Encouraging Critical Collaborative Autonomy

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Abstract
In this theory-building review-essay, we advocate that second language teachers encourage their students to act critically, cooperatively, and autonomously. We discuss the three components of “critical collaborative autonomy,” why these components fit together well, and ideas for promoting their interaction and development. Being autonomous does not necessarily mean learning alone, but rather having the ability to metacognitively and critically make decisions as to the means that one uses to learn and develop. It is our contention that students learn autonomy (become more metacognitively aware and take more control) more quickly through guided cooperative learning in which they collaborate with peers to find and create their autonomous and critical voices. The incremental “assuming of control” of one’s language learning within a community not only accelerates acquisition but changes group and individual personalities. While we focus principally on this process in SLA, we also briefly address the wider socio-cultural, political and philosophical nature of such efforts.

When we look back at the past century, we see many ways in which people have gained greater control over the decisions that affect their lives. In 1900, many countries that exist today were colonies, most people did not go to school, and many people had little or no access to outside sources of information. In 2000, we see a host of new countries, schooling has become the norm, and technology offers access to a wide range of information with fewer controls. Today we see an expanding picture in which many people have more and better ways of understanding and affecting the course of their
lives. With specific reference to the situation in second language (L2) education, we see changes that augur well for more control by those who formerly had little formal power.

One of these changes in L2 education is a growing focus on promoting learner autonomy. In this article, we explain how students can become more autonomous (i.e., aware of and in charge of their choices) by working together. In particular, we describe cooperative learning and stages leading to critical collaborative autonomy. We begin with a discussion of learner-centeredness, a key rationale for learner autonomy.

Learner-centeredness

Cognitive psychologists investigating the learning process emphasize the role of learners rather than teachers and materials (Slavin, 1995). This emphasis has inspired a large number of related changes of focus in education, such as a stress on process over product (Bereiter & Scardamalia, 1987) and on students as active constructors of knowledge rather than empty vessels to be filled with knowledge (Brown, Collins, & Duguid, 1990; Bruner, 1966). Teachers working from learner-centered, cognitivist perspectives attempt to facilitate their students' learning because they know they cannot control it. Palmer (1998:6) puts it thusly in reference to university education:

I have no question that students who learn, not professors who perform, is what teaching is all about. ... Teachers possess the power to create conditions that can help students learn a great deal—or keep them from learning much at all. Teaching is the intentional act of creating those conditions.

Teachers wishing to create those conditions need learner feedback because students not only construct their own knowledge, but they also are co-constructors with teachers of the environments in which their learning takes place. Furthermore, students’ have many opportunities to construct learning outside the classroom, either on their own initiative or with their teachers’ guidance (Pickard, 1996).

A prominent manifestation of this paradigm shift towards learner-centeredness in L2 education has been the concept of learner autonomy. Dickinson (1999, p. 2), discussing the application of the idea to L2 settings, defines learner autonomy as "an attitude to
learning that the learner develops in which the learner is willing and able to make the significant decisions about her learning, ... ." Many books and articles of L2 instruction advocate learner autonomy and describe how it can be implemented. As will be discussed later, much of the literature on L2 learner autonomy describes students sometimes working collaboratively. The next two sections of this article discuss the benefits of collaboration and concepts in the facilitation of cooperation. Afterwards, we return to the issue of learner autonomy and discuss the link between collaboration and autonomy.

Why Collaborative?

Collaboration offers many benefits in many areas of life, from sports to the workplace to the family (Johnson & Johnson, 1994; Kohn 1992). Collaboration with peers can be especially beneficial. Hartup (1992) maintains that peer relations are important to the social and intellectual development of children, as well as to success in adulthood. The work world, where teams are becoming a more common organizational form and advances in computers have greatly facilitated collaboration, provides further evidence supporting the efficacy of collaboration (Collis & Heeren, 1993; Hilt, 1992).

Peer collaboration in education can be very powerful. A large body of research suggests that collaboration among students can lead to superior results on a wide range of variables, including achievement, thinking skills, interethnic relations, liking for school, and self-esteem (for reviews, see Bossert, 1988-1989; Cohen, 1994; Johnson & Johnson, 1989; Sharan, 1980; Slavin, 1995).

Social learning theory (Bandura, 1977, 1986) describes how we learn from each other through imitation and vicarious experience. However, not all role models in our environment have equal influence. Those who are close to us in terms of proximity, time, size, ethnicity, age, sex, interests, and learning level, referred to as near peer role models (Author1 1998a) seem to have a bigger impact upon us. The idea is that students more easily identify with each other and can more easily step into each other’s shoes and try on new ways of learning and being in the world. In the case of L2 education, native speakers are usually distant role models for learners and, thus, may not be as effective as near peers who demonstrate ability in the L2. In short, collaborating students may often learn a great deal from each other simply because they are appropriate role models for each other.
and can identify with each other, providing comprehensible input and learnable information within each others’ zones of proximal development (Vygotsky, 1978). The ZPD contains those learnings and tasks that are possible with the help of others but which we alone are not quite able to achieve.

Key Concepts in Cooperative Learning

Cooperative learning (CL) can be defined as a set of concepts and strategies for enhancing student-student collaboration. (See Appendix 1 for a list of websites and a Listserv on CL, and Liang, Mohan, & Early, 1998, for a review of some of the second language literature on CL.) Two concepts central to CL are positive interdependence and individual accountability (Johnson & Johnson, 1994). Positive interdependence is the feeling among group members that they sink or swim together. If one fails, all suffer in some way. If one succeeds, everybody benefits. Group members realize that each member’s efforts benefit not only themselves but all other group members as well. Positive interdependence provides a feeling of support within the group not unlike that of a cohesive sports team. This may be compared to the strong cultural tradition in Japan of “amae,” a kind of dependency that is highly valued.

Individual accountability exists when each individual member feels responsible to learn, to demonstrate their learning, and to contribute to the learning of groupmates. In other words, no one should hitchhike or freeride on the efforts of others. The purpose of CL is for each member to become a stronger individual in their own right. Therefore, groups do not measure their success by a particular group product, e.g., a group composition, but by the individual progress of each group member, e.g., the ability of each member to write well and to give useful feedback on the writing of others. Individual accountability provides a feeling of pressure within the group, which, hopefully, mixes well with the feeling of support offered by positive interdependence. This combination of peer support and peer pressure is one of the means by which CL attempts to avoid replacing domination by the teacher with domination by the group or by a dominant group member.

Jigsaw (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978), a CL technique known to many L2 teachers, provides an example of how student interaction can be structured to
promote positive interdependence and individual accountability. [Please note the use of "promoting", not "requiring", "furnishing", "guaranteeing", or "providing", as in the learner-centered view all we teachers can do is to promote and encourage.] In Jigsaw, each group member obtains unique information that they share with their groupmates in order that group members can perform a subsequent task. Thus, learners are encouraged to support each other by teaching their unique information to the rest of the group. At the same time, they may feel pressured to learn their information well and to do a good job of teaching to their groupmates because the group is depending on them.

Another key concept from the CL literature involves the importance of collaborative skills (Johnson & Johnson, 1994). For student-student collaboration to succeed, a set of collaborative skills is needed, such as disagreeing politely, checking if others understand, and listening attentively. For instance, in the work on peer feedback in L2 writing instruction, we can see an attempt to help students master the collaborative skills needed to work with one another, e.g., providing feedback checklists and teaching how to give constructive criticism. These collaborative skills promote L2 acquisition by enhancing the interaction in student groups (Bejarano, et al., 1996). Also, the language needed to operationalize the skills fits well with functional approaches to L2 instruction (Coelho, 1992).

This article began with a discussion of the notion of learner-centeredness, including learner autonomy. Then, the value of student-student collaboration was explored, along with concepts from the literature on CL that may help students work together more eagerly and effectively. Next, we state why collaboration aids learner autonomy and, indeed, serves as a vital element in the repertoire of autonomous L2 learners.

Interpreting Learner Autonomy Collaboratively

As a result of the paradigm shift towards learner-centered education by a good portion – but certainly not all - of professionally active L2 educators, efforts are being made to give students more power in such matters as what, when, and how they study and how their learning will be assessed. With this power given to students in learner-centered paradigms comes responsibility students must shoulder for the planning and carrying out of their learning. Students may, at least at first, shy away from this responsibility. They
may even resent teachers who try to give up some of their power, labeling such teachers as irresponsible. Here, cultural and institutional contexts play important roles (Pierson, 1996).

However, learners who initially are not inclined toward autonomy can be encouraged to be more autonomous. Dickinson (1999) states that L2 students need both psychological preparation to accept autonomy and methodological preparation to take on the responsibilities that autonomy brings. Methodological preparation involves acquiring strategies and, as mentioned above, collaborative skills for taking part in planning, directing, and assessing their own learning (Areglado, Bradley, and Lane, 1996). Knowles (1975, cited in Higgs, 1988, p. 44), too, suggests that competent self-directed language learning includes “The ability to relate to peers collaboratively, to see them as resources.” Indeed, although terms such as learner independence and autonomy may mistakenly be interpreted as solitary learning, autonomy does not mean that students go off by themselves and study all alone (Benson, 1996; Dam, 1995; Harris & Noyau, 1990; Kenny, 1993; Lee, 1998; Littlewood, 1996; Macaro, 1997; Author1, 1998b; Pemberton, 1996; van Lier, 1997).

Indeed, Assinder (1991) reports that participating in group activities increased her L2 students' autonomy as well as their accuracy, motivation, participation, and confidence. In Geary's (1998, p. 1) words, students can go "From dependence toward independence via interdependence". Here again, we hasten to add that the ideas of interdependence and collaboration are not left behind in achieving independence, but rather independence includes an understanding of how and when collaboration may be beneficial and the right to choose it. As Harmer (1998, p. 21), in a book on L2 teaching methodology says:

[Group activities] give students chances for greater independence. Because they are working together without the teacher controlling every move, they take some of their own learning decisions, they decide what language to use to complete a certain task, and they can work without the pressure of the whole class listening to what they are doing. Decisions are cooperatively arrived at, responsibilities are shared.
Vygotskian (1978) socio-cultural theory lends further support to the idea of collaborative autonomy with its clarifying description of how learning is first “intermentally” constructed between two or more minds and only later appropriated and used intramentally as one’s own tool to create more learning (Wells, 1999). In intensive learning, there is actually a continual dance between intermental and intramental functioning as we continually construct individual understandings from the discourse of others and combine these understandings with previous learning within our zones of proximal development (ZPD). It is collaborative interaction that allows partners to adjust to each appropriately and give each other what is “learnable” at their stage of development. For example, many scholars have advocated the Vygotskian-inspired guided, scaffolded use of peer feedback in L2 writing instruction (e.g., Brown, 1994; Lockhart & Ng, 1995; Nelson, 1995; Reid, 1993; Stanley, 1992), and Donato (1994 and elsewhere) has illustrated how this scaffolding occurs in other types of L2 tasks as well.

Palmer (1998, p. 74) similarly describes how effective classrooms resolve the apparent paradox between the individual and the group saying that, “Space should support solitude and surround it with the resources of community.” Rather than two opposing forces, these apparent opposites, collaboration and autonomy, work together when we allow them to, just as cooperative learning’s “positive interdependence” and “individual accountability” do. Palmer encourages us to go to a higher level of thinking and to realize how the individual and the community make each other possible and can work harmoniously together for the good of both.

Facilitating Collaborative Learner Autonomy

Author1 (1998b) conceptualizes a five-stage process, more aptly called “movements,” through which many L2 students seem to pass as they become more autonomous. He also notes activities that can facilitate their progress. These five overlapping, and often co-occurring, movements are socialization, dawning metacognition, initiating choice, expanding autonomy, and, finally, critical collaborative autonomy (see Breen & Mann, 1997, and Nunan, 1997, for other stage-like descriptions). The first three movements - socialization, dawning metacognition, and initiating choice - can be encouraged from day one of a class through the ways teachers structure
instruction. Obviously, how much students engage in these movements is greatly
determined by the invitational structures that teachers provide and the overall classroom
climate created jointly by students, teachers, and the larger societal context.

The first movement toward autonomy, *socialization*, involves learners in the initial
phase of joining a group or class, getting to know fellow group members, and feeling
comfortable in the group. Essential in this socialization stage is that being a member of
the group becomes part of the learners’ identity. In CL, this is known as positive identity
interdependence. Teambuilding and classbuilding activities can be useful here. At the
initial class meeting simply learning each other’s names and having the chance to
exchange even a few words with many partners goes a long way toward wanting to
belong to the group and already feeling a part of it. The idea is that all participants feel
surrounded by what Palmer (1998) calls “resources of community”.

The second component of the movement toward autonomy is *dawning metacognition*. This concerns learners examining their own learning process. Such an
examination takes place more readily in groups because students can discuss their
thoughts, beliefs, and behaviors, and each student can compare their own with those of
their groupmates. Activities to facilitate metacognition include students explaining to
each other how they got an answer, instead of just telling the answer, thinking aloud
when working on a task, and disagreeing politely. Another collaborative activity for
fostering metacognition is what in the CL literature is called processing group interaction
(Johnson, Johnson, & Holubec, 1993). Here, students spend time, during or at the end of
a group activity, assessing how well they have worked together and how they can
improve their collaboration in the future. This assessment can involve self, peer, and
group feedback.

*Initiating choice* constitutes the third movement in the path toward autonomy. As
stated above, this movement can occur simultaneously with the first two. Students begin
to make choices about their learning, such as selecting from among a variety of activities
to do, choosing from a number of options as to how to present their work, and having
input on how assessment will be conducted. Students can also choose roles to play within
their groups. These roles may include ones concerned with the mechanics of the group,
such as the timekeeper and the recorder, as well as roles more concerned with group
functioning, such as the encourager, encouraging all members to participate; and the checker, checking to see that everyone understands.

Socialization, metacognition, and initiating choice can be more readily observed by teachers when students give their feedback on class content and activities. For instance, in action logging (Author1, 1993), students write reflections on their learning process and context. The quote below from an L2 student’s action log demonstrates how certain structures, such as collaborative testing (Author1, 1995), can enhance learning, promote a cooperative spirit among students, and help students feel more confident in their L2 proficiency.

I enjoyed the test very much. It was not difficult for me because I could prepare for it in advance. So I did it with fun! At first, I had thought that it might be a written one. It was not, but a collaborative test which was new for me. The evaluation of it depends on our subjective judgement. It is a little difficult for me because I have been so familiar with teacher’s objective [sic] judgement which is thought to be “fair.” Japanese traditional teacher often compare us with other students. We have to compete each other. But in your class, the rival of our study is ourselves. The most important thing is whether we do our best and satisfy ourselves or not. It encourages me a lot because I can be proud of myself. In this class, I tried to do my best. I made a lot of friends and was impressed by them through this class (Nori, 7.99).

Author1 labels the fourth movement expanding autonomy. At this point, students’ range of choices grows. Here, students may be involved in self-assessment and in providing feedback to the teacher as to what they feel are the most beneficial ways for them to learn. More than before, this expanding autonomy travels outside the classroom to self-selection of partners and ways to enhance their learning on their own with significant co-learners. By this stage, they have socialized into a group, initiated choices, and become metacognitive about their strategies but perhaps not about their beliefs and their identities. They may start consciously “near peer role modeling,” discussed above.
The fifth and most advanced movement in this framework is critical collaborative autonomy. By this point, learners have come to truly appreciate that “two heads are better than one”, and that through a “respectful interdependence” (Author1, 1998b, p. 28), everyone can benefit from the group. This fifth movement constitutes the focus of the next section.

Critical Collaborative Autonomy

Previously in this article, we explained that “autonomy” combines well with “collaborative”, because collaboration offers a powerful means of promoting and enacting autonomy among L2 learners. Now, we would like to explain why adding “critical” to “collaborative autonomy” makes for a more useful concept. The rationale consists of two parts. The first concerns the how of collaborative autonomy, and the second part of the rationale concerns the what.

The how involves each individual using the analytical powers that Shor (1993) describes in critical literacy as (see also, Brown, 1999):

[A]nalytic habits of thinking, reading, writing, speaking, or discussing which go beneath surface impressions, traditional myths, mere opinions, and routine cliches; understanding the social contexts and consequences of any subject matter; discovering the deep meaning of any event, text, technique, process, objects, statement, image, or situation; applying that meaning to your own context (p. 32).

It is also important to find the right mix between working with others and doing one’s own thinking. As Trim (1997) describes it in the context of the Council of Europe’s efforts at L2 education:

[Learners] recognise the rights of others and accept the necessary constraints on living in a society in a co-operative spirit. For learners, this means linguistic and cultural awareness, study and heuristic skills and also social skills, an understanding of what is best done alone or in pairs and groups and in the latter case a willingness to engage in democratic decision making (p. 15).
The “critical,” the assertive questioning of ways, means, and outcomes, comes in as a caveat against overly acquiescent collaboration. Students may need activities and examples that show that dissention is not counter to collaboration but essential to the effectiveness of groups. Courageous examples of dissent, such as Gandhi, Nelson Mandela, and Aung San Suu Kyi, show on an international level what is also true in a small group: the virtue of standing up for one’s views even in the face of great pressure to desist. This is in stark contrast to sheepishly collaborating to keep things looking smooth on the surface. In critical collaborative autonomy, “yes-people” and “sheep” are as unhealthy as the “rugged individualist loner” and the “egocentric narcissist.” Mandela put this nicely in an article he wrote describing Gandhi, “He replaced self-interest with group interest without minimizing the importance of self. In fact, the interdependence of the social and personal is at the heart of his philosophy” (1999, p. 75).

Pennycook (1997, p. 39) advocates much the same critical perspective in pursuit of discovering student voices:

Autonomy . . . is not something achieved by the handing over of power or by rational reflection; rather, it is the struggle to become the author of one’s own world, to be able to create one’s own meanings, to pursue cultural alternatives amid the cultural politics of everyday life.

The second reason why “critical” belongs with “collaborative autonomy” in L2 education concerns the “what” of the term, i.e., what students autonomously collaborate about. Benson (1997) disapproves of “reductive approaches” to autonomy that deal solely with the technical aspects without realizing that the concept is a social one as well, a concept with impact on how people view the world around them and on how they act in this world. In systems theory (Kauffman, 1980), they acknowledge that we cannot expect one part of the system to change without change occurring in other parts of the system. As teachers of autonomy we have to be open to the fact that, in developing autonomy, learners will in turn develop their courses and their lives in ways that we cannot completely foresee. This can at times develop into Freirian social activism (Freire, 1970).
In the same way, cooperation can be seen not just as a good way to learn; it can also be recommended as a good way to live and to view the world. For instance, some scholars in the area of CL (e.g., Sapon-Shevin, 1999) advocate that cooperation be taught as a value. Further, groups can serve as a forum for helping students critically analyze their world, and based on their analysis students can use the power of their group to speak their truths and to act powerfully. As Kohn (1993, p. 9) states, "Students should not only be trained to live in a democracy when they grow up; they should have the chance to live in one today." In this way, via their academic education students can learn and come to value and enact the skills and attitudes they need to be active citizens who exercise both their rights and responsibilities in a society where cooperation is prized over competition. Thus, autonomy, cooperation, and related topics become classroom themes as well as classroom methods.

We acknowledge that what for us starts out as a way of giving our students more control over their learning, through critical collaborative autonomy, can become a more expansive educational ideology which can engender further socio-cultural and political changes. (Please see Santos, 1992, for an clear analysis of how the critical and ideological are treated in different domains and their cultural components.) Our personal stance is that, while we do not start out with social activism as the how or what of our teaching, we recognize its eventual potential and welcome it as a balancing and developmentally healthy extension of living critically in the world. While some readers may feel this sounds like “cultural imposition,” we believe that our description of critical collaborative autonomy pushes the envelope of development for students and educators worldwide.

Conclusion

In this article, we have discussed the paradigm shift towards learner-centeredness. This shift lies at the foundation of moves to promote learners’ autonomy. We have considered how students can benefit from collaborating, how ideas from cooperative learning can enhance that collaboration, why collaboration and learner autonomy make a good match, how teachers can facilitate autonomy, and why a critical component complements collaboration and autonomy.
We offer the term “critical collaborative autonomy” because we believe the concepts embodied within it will have a generative effect on our professional learning (i.e. it will inspire us to find ways to realize its potential). “Participation precedes learning” (Bateson, 1994, p. 41) and we have looked at how we might engage students incrementally in ever more intensive participation with others to critically examine and improve themselves and their learning communities. And this participation is on a developmental trajectory toward critical collaborative autonomy.

We also need more participation of teachers doing exploratory teaching and action research to find more ways to engender critical collaborative autonomy. A look in most classrooms, even after all the 20th century changes we mentioned earlier, reveals that many students still are not participating much in shaping their own education. Most educational systems, in both the west and the east, are not doing much to promote collaborative autonomy, and critical approaches are more often met with resistance than welcome. We believe that through increasing students’ autonomy within a community of learners that we ultimately enrich everyone through the synergistic and critical collaboration of differences and that doing this will continue the progress witnessed in the past century. L2 educators can continue to be a factor in that progress.

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References


Appendix 1 - List of Cooperative Learning Websites and Listservs

1. **Gan Siowck Lee's Home Page for Educators**

Start here. Gan has compiled lots of good resources on CL, including some of her own work.

http://pppl.upm.edu.my/~gansl/cl.html

2. **International Association for the Study of Cooperation in Education (IASCE)**

Links to a site with lots of papers on CL and computers

http://miavx1.acs.muohio.edu/~iascecwis/

3. **Perspectives on Hands-On Science Teaching**

by David L Haury and Peter Rillero

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

4. **Richard Felder’s Homepage**

Richard teaches engineering at North Carolina State (USA) University. Lots of good stuff here related to CL.

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

5. **Theory and Practice**

by University of Athabasca, Canada


6. **Center for Social Organization of Schools at The Johns Hopkins University**

For more than 25 years, the Center has conducted programmatic research to improve the education system, as well as developing curricula and providing technical assistance to help schools use the Center's research. Site includes information on the Center for Research on the Education of Students Placed at Risk (CRESPAR) as well as Success For All and Roots & Wings.

http://scov.csos.jhu.edu/

7. **Cooperative Learning Center at the University of Minnesota (USA)**

Co-Directors: Roger T. Johnson and David W. Johnson

http://www.clcrc.com/

8. **Active and Cooperative Learning**
by Bridget M Smyser
http://www.wpi.edu/~isg_501/bridget.html

9. **I is for Interaction - Not Isolation**

Words on Cooperative Learning and Technology
http://137.48.46.72/htmldocs/techcoop.html

10. **Cooperative/Collaborative Learning**

by Susan Ledlow and Neil Davidson
http://www2.emc.maricopa.edu/innovation/CCL/CCL.html

11. **The Cooperative Learning Network**

The *Cooperative Learning (CL) Network* is an association of colleagues at *Sheridan College* (Canada) 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

12. **Computer Supported Collaborative Learning**

This site contains papers from a 1995 conference.

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

13. **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://www.capecod.net/~tpanitz/tedspage

14. **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

15. **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. See especially the resources page.

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

16. **ERIC Abstracts on Cooperative Learning**
This site contains selected abstracts on cooperative learning prepared by the Association on Supervision and Curriculum Development (ASCD).

http://www.ascd.org/services/eric/ericcoo.html

17. **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/

18. **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 groups, in particular the treatment of status differences among group members.

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

19. **Rikki Ashley's Cooperative Learning Homepage.** Basic information on CL, plus an assortment of activities.

http://members.home.net/riketa/index.htm

20. **George Author2's homepage.** Go to the CL section for a number of articles on CL.


**Cooperative Learning Listserv**

For those interested in an international LISTSERV on CL they may subscribe to the CL listserv by sending an e-mail message to:

majordomo@jaring.my

Include in the body of the message:

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SUBSCRIBE CL
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All postings to the list should then be sent to:

CL@jaring.my