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Cooperative Learning To Promote Human Rights

Introduction

When people think about how education at the primary, secondary, and tertiary levels can promote human rights, most people think about the content. For example, they think about lessons on topics such as overcoming discrimination or the right to a fair trial. However, teaching for human rights is not only about the 'what', the content of teaching. It also concerns the 'how', the methods of teaching.

The how of teaching involves what is sometimes called the 'hidden curriculum' of education. Bigelow (1999, p. 243) defines hidden curriculum 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 about democracy in their textbooks, but if all the decisions in the school are made at the top - by the principal for the whole school and by the teacher for the whole class - and the people below are supposed to blindly obey, the hidden curriculum is teaching students something very different from the democracy talked about in their textbooks. The hidden curriculum is teaching them to follow instructions and not to question authority.

Thus, if we are going to successfully teach human rights, the medium must match the message. In other words, the way we teach should be consistent with the ideas of human rights that we are teaching as content. Many human rights friendly teaching methods exist. This article describes one of them: cooperative learning. First, an overview of cooperative learning will be presented including history, research support, and theoretical foundations. Then, in the main part of the article, principles of cooperative learning will be explained, with examples of how these principles can be enacted in the classroom, and with connections between the principles and key concepts in human rights.

Background on 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. Cooperative learning embodies principles and techniques for helping students work together more effectively. It involves a conscious and persistent effort to create a sense of community among a class of students and beyond (Forest, 2001). Students of all levels of education, from university to primary school, and in any subject area can participate in cooperative learning groups. (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 Confucious in ancient China. Elsewhere in Asia, the Bayahian Spirit in the Philippines and Gotong Royong in Indonesia and Malaysia are other 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 which continues enthusiastically to this day. Today, student-student collaboration has gained a great deal of stature in education, with its use as a key teaching method being strongly recommended by ministries of education and educators' organizations the world over.

Research

Cooperative learning is one of the best-researched methods in all of education, with studies done in a wide range of countries, at all levels of education, and in many different subject areas (Johnson, Johnson, & Stanne, 2000; Slavin, 1995). This research suggests that by participating in CL, 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
- Improved student attitudes toward learning, school, peers, and self

Theory

A variety of theories of learning 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 & Johnson, 1999). A key concept here 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, i.e., a gain for groupmates 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, i.e., a gain for groupmates is a loss for us. A third possibility is a feeling that there is no interdependence with others. In this case, we believe that no correlation exists between what happens to others and

what happens to us, i.e., a gain or loss for groupmates has no bearing on whether we ourselves gain or lose.

- In developmental psychology, Piaget (1967) illustrates how intelligence develops via interactions with others. A key concept here is disequilibrium. This means that when someone presents a view different from our own, the lack of fit between their view and ours may cause us to rethink our view. As a result of this rethinking, we can 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, she states that children's choice of language and the accent they use when speaking is based more on the language and accent used by peers than on how parents or teachers speak.

- Cognitive psychology also values interaction as a means of promoting deeper thought and encouraging 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, e.g., students may want to study harder in order to live up to their obligations as group members (Slavin, 1995). In addition to the teacher, groupmates offer another potential source of positive reinforcement.

- Perhaps the scholar who nowadays is most often cited in support of the idea of learning as a social process is Vygotsky (1978). According to Vygotskian 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 Connections to Human Rights

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

Cooperative Learning Principle 1: Heterogeneous Grouping.

The principle of heterogeneous grouping means that cooperative learning groups are mixed on one or more of a number of variables including past achievement, sex, ethnicity, social class, religion, personality, age, and diligence. In order to achieve heterogeneity, teachers can form the groups, or students can form their own groups, keeping in mind the need for heterogeneity. Interaction in these heterogeneous groups are believed to have a number of benefits, such as encouraging peer tutoring, providing a variety of perspectives, and helping students to come to know and like others different from themselves and to appreciate the value of diversity.

Coping with diversity is not easy. Prejudices against classmates different from themselves can easily form in student minds or be brought to the classroom from outside of school, with discrimination and hostility as a result. Integrated schools offer 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 with and come to know a variety of classmates.

This is one area in which cooperative learning can help. When students are in their heterogeneous groups working together toward a common goal, prejudices can be overcome and stereotypes can be reexamined. This means of addressing discrimination fits with Article 2 of the Universal Declaration of Human Rights which states *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*.

When cooperative learning groups are formed, students should have some input. However, students' first inclination may be to form groups with classmates most similar to themselves. In this case, teachers should 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 the type most often recommended for cooperative learning, there is also a place sometimes for homogeneous groups in which students who are similar in one way another – for instance, all female and all male groups – come together on a short-term basis to share ideas.

When we opt for heterogeneous groups, we may want to spend some time on ice breaking (also known as teambuilding) activities, because as Slavin (1995) notes the resulting combination of students is likely to be one that would never have been created had it not been 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 within groups, a feeling that it is okay to make mistakes, okay to ask for help. When trust exists in cooperative learning groups, students feel the security they need to devote themselves to learning (Schniedewind & Davidson, 2000).

Here is a simple teambuilding activity called 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 a total of twelve likes or dislikes.

♦ Pairs explain their lists to each other and then make a list of eight common likes or dislikes. They 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 groupmates.

Cooperative Learning Principle 2 – Teaching Collaborative Skills.

Collaborative skills are those skills needed to work with others. Students may lack these skills, the language involved in using the skills, or the inclination to put the skills into practice. Article I states that *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 the many ways that we can treat each other with dignity and in a spirit of fraternity.

Cohen (1984, p. 39) believes that, "It 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 6-step procedure that Johnson & Johnson (1999) recommend for teaching collaborative skills, one skill at a time.

Step 1 - Students understand the need for the collaborative skill that has been selected. 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 that a friend had listened to them tell about a problem they were having.

Step 2 - Students understand what is 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, and, of course, the words used will differ from one language to another.

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 an point, but I'm not sure if I agree"

Step 3 - Students first practice the collaborative skill in isolation from class/subject content.

This involves activities in which students concentrate on just the collaborative skill, not on the regular class content, such as algebra. Because the activity is not connected to the content area students are studying, they get a chance to really concentrate on the targeted collaborative skill. For example, students can do role plays involving positive and negative examples of the collaborative skill being or not being used.

Step 4 - Students practice the collaborative skill while learning class/subject content.

When students do a group activity, they make a conscious effort to incorporate the skill.

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

During and/or after a group activity, students take time to discuss how often and well they are using the specific collaborative skill that we have focused on. To provide data for this discussion, one student per group can serve as observer. Observers note how often group members use a skill and perhaps what they say or do in using it. Some of the keys to successful discussions are allowing sufficient time for them to take place and setting clear expectations as to the purpose of the discussion.

The teacher can play an important role as an observer. The teacher's presence helps to 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. Such initial artificial use of the skill is normal human behavior. It takes a while for any new skill to feel natural.

Students can also use ratings 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 groupmate) 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:

- 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 a period of time
- 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 groupmates, and their other classmates for resources rather than relying solely on the teacher. As Wajnryb (1990, p. 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.* Previously, in classrooms, students were 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 for the purpose of learning.

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, it is important to find out the reasons behind it and see if they can be addressed. For instance, a student may have difficulty getting along with peers. In this case, doing teambuilding 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 students can use the power of groups to make their voices heard and to have a greater role in what is taught and how it is taught. 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 groupmates as well as with other groups, students have a better chance to take part in decision-making in their classroom and other aspects of their 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, as and when they are called on by the teacher. This is called sequential interaction, one person at a time – usually the teacher – speaking. In contrast, when group activities are used, one student per group is, hopefully, speaking. In a class of 48 divided into groups of four, twelve students are speaking simultaneously, i.e., 48 students divided by 4 students per group = 12 students (1 per group) speaking at the same time. Thus, the term: simultaneous interaction (Kagan, 1994). If the same class is working in groups of two, we may have even more students, 24, speaking simultaneously.

Article 19 of the Universal Declaration of Human Rights states that *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 engages in simultaneous interaction, 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, & 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 groupmates.

Cooperative Learning Principle 5: Equal Participation. Although group activities provide opportunities to express their ideas, sometimes these opportunities are not evenly distributed within the group. Instead, one or two group members dominate the group. 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*. The main form of work that students do in schools consists of learning and helping others to learn. As

groups form an important place for students to learning, everyone needs to be able to participate in their group's activities.

Cooperative learning offers many techniques for promoting equal participation in groups (Kagan, 1994). For example, a companion technique to Circle of Speakers is the cooperative learning technique Circle of Writers (Jacobs, Power, & Loh, 2002). This is the same as Circle of Speakers, but in this case groupmates write rather than speak. Two versions of Circle of Writers exist. In the first, each group has only one piece of paper and group members take turns to write on it. In the other version, each group member has a piece of paper, and the papers circulate around the group with each member writing on each paper.

Another way of promoting equal participation is for groups to do multiple ability tasks (Cohen, 1994). Based on the concept of multiple intelligences (Gardner, 1983; Kagan & Kagan, 1998) - which states that there are many ways to be intelligent and that we can increase in all the various intelligences – group tasks can allow group members to have opportunities to learn in ways they feel comfortable and to be the star of the group who helps the others. While most school tasks focus on the use of language and calculations, multiple ability tasks also bring in music, drawing, visualization, hands-on activities, role play, opportunities for reflection, and chances to work together with others. By utilizing the talents of all group members, multiple ability tasks give everyone a chance to be the leader of the group, thus minimizing status hierarchies that might develop in groups and across an entire classroom.

Cooperative Learning Principle 6: Individual Accountability. When we encourage equal participation in groups, we hope everyone feels they have an opportunity to take part in the group. The next cooperative learning principle, individual accountability, stresses that all students have a responsibility to make use of these opportunities. When we 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 which states *Everyone has duties to the community in which alone the free and full development of his (sic) personality is possible*.

One cooperative learning technique for getting everyone involved is Question-and-Answer Pairs (Johnson & Johnson, 1991).

♦ Both members of a pair write questions. These 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. When positive interdependence exists among members of a group, they feel that what helps one member of the group helps the other members and that what hurts one member of the group hurts the other members. 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 goals.

Cooperative learning fosters positive interdependence in a variety of ways. Here are three ways.

♦ Role positive interdependence

Group members can take on a variety of rotating roles in order 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. One such role is Questioner who asks groupmates questions in order to foster deeper thinking. Too much of education focuses on routine, rote learning. Using questions and other means to move toward deeper thinking, such as creativity, fits with Article 26 which states that *Education shall be directed to the full development of the human personality*. In other words, 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.

A second thinking role is Checker who checks to be sure everyone in the group has understood. The Checker plays a particular crucial role because a group's job is not done when it finishes its assignment, whether that might be completing a set of mathematics problems or doing a project presentation. The number one job of the group, the one that must be completed before a group is really finished, is to strengthen each individual member of the group, 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 group 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 utilizes resource positive interdependence. The original version of Jigsaw works like this.

Step 1 – Students' original groups of four are called Home Teams. Each home team member receives different information (for example, a section from the textbook) or finds their own. This is their piece of the jigsaw puzzle. For instance, one member might have information on the habitat of frogs, another on the anatomy of frogs, a third on the

feeding and reproductive habits of frogs, and the final 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. Groupmates ask questions and discuss.

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

Here, the group needs to work together to overcome a challenge. For instance, they 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 made a contrast between the what of learning and the how of learning. So far, we have discussed ways that cooperative learning promotes human rights from the perspective of the how of teaching. Cooperation as a value involves the content that students work on in their groups. This 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 small classroom group to encompass the whole class, the whole school, on and on, bringing in increasingly greater numbers of people and other beings into students' circle of ones with whom to cooperate, either directly or indirectly, either in person or at a distance.

Human rights fits here perfectly. If we care about our fellow humans, we want them to enjoy the same rights that 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 do calculations with data on the number of people who have access to drinkable water. In science class, they 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

To end, let us return to Article 1 of the Universal Declaration of Human Rights which 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 every day as they learn together.

Unfortunately, as stated earlier, students may not be adept at collaboration. They may want to listen only to the teacher, believing that their groupmates 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 using cooperative learning.

However, 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 reading. 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 the Universal Declaration of Human Rights.

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Appendix – Web Sites on Cooperative Learning

1. International Association for the Study of Cooperation in Education (IASCE).
Contains an online 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
This site 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 (SFAF) is a not-for-profit organization dedicated to the development, evaluation, and dissemination of proven reform models for preschool, elementary, and middle schools, especially those serving many children placed at risk. Cooperative learning is a key component of their model. The foundation was founded by Robert Slavin and his colleagues.
http://www.successforall.net/

4. Cooperative Learning Center at the University of Minnesota (USA)
The Center offers research updates, a Q & A, and many publications and other materials on CL. Co-Directors: 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 of CL and related topics, e.g., Multiple Intelligences, by Spencer Kagan and his colleagues.
http://www.kagancooplearn.com/

6. The Cooperative Learning Network
The *Cooperative Learning (CL) Network* is an association of colleagues at Sheridan College (USA) who model, share, support, and advocate for the use of *cooperative learning*. It includes 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
Works with universities and schools throughout Hong Kong as well as in China and elsewhere in Asia. Their website includes their newsletter and publications by scholars associated with the Center. Principal investigator: Dean Tjosvold.
http://www.ln.edu.hk/hkclc/.

9. Program for Complex Instruction, Stanford University (USA). This site features the work of Elizabeth Cohen, Rachel Lotan, and their colleagues which has focused 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 is a research centre at Concordia University, Canada. Their goal is to study and promote effective teaching/learning strategies through active association with schools, administrators, and teachers, particularly in the areas of cooperative learning and integrated technology.
http://doe.concordia.ca/cslp/Try.htm

11. Mid-Atlantic Association for Cooperation in Education (MAACIE). This organization promotes CL in the Mid-Atlantic region of the United States. The site includes articles from MAACIE's newsletter.
http://www.geocities.com/~maacie/

12. CLUME (Cooperative Learning in Undergraduate Mathematics Education
The Mathematical Association of America's Project CLUME is a program for mathematics instructors at all post-secondary levels who are interested in using cooperative learning in their mathematics classes. The site contains an electronic newsletter, math texts suitable for cooperative learning classrooms, ten 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. Among the features of the site are history about Jigsaw, a description

of how to implement the technique, troubleshooting ideas, a list of books and articles about Jigsaw, and information of 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 (USA) University. Many papers here related to CL in a tertiary context.
http://www2.ncsu.edu/unity/lockers/users/f/felder/public/RMF.html

16. Ted Panitz's Homepage
Ted teaches mathematics at Cape Cod (USA) Community College. His page includes two E-books, one on CL and one on Writing Across the Curriculum. Also included are some of the wide-ranging internet discussions that Ted has put together across several Lists.
http://home.capecod.net/~tpanitz

17. Pete Jones' Home Page
Pete is Head of Modern Languages at Pine Ridge Secondary School in Ontario, Canada and presents cooperative learning strategies that he and others developed.
http://www.geocities.com/Paris/LeftBank/3852/index.html

18. George Jacobs' homepage. Go to the CL section for a number of articles on CL.
www.georgejacobs.net

19. ERIC
If you go to http://searcheric.org/ and type in 'cooperative learning', you will get over 1300 hits. That should keep you busy for a while.