative, Inclusive Classroom Communities.* Boston: Allyn and Bacon.

Schniedewind, N., and E. Davidson. 2000. Differentiating Cooperative Learning. *Educational Leadership 58* (1), http://www.ascd.org/author/el/2000/september/schniedewind.html (retrieved 17 April 2002).

Slavin, R.E. 1995. *Cooperative Learning: Theory, Research, and Practice.* 2nd ed. Boston, MA: Allyn and Bacon.

Vygotsky, L.S. 1978. *Mind in Society.* Edited by M. Cole, V. John-Steiner, S. Scribner, and E. Souberman. Cambridge, MA: Harvard University Press.

Wajnryb, R. 1990. *Grammar Dictation*. Oxford: Oxford University Press.

Webb, N.M., and S. Farivar. 1994. Promoting Helping Behavior in Cooperative Small Groups in Middle School Mathematics. *American Education Research Journal* 31, 369–395.

APPENDIX
Web Sites on Cooperative Learning

1. International Association for the Study of Cooperation in Education (IASCE). Contains newsletter, links to sites, and other resources on cooperative learning, and news of coming events such as conferences.

www.iasce.net

2. Cooperative/Collaborative Learning

By Susan Ledlow and Neil Davidson. Offers a number of articles on aspects of cooperative/collaborative learning such as models, theories, and research; classroom contexts; lessons and activities; and faculty training and development.

http://www.bestpractice.net/FMPro?-db=null.fp5&-format=/CLHE/CLHE.htm&-view

3. Success for All

The Success for All Foundation is a not-for-profit organization dedicated to the development, evaluation, and dissemination of proven reform models for pre-, elementary, and middle schools, especially those serving children at risk. Cooperative learning is a key component. The foundation was established by Robert Slavin and his colleagues.

http://www.successforall.net/

4. Cooperative Learning Center at the University of Minnesota (US)

The center offers research updates, a Q&A section, and many publications and other materials on cooperative learning. Co-directors are Roger T. Johnson and David W. Johnson.

http://www.clcrc.com/

5. Kagan Cooperative Learning

This site offers a newsletter, a Q&A section, workshop information, and the chance to buy lots of materials on cooperative learning and related topics, e.g., *Multiple Intelligences*, by Spencer Kagan and his colleagues.

http://www.kagancooplearn.com/

6. The Cooperative Learning Network

The network is an association of colleagues at Sheridan College (US) who model, share, support, and advocate the use of cooperative learning. The network has published the TiCkLe (Technology in Cooperative Learning) Guide.

http://www.sheridanc.on.ca/coop_learn/cooplrn.htm

7. Computer-Supported Collaborative Learning

This site contains papers from a 1995 conference.

http://www-cscl95.indiana.edu/cscl95/toc.html

8. Hong Kong Cooperative Learning Center

The center works with universities and schools throughout Hong Kong as well as in the People's Republic of China and elsewhere in Asia. The web site includes a newsletter and publications by scholars associated with the center. The principal investigator is Dean Tjosvold.

http://www.ln.edu.hk/hkclc/

9. Program for Complex Instruction, Stanford University (US)

This site features the work of Elizabeth Cohen, Rachel Lotan, and their colleagues, focusing on the sociology of cooperative learning groups, in particular the treatment of status differences among group members.

http://www.stanford.edu/group/pci/

10. Centre for the Study of Learning and Performance

This is a research center at Concordia University, Canada. Its goal is to study and promote effective teaching/learning strategies through active association with schools, administrators, and teachers, particularly in cooperative learning and integrated technology.

http://doe.concordia.ca/cslp/Try.htm

11. Mid-Atlantic Association for Cooperation in Education (MAACIE)

This organization promotes cooperative learning in mid-Atlantic United States. The site includes articles from MAACIE's newsletter.

http://www.geocities.com/~maacie/

12. Cooperative Learning in Undergraduate Mathematics Education (CLUME)

The Mathematical Association of America's Project CLUME is a program for postsecondary mathematics instructors. The site contains an electronic newsletter, math texts suitable for cooperative learning classrooms, 10 guidelines for students doing group work in mathematics, suggestions for designing and giving cooperative learning workshops, and responses to a survey on cooperative learning.

http://www.uwplatt.edu/~clume/

13. Perspectives on Hands-On Science Teaching

By David L Haury and Peter Rillero. See the section, "What are some strategies for helping students work in groups?"

http://www.ncrel.org/skrs/areas/issues/content/cntareas/science/eric/eric-toc.htm

14. The Jigsaw Classroom

This site contains information on Jigsaw, one of the oldest and best-known cooperative learning techniques. Featured are the history of Jigsaw, how to implement it, troubleshooting ideas, a list of books and articles about it, and information on recent related work by Eliot Aronson, one of the originators of the technique.

http://www.jigsaw.org/index.html

15. Richard Felder's Homepage

Richard teaches engineering at North Carolina State University (US). Many papers here are related to cooperative learning colleges and universities.

http://www2.ncsu.edu/unity/lockers/users/f/felder/public/RMF.html

16. Ted Panitz's Homepage

Ted Panitz teaches mathematics at Cape Cod Community College (US). His page includes two E-books—one on cooperative learning and one on *Writing Across the Curriculum*. Also included are some wide-ranging internet discussions that Panitz has put together across several lists.

http://home.capecod.net/~tpanitz

17. Pete Jones' Homepage

Pete Jones is head of Modern Languages at Pine Ridge Secondary School in Ontario, Canada, and presents cooperative learning strategies that he and others have developed.

http://www.geocities.com/Paris/LeftBank/3852/index.html

18. George Jacobs' Homepage

See the cooperative learning section.

www.georgejacobs.net

19. ERIC

If you go to http://searcheric.org/ and type in "cooperative learning," you will get over 1,300 hits. That should keep you busy for a while.