28

Online Collaboration: An Overview

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Collaborative efforts are just as much about understanding conditions for collaboration in coordinating work, as … [they are] a matter of collaboratively constructing knowledge.
Learning outcomes

After completing this chapter, you should be able to:

- Understand what collaboration entails and how to foster and facilitate it.
- Understand the theoretical and practical issues surrounding collaborative and other kinds of collective endeavours.

Introduction

In this chapter we explore the notion of collaborative learning from theoretical and practical perspectives. The first step is to distinguish collaborative from cooperative learning, because much so-called collaborative learning, although collective and often cooperative, is not necessarily collaborative. By getting a clear understanding of what we may not be doing when attempting to foster collaboration, we can formulate clearer ideas of what else is possible and what is transferable to online learning and working environments. This chapter is rich in references that tie into learning theory and primary literature that interested readers may wish to explore. It concludes with stories and reflections representing online educational collaboration from learners’ and educators’ perspectives.

Point of departure

As cooperation and collaboration take on increasing importance in workplaces, societies, and the world as a whole, it is natural that, in order to prepare learners for this world, educators are also taking an interest. However, most schools do little to promote either self-directed, collective learning endeavours or the development of skills that students need to listen effectively to one another, addressing “complex issues and problems that require different kinds of expertise” from those that they currently may study or emulate in school (Bielaczyck & Collins, 1999, p. 272). With rapid development and expansion of technological infrastructures, possibilities for harnessing technology to enable collaboration are expanding. Yet, as we move to take advantage of these possibilities, we encounter new challenges and discover unexpected complexities in fostering collaborative endeavours online.

Here we offer an overview of collaborative learning, particularly in adult and higher education. We first define cooperation and collaboration, then explain why they are desirable, and we outline what you need in order to achieve them, examining both issues specific to working with technology and those that are common to online and offline situations. Finally, we look at broader issues involving cultures of collaboration and possible future directions for collaborative learning. This overview will serve as background for the stories that follow.

Definitions and distinctions

“When a word becomes fashionable—as is the case with ‘collaboration’—it is often used abusively for more or less anything.” (Dillenbourg, 1999, p. 1)

Though there are no hard and fast definitions of collaboration and cooperation, generally we perceive them to differ in emphases along the following dimensions, with the more collaborative elements on the right (Table 28.1).

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Since it is easy to confound the terms cooperation and collaboration, or to use them virtually interchangeably due to their similar Latin origins meaning to work together, we would like to draw a working distinction between cooperative and collaborative learning endeavours from McInerney and Roberts (2004), who hold that “the term collaborative should be used for those learning techniques that emphasize student-to-student interaction in the learning process, while the term cooperative should be used where students are required to work in small groups, usually under the guidance of the instructor” (p. 207). This distinction resonates in Finkelstein’s view of guidance: “Although the presence of a facilitator can guide collaborative activities, these interactions tend to be more egalitarian in nature and can happen at any time, in both structured and informal settings” (2006, p. 3).

Panitz recognizes similar processes in both cooperation and collaboration, such as learner grouping and tasking, and then the sharing and comparing of “procedures and outcomes” (Panitz, 1996, para. 7). However, for cooperation, Panitz asserts, those processes enable learners to achieve goals and create products that are
“usually content specific”, that teachers determine and control, while “collaborative learning is more student-centred” (Panitz, 1996, para. 4).

An important dimension of collective endeavours that Lavin and Tomei examine in Wiki Technology for Online Education (Chapter 25, Tools for Online Engagement and Communication) is the relative emphases placed on process and product. Product orientation characterizes cooperative endeavours, while process orientation reflects more collaborative ones.

Other distinctions to note between cooperative and collaborative activities concern the level of interdependence among learners, the nature of group roles—leadership in particular—and the complexity of interaction. For practical purposes, let us define interdependence as “a dynamic of being mutually responsible to and dependent on others” (Wikipedia, Interdependence).

Typically, the term collaborative applies when the level of interdependence among learners is higher and when group members’ roles overlap to a greater degree than in cooperation. Whereas Dirkx and Regina consider “level of interdependence” and “learner accountability” crucial (2004, p. 155), Graham and Misanchuk consider fostering interdependence and accountability as “key challenges” in structuring computer-mediated group activities. Further, they argue that interdependence needs to be higher for collaborating than for cooperating groups (2004, pp. 183–184).

Dillenbourg defines collaboration as convergence of “three concurrent processes, which are neither independent of each other, nor identical,” namely processes of communication, coordination, and problem-solving (2002, p. 22). Ingram and Hathorn view collaboration as “a more complex working together” than cooperation, particularly with regard to “the interactions and effectiveness for instruction and education” that collaboration entails (2004, p. 216). Their definition is consistent with the others, but adds criteria of equality, authenticity, and synthesis. Thus, for Ingram and Hathorn, collaboration requires “roughly equal participation, genuine interaction among the participants, and the synthesis of work into a unified whole” (p. 215). At its best, wiki work typifies that unification, as Lavin and Tomei explain in Wiki Technology for Online Education (Chapter 25, Tools for Online Engagement and Communication).

Graham and Misanchuk also distinguish learning groups from work groups as they examine “benefits and challenges of group work in online learning environments” (2004, pp. 181–182). Throughout this section, we will focus on learning groups that Graham and Misanchuk might characterize by: “flat leadership”, fuzzy roles, valuing learning over productivity, focusing on processes rather than outcomes, and assuming group responsibilities as often to learn skills as to use them (p. 185).

Benefits of collaboration

“Among the most highly regarded of these skills can be counted the ability to work productively in teams, in both social and work settings, especially in situations where the various team members may have diverse backgrounds, experiences, and opinions. Indeed, it is in just such an environment that collaborative work can bring the greatest benefits.” (Roberts, 2005a, p. vi)

Collaboration sounds like a very desirable thing, but for educators to change what they do, we need to spell out the potential gains. Benefits of collaboration that scholars often mention include: amplification of learners’ intellectual capacity; meta-cognitive skills, that is, powers of thinking about thinking, including planning and evaluation of learning processes; plus social and job skills. We also imagine that as collaboration is made more integral to the process of education, we will see it used effectively in other domains. There is nothing that prevents these other areas from embracing collaboration and leapfrogging ahead of education, so we feel that many of these basic notions can be effectively employed in any online environment, whether educational, professional, or vocational.

According to Graham and Misanchuk (2004), theoretical benefits of learning through social interaction, or collaboration, derive from synergy within groups enhancing members’ thinking and organizational skills, promoting insights and explanations, and encouraging greater achievement. Similar benefits deriving from collaboration entail risk-taking and perseverance, retention of what is learned, meta-cognitive skill development, creativity, and transferability.

Roberts argues that learners stand to benefit as much from “collaborative learning within a computer-supported environment … as within a classroom or lecture hall … [because] fruitful and constructive discussion and dialogue can take place at any time” (Roberts, 2005b, p. 4). Likewise, Klemm concludes that face-to-face collaboration techniques transferred online can lead to “better student learning and achievement” (2005, p. 198).

Whether in the classroom or outside, exploiting links to prior knowledge can enhance the entire learning process and lead to the development of interpersonal intelligence in critical thinking communities. Chamot suggests that interactive teaching can raise learners’ awareness of
their prior knowledge and enable them to develop new knowledge that is “shared and constructed rather than transmitted one way from teacher to students”. Collaborative teaching allows students and teachers to work together to “discover, create and expand their understanding and skills”. The aim of such collaboration is to develop interpersonal intelligence, or “the ability to understand and respond effectively to others” (Chamot, 1995, p. 4).

In multi-cultural settings, this kind of interpersonal intelligence would encompass intercultural understanding and communication, with classrooms, virtual learning environments, and online work environments created for a specific purpose serving as exemplars of communities. Through discussion and analysis of participants’ thinking, leaders can raise meta-cognitive awareness, enabling them to choose appropriate strategies to enhance the efficiency of their learning. Taylor suggests that benefits also include “building self-esteem, reducing anxiety, encouraging understanding of diversity, fostering relationships, stimulating critical thinking, and developing skills needed in the workforce” (2005, p. 24).

Conditions for educational collaboration

While we focus on educational collaboration here, education is not restricted to the academy but is applicable to any situation where it is desirable for participants to improve in order to help a community grow. Thus, Haavind’s four key elements for online collaboration can be thought of as basic:

(1) Socially bonded communities of learners  
(2) Collaborative activity designs  
(3) Explicit scaffolding or teaching of how to collaborate  
(4) Evaluation of collaborative participation (Haavind, 2006)

To engender collaboration for purposes of making or improving something, from an educator’s perspective, Currie suggests focusing on several key factors: intent to collaborate, characteristics of target populations, types of member interactions, time frames, and the existence or necessity of guidelines, rules, and governance (personal correspondence, March 10, 2006). This is very much in line with Dillenbourg’s (2002) analyses of computer-supported collaborative learning scripts in terms of: (1) what tasks learners must complete, (2) how groups form, (3) how groups distribute responsibilities, (4) how learners (and groups) interact, and (5) when task work and interactions occur.

Raising what by now should be a familiar challenge to promises of online, anytime, anywhere, learning. Dillenbourg underscores the necessity and expense of tutelage:

“Regulating collaborative learning is a subtle art. The tutor has to provide prompts or cues without interfering with the social dynamics of the group. Light human tutoring is a necessary, but expensive resource for computer-supported collaborative learning.” (Dillenbourg, 2002, p. 2)

Chamot (1995) emphasizes the importance of a strong teacher presence, and this may be even more important with non-traditional students and in English as a Second (ESL) or Foreign (EFL) Language settings. Sorenson suggests that collaborative learning calls not for “decomposition of the learning content or tasks”, but rather for “supporting learners’ navigation through meta-communicative levels” (2004, p. 257). Thus collaboration should involve more than talking the talk of collaboration; it should entail talking the walk, that is, communicating about the hows and the whys of both processes and products of collaboration.

Interdependence, by definition, characterizes collaboration, but entails challenges and risks as well. Graham and Misanchuk (2004) explain: “The higher the level of interdependence between group members, the greater the communication overhead [time] required to complete the learning task.” They also suggest “individual learning can be compromised if there is limited interdependence in a learning group”. Although mature groups that they studied could ascertain “the level of interdependence with which … [the groups themselves] were comfortable”, Graham and Misanchuk highlight cases in which “groups chose an efficiency focus over a learning focus” (pp. 193–194). In other words, those groups’ interactions were more business-like than educational, and arguably more cooperative than collaborative.

It is worth noting here that none of those definitions, conditions, or strategies for fostering collaboration focuses on technology per se. Subsequent sections point to possible additional benefits of using certain computer-based environments (for example, see Chapter 25, Tools for Online Engagement and Communication, on blogs and wikis), but such environments also have their own demands. Their very novelty means that we have yet to fully understand their true nature, and, as Sorenson (2004) suggests, this may mean that we have yet to reap their benefits to the full.
Issues and solutions

Fostering and facilitating collaboration is no cakewalk. Pedagogical and technical problems are part and parcel of collaboration, as are information management and communicative workload problems (Daradoumis and Xhafa, 2005).

GROUPING

Group social relationships form the core of collaborative endeavours, and, according to Shirky (2003), it is impossible to separate them completely from technological issues. However, since careful group formation, consolidation, and commitment building are clearly conducive to success in collaboration, let us consider those first and leave examination of tools for subsequent chapters.

Group formation

Issues associated with group formation become very important at the earliest stages of collaborative projects. One possible approach is the “radical model” that Roberts points out (2005b, p. 8; in Learner Assessment and Peer Evaluation Protocols). The radical model calls for random assignment of learners to groups but may be among less desirable alternatives when striving to engender anything like socially bonded communities of learners (Haavind, 2005). Taylor suggests that effective collaborative groups require “group composition of optimal heterogeneity” and that “difference of viewpoints is required to trigger interactions” (2005, p. 23).

As educators, we may find that group formation is better not left to chance. That is even truer if we agree that Daradoumis and Xhafa’s collaborative group formation methods are “dynamic collaborative processes” leading both to “better learning outcomes” for learners and to “professional development in a networked learning environment” for educators (2005, p. 221). Although devoting an extended period of time to group formation may be a luxury that not only adult and tertiary educators but also leaders in the workplace feel they cannot afford, it behooves us to examine one such process for means of learner engagement that could also work on the fly.

Daradoumis and Xhafa prescribe a four-phase, eight-day long process solely devoted to group formation, beginning with a two-day group analysis of a case study on collaborative group work, the purpose of which is to familiarize learners with whether and how groups collaborate effectively. The second phase (one day) consists of learners sharing information about themselves that they deem relevant to the tasks ahead, including: “personal data, expertise level, work pace, available working time, temporal coincidence, goals, ... [as well as their] attitudes towards collaborative learning, social aspects of collaboration, and previous experience in group work”. The final two phases of group formation take five more days: four for negotiation of actual group memberships, plus one for putting group membership proposals to tutors for their approval (2005, pp. 221–223). Though we question whether learners could share so much information about themselves, their goals, and their attitudes, in as little as one day, especially considering multiple time zones or locations around the world, with the exception of the case study analysis this whole process reflects similar yet satisfying group formation summarized in a later section in this chapter, Beyond the Mines of Bhoria.

This sort of group formation is an intensive hands-on process involving educators in “supervising, guiding, and motivating students through the whole process”, as well as in “organizing and restructuring” learners’ online environments, as necessary, in order to alleviate learners’ interaction workloads, and to facilitate identification of suitable group mates and location of groups in the process of formation. Not only educators, but also learners, should pay particular attention to the “degree of commitment” shown by one another during group formation (Daradoumis & Xhafa, 2005, p. 224), because commitment is a key indicator of success in collaboration.

Group consolidation

Once learners make commitments to join groups and get approval from course supervisors if necessary, the induction process should continue, because group formation alone is not enough. Group consolidation is of equal importance, because success depends on whether individuals continue to engage in group activities and deepen their relationships with one another. Daradoumis and Xhafa (2005) attribute many collaborative failures to lack of ongoing commitment by members to their groups and mutual purposes. To assure such commitment, groups need ongoing guidance, engendering trust and facilitating self-determination. Addressing all foreseeable challenges is no easy matter.

Striving to obtain and incorporate learner input from group goal-setting onwards is a challenging way for educators to extend the range of collaborative activities that they foster and facilitate. Gathering learner input early in an online course can create opportunities for learners to take initiative, to demonstrate or develop leadership skills, and to negotiate commitments and leverage engagement in more collaborative activities to
follow. One such activity could be determining when and how to engage in collaboration.

How much input should learners have when determining the rules of engagement? This is important because, according to Currie, the existence or necessity of guidelines, rules, and governance define collaborative groups (personal correspondence, March 10, 2006), regardless of whether these guidelines come from educators or learners.

Daradoumis and Xhafa propose that learners consolidate their group by coming up with their own “specific and flexible” guidelines for group interaction (2005, p. 226). They argue:

A clear identification of the [learning and social] goals and the responsibilities of each member will result in elaborating an adequate working methodology, good planning and timing, and fair and viable assignment and distribution of the constituent tasks to be performed. (Daradoumis & Xhafa, 2005, p. 227)

It is unfortunately true that the greater the number and complexity of collaborative activities you plan, the more chances there are for problems to arise at any point in the process from group formation to self and peer evaluation. Pedagogically, when group work and production are highly collaborative, individual evaluation is a problem. Technically, when “frequent, or even intensive, interactions for decision-making or conflict resolution” are necessary, asynchronous communication may not suffice. Moreover, collaborative activities are typically time-consuming. For example, Daradoumis and Xhafa (2005) allocate a period of a week for group consolidation alone, which is more time than educators on tight schedules may wish to invest towards fostering learner collaboration unless they are responsible for design and implementation of courses of study that bridge semesters or span years.

Perhaps more important, from learners’ perspectives, intensive collaboration may generate huge quantities of information. This information, if unmanaged, may lead to information overload and withdrawal from groups. If group members must manage this overload, information management activity may interfere with so-called “real work and learning” (Daradoumis & Xhafa, 2005, p. 228). Thus, concerns about speed of progress may precipitate educators to intervene by assigning groups and roles; setting assignments, tasks, and schedules; pre-authenticating resources; and controlling or prescribing rather than scaffolding evaluation processes.

Although adopting such time-saving tactics may satisfy educators’ and even learners’ desires to enhance productivity, it also can diminish opportunities for learner collaboration, and thus for learners to acquire skills and proficiency in planning, regulating, and assessing collaborative endeavors. Given administrators’ affinity for quantifiable learning outcomes and concerns about time schedules, it is all too easy for educators under time pressure to adopt a product-oriented approach. However, unless and until learners invest thoroughly in collaborative activities, engaging intensively and over extended periods of time (for example, see Bonnie’s Story below), they may fail to acquire the skills necessary to carry out collaboration with near-peers in educational or in future work environments.

In educational environments, all these points weigh towards the aim of educating the target population, but in the workplace other factors may override these considerations. Yet we would like to underscore the following four points from educational research into collaboration:

1. Allow as much time as possible for groups to share information that may not appear immediately relative to the task at hand.
2. Allow groups to develop their own guidelines for group interaction.
3. Beware of information overload, and realize that an important part of the collaborative process is managing the information produced.
4. Be prepared to deemphasize the product in favour of developing collaborative skills, so as to permit group members to invest thoroughly in collaborative activities.

Community building

“In a learning communities approach … students become responsible for their own learning and the learning of others. Students also develop ways to assess their own progress and work with others to assess the community’s progress. In contrast, in most classrooms the teacher is the authority, determining what is studied and assessing the quality of the students’ work”. (Bielaczyc & Collins, 1999, p. 275)

Community building figures prominently in a later chapter but is worth briefly mentioning here. In order for a collaborative culture to flourish, there needs to be some sense of community, and a prerequisite for community is an atmosphere of comfort, sharing, and trust, as highlighted by Neal (2005b). However, it is no easy matter to create such an atmosphere, and it takes time.
For example, Riel, Rhodes, and Ellis (2005) find that although learning circles provide a suitable structure for peer review, it is not always easy to build a sufficient level of trust in the short time available in a typical course. For that reason, educators may opt for practical approaches, including technical training, rather than trying to foster and facilitate more complex collaborative structures.

The Concord Consortium model for quality online courses presents community-building activities as but one of nine key program elements. Proponents of this model assert that “learning through collaboration requires participants to take intellectual risks”, and that it is necessary to “nurture a community culture in which participants are supportive and honest”. This model presupposes that failures are okay, as long as they become learning experiences, and the model relies upon trained and experienced facilitators “to foster this sense of intellectual trust and safety” (Concord Consortium, 2002, pp. 1–2). One source of such training is PBS TeacherLine (http://teacherline.pbs.org/teacherline/about.cfm).

The Concord model for community building encourages educators to make “expectations about good group processes” explicit, and to use “inclusive and collective language that focuses on content” rather than individuals. Setting aside time for the participants to get to know each other is “an essential first step” (Concord Consortium, 2002, p. 2). Educators who follow this model also exploit a host of other “techniques for building and maintaining group cohesion”, including “anonymous polls, role-playing, use of smaller discussion groups with rotating roles, or weekly online meetings” (Concord Consortium, 2002, p. 2).

All of those suggestions imply recognition that learner communities manifest both educational and social dimensions. Those suggestions may serve to underpin what Biehalcyc & Collins call “community identity” development by fostering “a collective awareness of the expertise available among members of the community” (1999, p. 275). For more on community building, see Chapter 30, Supporting E-learning through Communities of Practice.

BLENDING

Blending venues, modes, and media presents learners with opportunities as well as challenges to experiment with various forms of interaction that they may find useful for collaborative endeavours. While White (2003) asserts that collaboration can occur online, she suggests expanding the concept of blending. So, when we advocate blending, we mean not only online and offline activities (Harris, 1995), but also synchronous and asynchronous (time-delayed) interactions (Knowplace, 2006), using various means of computer-mediated communication and involving individual as well as collective endeavours (White, 2003), including self- and peer assessments.

Both assessment and blending are issues that emerge in a later section in this chapter, Learners’ Stories of Online Collaboration. We also explore assessment in Assessment Schemes for Adult Learners (below).

For instance, Harris (1995) advises subsuming collaborative activities to curricular goals, yet is against conducting such activities online when learners can participate more readily face-to-face. Similarly, Dillenbourg points out that many scripts capable of promoting collaboration actually integrate individual and collective activities. Dillenbourg favours face-to-face work whenever feasible and advocates group formation defaults that accommodate match-ups by geographic proximity and availability to meet (2002, p. 13). He also highlights scheduling of critical activities during limited opportunities for busy adult learners to actually meet face-to-face (p. 16).

In telecommunication mode, Federer (2003a) finds that, though some learners are capable of immediate responsiveness, others need time to formulate and communicate their ideas. However, since intensive combinations of both synchronous and asynchronous communication within short time frames take their toll on both online educators and learners, Federer advocates combining data from both learner surveys and facilitators’ logs to find “optimum times … for online vs. offline collaboration” (2003b).

According to Finkelstein, synchronous online settings “offer an immediacy that not only allows collaboration to begin instantaneously, but also diminishes the actual time spent on task” (2006, p. 4). For both online courses and work groups, Neal suggests starting with early, intensive, synchronous activities as a means to generate group energy and to create a social context for subsequent, time-delayed interactions (2005a). Such activities are consistent with recommendations for community building.

TOOLS

“Increasingly, course approaches (constructivist approaches) are adopting group work and collaboration on projects as assessed course activities, and students are largely stuck fumbling with sharing Word documents in a discussion forum, through IM, or through email. Obviously, distance students don’t have the luxury of being able to meet face to
face to work on projects together, and even if they can, sometimes it’s not always the most efficient way of getting something done.” (Morgan, 2005)

Some kind of asynchronous interactive environment that allows social interaction is necessary to enable collaborative learning activities, but discussion boards, familiar tools for many online educators, frequently provide insufficient structure to engender collaborative discussions.

Dillenbourg argues that “an important ergonomic feature [of remote interactions] is the degree of integration of task interactions and social interactions” (2002, p. 17 [italics in original]), or the extent to which specific tools allow learners to communicate upon what we might call learning objects. Yet he points out drawbacks of such integration for learners who prefer to use familiar communication software such as chat, discussion boards, or email for various interactions.

However, as Moore and Marra assert, when contributions to discussion boards “lack focus or the board content becomes confusing, … this critical component of an online course can both be an ineffective communication tool and actually impede learning” (2005, p. 191). They surmise that “empirical evidence to indicate that text-based communication used in computer conferencing can facilitate higher-order and critical thinking is only just emerging, and not entirely consistent in its results” (p. 193).

Some educators opt for increasingly structured approaches yet may not achieve the results they desire. For example, Dillenbourg suggests “a certain degree of coercion [scripted interaction] is required for efficiency reasons, but too much might be in contradiction with the very idea of collaborative learning and might decrease student motivation” (2002, p. 20).

Balancing rules, structures, scripts, protocols, or other means of coercion against group autonomy and interdependence is indeed a tricky feat. For example, Moore and Marra examine an “argumentation protocol … designed to facilitate knowledge construction”, an arguably collaborative process that they demonstrate and exemplify in practice discussion. Yet, they conclude, “the argumentation protocol, as we implemented it, may have negatively affected students’ quantity and quality of participation” (2005, p. 207).

If more technological structures fail to consistently foster learner collaboration, perhaps creating cultures of collaborative development can. Many teacher educators, in fact, advocate starting by teaching teachers (and administrators) to collaborate in online projects by having them participate in online projects themselves (Crichton & LaBonte, 2003; Taylor, 2005).

Similarly, educators who want to get learners to use weblogs and wikis effectively need to use the same tools effectively themselves. (See Chapter 25, Tools for Online Engagement and Communication.) At this juncture, however, we shall give tools a reprieve, and next take a closer look at assessment schemes, to see whether they are likely to promote collaboration.

**ASSESSMENT SCHEMES FOR ADULT LEARNERS**

“What is assessed in a course or a program is what is valued; what is valued becomes the focus of activity. The link to learning is direct. Instructors signal what knowledge skills and behaviors they believe are most important by assessing them. Students quickly respond by focusing their learning accordingly”. (Swan, Shen & Hiltz, 2006, p. 45)

With respect to adult learners in particular, Huang offers six principles to guide both instructional designs and teaching practices:

1. **Authenticity**: Allowing learner participation in course design can help avoid pre-authentication and can ensure that courses are meaningful and authentic with respect to adults’ needs, working lives, and experiences.
2. **Learner-centeredness**: In order to develop “ownership of the learning process by learners”, the learners themselves need to become invested in the process from the planning stage onward.
3. **Facilitation**: Although provisions for autonomy are essential for adult learners in a constructivist model, designers and instructors still need to facilitate and support [both] autonomous and collaborative learner development.
4. **Interaction**: Interactions with tools, peers, materials, and instructors can serve as motivation for adult learners, and also as springboards for critical reflection.
5. **Collaboration**: Collaborative endeavours that involve sharing, reflection, negotiation, and synthesis of knowledge are conducive to adult learning.
6. **Critical thinking**: Adult learners need to use “higher order thinking skills … to determine the authenticity and quality of information”, processes, and tools at their disposal. (Huang, 2002, pp. 32–34)

To those principles let us add that adults ought to evaluate the “discussion-oriented, authentic, project-based, inquiry-focused, and collaborative” learning processes in which they participate (Huang, 2002, p. 35), in
order to determine how effective those processes are in helping themselves to achieve their own educational, social, and future goals.

However, it appears to be rather rare for collaborative ideals to carry over into assessment practices. For example, Roberts points out that, even in so-called radical models of collaboration, assessment is often the last holdover from the new paradigm, and he speaks of “a fairly traditional model of assessment, since the grade awarded is based on the standard paradigm of attempting to assess the individual’s own efforts, even within the context of an online collaborative learning environment” (2005b, p. 8).

While Haavind (2006) construes scaffolding and evaluation of participation as fundamental to collaborative learning endeavours, learners’ expectations and educators’ proclivities may disclimate towards collaborative evaluation processes. For example, learners may respond quickly to external rewards, marks, or grades that educators offer as incentives for collective learning behaviours. However, where incentives or coercion come into play, they may induce cooperation rather than collaboration, which ultimately depends upon learners’ self-motivation and mutual responsibility for joint learning outcomes.

At their best, technological tools may enable us to assess learning processes and outcomes that we have been unable to assess before, provide more immediate diagnoses and feedback on difficulties learners encounter, and even adapt content presentation accordingly. However, there are still problems of skills that elude technological assessments, including unresolved validity issues, technical glitches, or system failures, as well as formative and social shortcomings to such assessments (Carnegie Mellon, 2002; Advantages and disadvantages of using advanced technology for assessment). Even in what you could call cutting-edge introductions to uses of social software and activities for collaborative learning purposes (Cameron & Anderson, 2006), assessment criteria range from “none” for orientation to tools and environment, to familiar and formulaic measures, generally based on quality and quantity of written products or online postings.

In fields that are specifically concerned with such interaction, such as education, there is less pressure to have such collaborative processes produce concrete results, with processes rather than products being the keys. Additionally, the inability of decision makers in other fields to appropriately assign credit in a way that reflects the collaborative process makes collaboration a much more difficult affair to promote. An episode of the beloved US television series M*A*S*H serves to illustrate this problem. When Hawkeye develops a new surgical technique that is worthy of publication, the fact that this technique arose only because of the intense collaborative environment in which he worked led the other doctors to be envious of the acknowledgment he received for his paper. The solution, that of having the paper published with the MASH 4077th unit as the author, while a Hollywood resolution that fits the time constraints of series television suggests that collaborative work can encourage examination of values and ideas. So exposing students in other fields, such as the sciences, to collaborative learning not only creates opportunities to advance different forms of problem-solving, but also enables the examination of received wisdom.

Often assessment seems contrived and controlled by instructors rather than learners, for summative rather than formative purposes. Modes of assessment that Graham and Misanchuk observed cover the gamut from individual to peer group and from process to product. However, in none of the examples that they mention do they refer to collaboration in the evaluation process (2004, p. 194); it appears as if the synergy of social cognition gets lost in the shuffle of assessment technologies. So for the future, Dede envisions arguably more suitable “peer-developed and peer-rated forms of assessment” (2005, Implications for Higher Education’s Strategic Investments).

“Our assessment practices have to keep in step with our understanding of human cognition, and new technologies are one set of tools that can help us to meet this challenge.” (Carnegie Mellon, 2002)

A broader view: educational collaboration in context

Many of the various problems and issues that arise in collaborative models of learning and teaching have comparatively straightforward solutions, such as modifying tool choices and experimenting with ways of forming groups. In the background, however, always lurk more general issues concerned with educational models and enculturation to more collaborative modes of learning. We address such issues briefly in this section.

STAKEHOLDERS AND COMMITMENTS

Administrators’, educators’, and learners’ stakes in, and commitments to, distance education and collaborative learning are critical. Not long ago, a large proportion of
administrators may have had little or no experience with, or knowledge of, learning or teaching online; and thus they may have failed to grasp the importance of logistical and technical support both for educators and learners. Administrators may still overestimate the number of students who can comfortably be accommodated in courses, and may grossly underestimate demands on libraries and technical support (Johnson, 2003, para. 2).

Educators, in turn, may underestimate necessary investments, and may jump into technology-based teaching “without fully realizing the high degree of individual student involvement that will be required, or the radical shift in the role of the faculty”, perhaps because many of their peers “have already made that leap of faith into a new modality, and are approaching it with vigor and enthusiasm” (Johnson, 2003, para. 3). Developing close relationships with technical support personnel (Noakes, 2003) suits only those whose institutions have such personnel. Thus, educators contemplating adoption or adaptation of technology to foster learner collaboration should not only scan their institutional environments for available support or relief mechanisms (Bates, 2000, Ch. 2: Leadership, Vision, and Planning), but also realistically assess the time commitments that both they and learners are willing to make.

Time commitments and constraints are of critical importance to online learners in particular, for, as Johnson reminds us, “Learners usually come to online courses due to limits in time or geography, not necessarily because they want to be heard as individuals or work in teams” (2003, para. 4). Likewise, Guribye, Andreasen, and Wasson point out that “Collaborative learning can impose a severe workload on the collaborating actors” (2003, p. 385). In response, Vanides argues that, though “popular expectations about e-learning” may be problematic, particularly with respect to ease and convenience, “deep learning takes deep commitment” from both educators and learners. So he recommends not making group assignments without the will to “invest the effort to make it work … [by] setting clear expectations, rules of engagement, spending time facilitating and helping students with social negotiation, and rewarding teamwork” (Vanides, 2003).

ENCULTURATION
When we use technology to develop learning environments, we “code in our cultural biases, our beliefs, and values” (White, 2006, para. 3). So we need to consider not only whether the institutional and organizational cultures in which we work reflect practices and values of collaboration, but also whether our own habits of collaboration are reflected in the collaborative environments that we are striving to create and in the collaborative processes that we aim to foster and facilitate. As Daradoumis and Xhafa put it: “A culture of collaboration must be based on relationships characterized by trust, motivation, encouragement, mutual support, and openness” (2005, p. 223).

Peer-facilitated enculturation (Olt, Gack, & Cole, 1993), in discussion-based communities for example, may derive from legitimate peripheral participation, or social apprenticeship in collaborative learning communities where contributing, writing, responding, and reflecting are behaviours that accommodating peers scaffold (step-by-step, tier-by-tier), in order to give other learners, and to encourage co-readership and peer responses by not making exceedingly lengthy or multifaceted contributions (Bender, 2003, p. 9). Nevertheless, Bender recognizes the difficulty of instructors providing necessary scaffolding for entire classes, “not only because of class size, but because of the diversity of students” (p. 9). So, in learning communities where diversity is taken as a virtue, it may be necessary for the learners themselves to the push the envelope of sociality in order to make their online learning environments more personable and conducive to sustainable and satisfying collaborative learning experiences.

However, how likely is it that run-of-the-mill learners are capable of, or willing to, nurture their peers, if their instructors and communities fail to manifest nurturing and apprenticeship practices at large? Online educators can assess their own tendencies to nurture learners, but perhaps creating a culture of collaboration requires broader, deeper, and longer-term commitments than many educators and learners are willing to make. As we mentioned earlier in discussion in this chapter of assessment schemes for adult learners, in learning contexts that are notably competitive, or where any culture of collaboration runs too shallow to fathom, perhaps offering incentives to induce cooperative learner behaviours would be a small step forward.

It may be necessary to start with teacher training and the ways in which teachers interact with each other in their professional lives, because, as Murphey and Asaoka (2005) argue, fractal models of teacher collaboration predispose student collaboration. That is, if educators collaborate and reflect with one another, as well as with the learners that they profess to educate, the learners themselves stand to benefit from both role models and apprenticeship.

Furthermore, if the notion of collaboration seems intriguing, then offering incentives as part of the process by incorporating it into grading and marking is some-
thing to try. The recent trend of reality-competition television shows such as *Top Chef* and *Top Design* often have the competitors work in teams, with one person from the losing team subject to elimination. While this is too Darwinian for our own classrooms, it is a useful exercise to have students realize that their learning does not take place in a vacuum but depends on the contributions of other peers.

Pratt and Collins offer an inventory of educator perspectives, one of which, apprenticeship, seems perfectly harmonious with efforts to enculturate students to collaborative endeavours: “Effective teaching is a process of enculturating students into a set of social norms and ways of working” (Pratt and Collins, n.d.). The increasing prominence of collaborative endeavours in professional training and development contexts may do much to bring us nearer to the bright future for education that we envisage.

The future of collaborative learning

We have little doubt that developments in technologies and in both our understandings of, and practical measures for, building online communities will figure prominently in collaborative learning futures. Cameron and Anderson (2006), for example, present a suite of preparatory activities for distance learners to familiarize them with technology—social software in particular—and to introduce them to a distributed learner community. Learners’ deliberate, preliminary accomplishment of many of those technological tasks may satisfy Roberts’ (2005a) call for preparatory work to make sure that students are already computer-savvy collaborators before they begin collaborative online courses. Arguments suggest that innovation in collective learning calls for diverse communities comprising members with ranges of expertise, congruent goals, meta-cognitive (learning to learn) foci, and various means of communication to satisfy their own needs. Moreover, visionaries suggest that participation in diverse, distributed learning communities will “infuse education throughout students’ lives, orchestrating the contributions of many knowledge sources embedded in real-world settings outside of schooling” (Dede, 2005, *Neomillennial Learning Styles Based on Mediated Immersion*).

For the future of collaboration, Dede hopes that current means of collaboration that are “dependent on shared physical presence or cumbersome virtual mecha-

nisms” will be replaced with elegant and possibly more economical solutions in which “middleware, interoperability, open content, and open source enable seamless information sharing, collaborative virtual manipulation of tools and media, shared authoring and design, [and] collective critiquing” (Dede, 2005, *Implications for Higher Education’s Strategic Investments*).

So perhaps whatever decisions we make as educators with regard to collaboration should be as remote as possible from tool dependent and as comprehensive as possible of what is both available and of value to learners over ever-broadening and diversifying educational networks. Chapter 26, *Techno Expression*, comprises broad visions of such networked learning.

Stories, strategies, tools, and tactics to come

The next section of this chapter retells stories of online collaboration to underscore impacts that educators’ technological choices and teaching strategies can have on learners, to reflect upon learner-centred outcomes, and to suss out lessons to learn from experience—if not models to guide us. After reading those stories, readers may like to explore tools and tactics of learner engagement catalogued in Chapter 25, *Tools for Online Engagement and Communication*.

Learners’ stories of online collaboration

In this section are three stories from learners about online collaboration in university undergraduate and postgraduate courses. All three stories derive from a *SCoPE* seminar on collaboration (Beaufait, 2006). Narrators retell their stories for this collection and post-hoc respondents reflect on each.

These three stories bridge a millennium, span a decade of online education, and perhaps show it at or near its best. Sylvia’s story is a recollection of project-based learning over 10 years ago in an undergraduate course at university. Beyond the Mines of Bhoria is a recollection of a post-graduate certificate course about three years ago. Bonnie’s story relates experience in problem-solving and project-based learning during an online graduate course in 2005.
**SYLVIA’S STORY**

One of my first online courses was also my first exposure to successful learner collaboration in a university-level course. The instructor used a “jigsaw” model to organize a research and learning management software design project as follows:

- **Phase I (4 weeks)** was a general orientation to issues and an introduction to the software product we would be evaluating.
- **Phase II (5 weeks)** involved group investigation into the design of technology.
- **Phase III (4 weeks)** involved a team design project incorporating the interdisciplinary perspectives researched during Phase II.

During Phase I we engaged in a debate activity that gave us an opportunity to become familiar with the beta software, and also to sink our teeth into some design issues. For Phase II we randomly formed five groups, each with the responsibility of researching and developing expertise in one of the assigned design perspectives and to prepare a summary of findings.

1. Human-computer interactions design
2. Educational software design
3. Group communication and computer conferencing design
4. Collaboration and groupware design
5. Hypermedia systems and tools design

With such a short time frame to complete this phase, it was essential that the instructor scaffold our work by providing the main topic areas, a selection of core readings, and a recommended format for organizing the report and presenting our work at the end of Phase II.

We were then divided randomly into five new groups using the Jigsaw model. Each new design group consisted of an “expert” from each of the former research groups. Using this model, each learner had something unique to contribute to the group based on their earlier research. The final outcome was a group design plan for refining the learning management system software we were using in the course.

We came back together as a whole class to share and discuss our final design projects with developers from the software company. Functioning as software design teams, we were required to creatively and succinctly articulate our designs and theoretical support for our decisions and defend our work through open questioning by other class members and visitors.

One aspect that made this a powerful, collaborative learning experience was the situated course design. We were assessing the effectiveness of the learning management software as a communication medium for accomplishing our own collaborative work. In addition to drawing on individual areas of design expertise, we reflected on the experience of using the virtual space to accomplish our design tasks. As such, it was an authentic task of using educational technologies in an educational setting.

Scheduled team meetings with the instructor provided a focal point, requiring us to articulate our progress as a group. The structure of these meetings modelled authentic interdisciplinary design team environments. Also, throughout the project we were encouraged to use the learning management system as much as possible. This served two purposes:

1. We experienced first-hand the affordances and limitations of the communication technology under review, adding to the authentic nature of the task.
2. The process of group work was made explicit to assist class members in reflecting on their educational experiences in using the technology. In other words, we were able to use examples from immediate experiences to illustrate shortcomings of the software under review.

Another essential component was that we were clear of what we were working towards. There was a great deal of flexibility in how we chose to go about our work, but we could appreciate how each phase informed the next. We became aware of our own background knowledge, learning needs, and interests. The sequence of full class to small groups to full class to small groups to full class allowed for sharing, checking of our work and progress, then we went back to the smaller groups to focus on the next phase.

I remember what really struck me at the time was how important the instructor’s role was in guiding the process, how supportive she was, but also how little we saw of her throughout the course! The Jigsaw collaborative model was a perfect fit for a research and design project. (Sylvia Currie, personal correspondence, June 21, 2006)

**A reflection on Sylvia’s story**

Sylvia’s story highlights some important points about the use of technology. First, note Sylvia’s point about the instructor providing a scaffold for student learning, which she suggests is due to the short time frame. However, it is important to underline that the time frame is short not only because of the demands of the class, but because the class was conducted online.

We see the instructor providing focal points in time (“scheduled team meetings”) in order to keep students
working towards a goal. It is at this point that we see two potential problems. The first is what happens when an unmotivated student or students participate. The second related point is how we demonstrate that the teacher is active. Sylvia is perceptive enough to recognize the teacher’s participation through the framework that the teacher set up, but other students (and administrators) may not be as perceptive.

Another important point about the use of technology can be seen in Sylvia’s observation that the task the students were set is authentic. In this sense, the technology is not used for recreating the classroom (a common problem with many schemes that are simply content delivery) but for setting up a task that replicates something that might or will be done in the real world.

The final point is that the technology, rather than making each student a clone with similar knowledge and experiences, calls on students to access their individual knowledge and interests and bring these to the table in order to inform other team members. Thus, teachers wanting to use technology successfully probably have to have greater awareness of the strengths and weaknesses of students that are teaching with technology than without, and this stands the commonly expressed fear of technology replacing people with robots on its head.

Another reflection on Sylvia’s story
Sylvia is very clear on what she got from the course and why, and there is very little that I can add to what she said. I shall just mention the points that remain foremost in my mind as a teacher immediately after reading the story.

The first is the important role of teachers’ judgment on key aspects of course design. In an ideal world, some of us might wish to leave more decisions to the students, such as exactly what groups need to be formed, but the teacher in Sylvia’s story had evidently decided that he or she was fully justified in prescribing certain steps in order to get to the desired endpoint on time.

The second is the nature of the endpoint that was chosen in this case. Having a meeting with representatives of the software company scheduled, knowing that guests would be invited, and therefore knowing that being able to articulate one’s thoughts and design proposals beyond the confines of the class was expected, was clearly a very focusing and motivating factor for students. There are clearly some risks in this strategy, because an unsuccessful group would have been enough to create a somewhat embarrassing situation in front of a wide audience, and, more importantly, it might have been difficult to point to any clear outcomes of the course, since everything was framed in the context of the final goal. This points again to the importance of the teacher’s judgment.

In addition to the teacher’s judgment, another thing that is clearly required of the teacher is skill in guiding the process, as well as considerable time spent planning the course. Sylvia doesn’t make it clear what level of student this course was for, but at least it seems likely that it wasn’t a freshman course. We expect that for a freshman course one would be a little more modest in one’s goals. This would be even more true of pre-tertiary education.

Additional comments from Sylvia
Years later while reflecting on this experience I realize how it influenced my ideas about assessment of learning. There was never an expectation that certain content “be covered” or that all students should be leaving the course with the same new knowledge. The nature of true collaborative work is that there is considerable variability in what is learned. It is important to take advantage of the diversity of [learners’] skills and knowledge and appreciate how each learner contributes to the advancement of the group. Assessment strategies that are based on the assumption that everyone is learning the same thing obviously don’t fit. Also grading practices that look at individual work, rather than group processes and accomplishments are difficult to implement. (Sylvia Currie, personal correspondence, August 18, 2006)

ANOTHER STORY: BEYOND THE MINES OF BHORIA
It was a constructivist-collaborative course-build. The instructional plan combined three sections of the same course. Students could introduce themselves by producing courseware supported Web pages. There was one big forum for introducing yourself, get-to-know-ya, hi-how-have-you-been, what’re-ya-up-to messages. Though a peek at an instructor’s view might reveal literally hundreds of unread student messages, they constituted a massive tableau from and through which students could establish identities, draw together, and form obligatory groups for ensuing project work.

Alongside ran a set of course readings, topic-specific discussions, and jigsaw analyses of core concepts. Focused and stimulating discussions with guest contributors prominent in the field rounded out the suite of interactivity.

A course schedule, plus group mates’ diverse experiences, practical needs, and individual interests drove group work on to a plan, a written proposal, and an elaborate framework for a multi-faceted online instructional program. Except to say that our group of four had compatible
personalities, despite diverse socio-cultural backgrounds, let me go into no further details on that point here.

As a student, not only did I realize that the course instructors had collaborated on building and updating the course, it also was evident that they collaborated among themselves as well as with students on group formation. Being in one section didn’t restrict student-to-student interactions with those in another. In fact, all my group mates were from other sections, and another instructor supervised and supported us in our group activities.

It was, all in all, a warm, fuzzy, collaborative production zone, until it was time for peer groupwork assessment. Final group reviews and tweaking of our jointly planned and substantiated product had gone like clockwork: Incremental file-naming, one-author-at-a-time editing, annotation protocols, change-tracking, precise references, and peer-to-peer suggestions got approved, bettered, and confirmed—pass after pass, following the sun around the globe. One by one, we signed off on what was left, proud to have done the best we could under the circumstances, and went to bed ...

The final group assignment was done, and collaboration was over. Our next task was to assess ourselves, and each of our group mates, individually, using an evaluation framework that course developers and instructors had prepared in advance. There was neither negotiation of criteria, nor feedback on results. We submitted individual forms to our individual instructors, and that was supposed to be that. However, one student in our group of four sent complimentary copies to everyone in the group. That assessment closed with an open question: “Why isn’t this assessment collaborative?” but no discussion ensued.

**A reflection on Beyond the Mines**

This story is a useful counterpoint to other stories of great successes with online project-based work. While this too sounds successful, one is left with a feeling of great possibilities left untouched. Of course, this relates to the last area where teachers retain power, which is in assessment. Teachers, at the end of the day, have to turn in rolls with grades, and doing so is an act of responsibility impinging on our efforts to expand our classroom, even as technology stretches it beyond recognition.

All teachers treasure moments when a student returns to thank a teacher for some lesson that was put to use, and I have often, when doing something that stems from a teacher’s guidance, wondered what he or she would think. As the technology puts students together to teach each other, it suggests that we are going to have to create channels to keep teachers in touch with their students.

**Another reflection on Beyond the Mines**

Even in a purportedly “radical model” of asynchronous, computer-supported collaborative learning, as we pointed out in the section on Assessment Schemes above, Roberts finds that educators often continue to base course grades on learners’ individual efforts (2005, p. 8). We see such limitations even in Beyond the Mines of Bhoria.

On a brighter note, in a synchronous computer-mediated collaboration (chat) study, yet still in line with Haavind’s (2006) and Roberts’ (2005) calls for evaluation protocols, Paulus suggests that sterling peer evaluations can indicate equality of participation, even though learners’ reflections may reveal more cooperative and less collaborative interaction strategies such as division of labour. For example, follow-up on the small chat group that Paulus studied revealed that learners “chose to cooperate through individual contribution to the task, rather than collaborate through sustained dialogue about the concepts to be learned” (Paulus, 2005, p. 119). I think the Mines story shows what educators can do more to foster and facilitate formative peer evaluations.

**Confessions of a former post-graduate mine-worker**

It has been years since my first, and hopefully last, adult educational experiences involving largely pre-constructed technological learning environments, built utilizing what instructional designers called modules and shells. On one hand, those learning experiences enabled simultaneous reflection on two leading ed-tech platforms at the time: Blackboard (Bb, hence Bhoria) and WebCT; and rounded out instructional experience using Moodle, an alternative, open-source platform. They also revealed a host of variables in quality of instruction and extent (or limitations) of cooperation and collaboration in online learning environments. On the other, although I continue to adapt and adopt computer-mediated communication strategies whenever they seem conducive to enhancing blended learning opportunities, my stomach still churns in memory of canned instruction often dependent upon educational decisions of remote designers and disengaged instructors. Nevertheless, hope revives as I remember the considerate and engaging peers and educators among whom collaboration was possible despite instructional designs, technological shortcomings, and other staff and student commitments. (anonymous, September 14, 2007)

**BONNIE’S STORY**

In an online graduate class in New Media last summer, I was assigned to a group of four, and we were to produce a learning module both discussing a particular issue of New Media as well as a New Media artifact. The instructors of
the class grouped us according to our experience, expertise, and interests. We were a mixed group of high school teachers and adult educators with differing technical expertise, from almost zero to highly sophisticated. We also had a very strong personality in the group, someone who could be quite opinionated but also very, very funny.

In my mind thinking about this project, I divide the group’s work over the six weeks into two distinct periods: There were the first two weeks when we discussed at length about the project and how we would work on it, and the last four weeks when we worked on the project itself. The group functioned differently at the two different stages of the task: talking about the work versus working on the work itself.

For the first period we used an asynchronous forum and tried to use a wiki. Because the wiki added another channel of communication, we did not use it so much and focused our discussion in the forum space. However, the discussion dragged on and on. No conclusions or decisions seemed imminent. It seemed we were all reluctant to take charge and make a decision. Perhaps it was because none of us wanted to counter the strong personality, who seemed to have quite strong attachments to certain ideas.

Finally we met in a synchronous chat via WebCT’s integrated chat function and managed to make all the very important decisions quite rapidly. Ironically, the strong personality was very amenable to the ideas of others and very happy to accept other ways of doing things.

Once we began work on the project in the second period, our communication with each other became very frequent and very effective, using both asynchronous and synchronous channels. Once we actually had something tangible to work on and to communicate about, we began to really gel as a group, so much that our synchronous chats often digressed wildly into other topics.

We also had various open forums for discussing different aspects of the project, emailed one another, and used wikis as repositories for ongoing text writing. We were now a multi-channel group and it did not seem onerous because we had so much to discuss. Once we reached the end of the project, I had very good feelings about our group and our project was fabulous.

In retrospect, if we had had defined roles at the beginning (or role interdependence), for example a project manager, a web designer, a subject matter expert, etc., our decision-making at the beginning might have been smoother. I think that we were four very socially and culturally different people and we encountered problems with just ‘discussing with our group’. If that had been the end of the group’s purpose, I think we not would have felt our group had been very successful.

However, once we began work on the project itself, we attained high positive interdependence in terms of goals and sub-tasks because each of us was responsible for a portion that others depended on. Having the tangible product itself seemed to grease the flow of communication. Because we had to create something, working on a very real, very tangible artifact facilitated our communication, helped us, and quite frankly, forced us to overcome our difficulties, all without our being conscious of it.

Our goal was completion of the product, not just the communication itself. Because of that I think that the communication issues became just another problem to solve rather than turning into a potential drama. I think that one of the best reasons for product/project-based collaborative learning is that in order to be successful, groups put into practice all the important aspects of cooperation without having to be fully conscious of it, or being didactically taught it. (Bonnie Johnston, personal correspondence, May 26, 2006)

A reflection on Bonnie’s story

Bonnie’s story raises an interesting problem. What if her group had not been able to meet synchronously? Would they have been able to sort out the problems? Or would they have given up and been convinced that the technology itself was the source of the problems? Bonnie’s remedy, of having assigned roles for members of the team, while solving her team’s problem, might have been unnecessarily restrictive for another team or could have pushed a non-participating or non-performing member of the team off to the side.

Bonnie is correct that one of the best reasons for project-based learning is that it is based on aspects of cooperation of which students may not be fully conscious. However, this also suggests that teachers must be fully versed on all aspects of project-based learning in order to troubleshoot learning processes. Complicating this is the fact that classrooms can become cross-cultural. So what happens when there is disagreement about what actually is cooperation?

Another reflection on Bonnie’s story

Bonnie’s story reinforces my thinking that teaching about collaboration should be kept to a minimum, except in very specific circumstances. As she says, how to use tools is a problem of sorts, but it needn’t be such a major one, and if the motivation (usually creating some kind of product) exists, there is no reason why problems of this sort can’t be solved.

The fact that Bonnie’s group used a range of tools suggests first that synchronous and asynchronous tools both have important roles to play, with the former per-
haps being crucial in groups where delivery of a product is very time-sensitive. This story may also indicate support for the idea that different asynchronous tools work in different ways and are difficult to mold to non-archetypal uses. But where that difficulty leads us is a matter of interpretation.

One interpretation would go something along these lines: A forum is necessary to discuss specific issues in both threaded and archived form; email is important for very time-sensitive discussion-type communications (and perhaps where two members have an interpersonal problem with another member); a wiki is necessary for the actual creation of the product. Another interpretation is that, because the participants appear not to have been given orientation in the use of tools, they muddled through somehow, without any tool-related drama, but without really mastering any of the tools and possibly suffering inefficiencies, and by extension also possibly turning in a product that was not quite as good as it could have been.

Such orientation itself is problematic, first because there is no clear consensus on how to use each tool, and second because it might reduce the possibilities for group-generated discoveries regarding the tools. However, the group might have benefited from instruction about the possibility of starting discussion in the wiki itself. This could avoid the problem of the wiki being seen as redundant in the first phase and, consequently, members being less fluent in its use when the second phase started. It might also have alleviated the relative sterility Bonnie experienced in “just discussing with our group”, because a wiki could facilitate the later incorporation of things initially offered as pure opinions, but actually included as seeds of a product.

One obvious question is whether they needed, or benefited from, multiple wikis and forums. Another tool-related question regards the use of really simple syndication (RSS), which can provide convenient regular updates of recent messages and changes: I wonder whether it might have been possible to reduce the number of channels, with possible efficiency gains, if RSS had been incorporated.

After these negative-sounding comments on tools, it may be appropriate here to reiterate: As Bonnie said, the members of the group were able to negotiate problems as they arose without any catastrophic consequences, and had the opportunity to experience first-hand a range of tools, while getting a sense for what works and what doesn’t work for each one.

Another point in Bonnie’s account is that it is very difficult to work together in a meaningful way without a clear goal. In a formal educational context, that usually has to be a goal imposed by, or negotiated under the guidance of, a teacher. The first two weeks might have worked better if they had been turned into a task to get a broad grasp of a body of knowledge, while getting to know the other group members and negotiating how to approach the topic and tasks to follow. Thus there would have been something very substantive to discuss in the forum, and the discussion about process could occur in the background, if necessary. Even more radically, the group could have been tasked with reading as much as they could manage of a large body of knowledge and summarizing it on the wiki that they would subsequently use for actually doing the project.

Finally, although some members are described as being at “almost zero” in terms of technical expertise, in other respects, they are mature and sophisticated compared to the students that most teachers will meet in most contexts. Thus, any kind of problem mentioned by such students has the potential to be many times magnified in other contexts. This reinforces the point made above that goals need to be clarified, and tasks not clearly linked to those goals have a high risk of failure. Therefore, teachers may need to come up with various ways of making explicit these linkages, perhaps by assigning tasks like reading a body of literature.

**Additional comments from Bonnie**

*Reflecting further on this collaborative experience, I keep coming back to the group’s interpersonal dynamic. The first phase of completing the project was seemingly spent worrying about how we would work and doing busy work on the project itself. However, I think we were also doing the more important work of feeling our way with one another, learning how each of us interacts, and exploring which tools worked best for our unique mix of characters. While on the surface the initial phase felt fruitless, it was in fact creating the bedrock of how our group would work together. (Bonnie Johnston, personal correspondence, August 29, 2006)*

**WHAT THESE LEARNERS’ STORIES REPRESENT**

You could argue that those three stories are cream of the cream—not at all representative of learners that you might expect or hope to nurture or teach in ways of collaboration. You could accurately describe the learners whose stories we have shared as generally advanced, mature, motivated, and technologically sophisticated learners who continue to work, often collaboratively, with educational technology. However, with respect to online learner collaboration, what such learners are able to engage in, succeed at, and recollect, with so much
insight on learners’ perspectives, still serves as a framework of inspiration for what we might expect of current and future online learners.

It is a cliché to invoke the notion of a wave of the future. However, as technological advances occur, we find ourselves with more and varied opportunities to interact with people unconstrained by time and space. To take full advantage of these advances, collaboration, in some form, is a necessity. Since a field like education potentially has the luxury of experimenting with collaboration for collaboration’s sake, by examining what collaboration may look like in ideal circumstances with ample preparation time and little or no pressure to produce end-products, we feel that a close examination of research in that field suggests possibilities for other professionals to take up in their own fields and teaching endeavours.

Chapter summary

“Great discoveries and improvements invariably involve the cooperation of many minds. I may be given credit for having blazed the trail but when I look at the subsequent developments I feel the credit is due to others rather than to myself.” (Alexander Graham Bell)

“Creativity arises out of the tension between spontaneity and limitations, the latter (like the river banks) forcing the spontaneity into the various forms which are essential to the work of art or poem.” (Rollo May, 1975, p. 115)

We have presented background on circumstances and factors that ideal collaborative learning in an online environment might require, and we have indicated potential pitfalls of such collaboration. The first pitfall is definitional, and we follow researchers’ attempts to draw distinctions between what is cooperative and what is collaborative.

Understanding that collaboration represents a deeper and richer notion than cooperation, we examined how diversity in the classroom naturally lends itself to collaborative learning, and we then looked at the roles of teachers, moving on to focus on the core of such learning, which is the group. This served as background for a variety of issues such as tools, assessment, and a range of other concerns that may influence the success or failure of collaborative endeavours. It is noteworthy that the learners’ stories highlight assessment as an area where advances in collaborative learning next need to take place. Perhaps this should not be surprising, given that learners’ primary feedback from a course is assessment.

Although rote memorization may once have represented the be-all and end-all of learning, we have arrived at a more sophisticated notion that what needs to be evaluated is how learners use the knowledge they acquire. However, there is no consensus on how such evaluation should operate. In this sense, collaboration, as the Rollo May quote (above) suggests, can be regarded as a way not only to bring new material to the learner, but also to foster collaborative endeavours that may help us to reach a consensus on evaluation, a consensus that may provide seeds for ubiquitous, spontaneous, continuous, and collaborative learning.

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We would like to thank Sylvia Currie and Bonnie Johnston for kindly contributing their stories to this section. We appreciate all the time and effort that they devoted to reflecting upon their experiences, while Talking the Walk (Beaufait, 2006) and writing and revising their stories afterwards. Thank you, Sylvia and Bonnie, for sharing your stories.

Glossary

Collaborative learning. Learning techniques that emphasize student-to-student interaction in the learning process (McInerney and Roberts, 2004).

Cooperative learning. Learning techniques where students are required to work in small groups, usually under the guidance of the instructor (McInerney and Roberts, 2004).

References


On-line Collaboration: An Overview