CSCL: Theories, Methods, & Applications

Spring Semester 1998

Instructor: Timothy Koschmann (tdk@cs.colorado.edu)

By Rogerio A. dePaula

Collaborative learning is defined:
- A socially situated learning process (although any kind of learning process is socially situated in some respect),
- Learners actively engage in collaborative construction of a shared understanding.
- Learners make intended efforts to listen and speak with each other.

It involves:
- Communications as means for transforming individuals and group prior understandings through processes of negotiation and convergence of meaning
- Thinking through processes
- Incorporation of others' ideas.
- Reaching a stage of understanding that none of which would have reached individually

Collaborative learning can be described as a dynamic and evolving learning process that integrates the following elements:

_ Active Learners, that is, students who take the Ownership of their Learning Processes

_ Intentional Participation and Learners' Engagement

_ Individual and Collective Knowledge Construction and Thinking Through Processes.

	Traditional Settings	Collaborative Settings

	Lectures – Instructor Centered	Group Discussions – Learner Centered
Social Structure		
Learning Model	Information Acquisition	Collaborative Knowledge Building
Primary Source of Information	Teachers & Textbooks	Peers & Discussed Information
Communications Modes	Transmission	Transformation
Flagging Misunderstandings	Tests and Essays	Peer Discussions
Learning Outcomes	More Superficial	More In-depth
Motivation	Grades	Students' Engagement

	Traditional Settings	Collaborative Settings
Social Benefits (Social Goods)	Low	High
Intended Effort to Understand	Medium	High
	Traditional Settings	Collaborative Settings
Time Efficiency	High	Low
Effective Group Size	Small – Large	Small
Common use for Technology	Broadcast of information	Group discussion

Comparison between traditional and collaborative learning settings

Grudin's Challenges	Email (Grudin 1994)	Newsgroup	DynaClass
Who does the work and who benefits?	Equitable balance for sender and recipient	Low contribution costs, relative discretionary	High contribution costs, no clear benefit from students' viewpoint
Critical Mass Problem.	Virtually everyone uses	Large audiences	Part of a small class
Disruption of social processes	Compatible with social practices	Adapted to support virtual communities	Extra-activity, uncommon course activities
Exception handling	Low additional cost for re-sending an email	Low cost – very informal repository of information	High cost – the system crashed few times

Grudin's Challenges	Email (Grudin 1994)	Newsgroup	DynaClass
Unobtrusive accessibility	Nowadays, it is relatively easy to use	As easy as email	Problems accessing and using it
Difficulty of evaluation	High discretionary value, hard to evaluate in an organization context.	High value for those communities, relative discretionary value	Hard for students to evaluate the benefit from collaborating
Failure of intuition	New email-client interfaces have greatly improved their usability	Newsgroup clients are as powerful as new email clients	Well known HTML interface, however too slow

Grudin's Challenges	Email (Grudin 1994)	Newsgroup	DynaClass
Acceptance	Its use has spread mostly from academic and public sources, and nowadays virtually everyone uses it.	Internet Virtual Communities highly adopted it	Mixed reactions from students. Some students adopted the technology, others sporadically made contributions.
Main Purpose	Interpersonal communications and coordination	Information flow, Group communications and coordination	Collaborative discussions – Knowledge building

Email, Newsgroups and DynaClass Comparison

Analysis of results:

- We assumed that because students were self-motivated to learn about computer supported collaborative learning, they would engage in deep discussions over DynaClass.

- We underestimated their capability of accommodating their needs of interacting with one another into such time constrain

- We overestimated of students' ability of collaborate with one another and create a class community

- We underestimated of the effects of technology affordances and technological problems

In conclusion

it was shown the dialectic aspect of technology:

- On one hand, students' actions shaped how the technology was used.
- On the other hand, the technology shaped students' actions.

One does not want to replicate classroom practices over a communications technology, whereas such technologies have to expand the possibilities of communicating, learning and collaborating.

There is a need for reconceptualizing technology affordances of computer support collaborative learning technologies, and better understanding social practices in which the use of such technologies takes place.

Appendix – Trying to answer Gerhard's last question:

Gerhard raised a very important issue. So, how do we go about implementing collaborative learning activities based on the experience gained with this class?

Classroom Practices:

- Create class communities – foster students to engage in collaborative activities that emphasize (and even need) group collaborative interactions – such as class projects. In so doing, students get to know each other more quickly.

- Make it explicit for students the reasons why collaboration and collaborative learning may enhance their learning experiences, and the benefits from so doing. For what do we need to collaborate or even use such a technology?

- Participation grades may facilitate the initial startup, and adoption. But do not emphasizes grading, because it may inhibit more authentic and long-term collaboration.

Technology Affordances:

- Reconceptualize the use of the technology – it has to be seen as a tool for supporting knowledge construction activities, not just communications and coordination (even though those two aspects are important)

- Create explicit mechanisms for integrating and interconnecting information on the Database – such as CSILE's knowledge map

- Create robust systems! it is fundamental that systems for supporting classroom activities are reliable, fast, intuitive.

    - Have in mind that there is not a second opportunity for deploying or even using a technology – especially when it is an extra-activity

    - People do not feel comfortable using systems that they do not trust

    - People use previous understandings about the use of technology when using a newly developed one (Technology frames [Orlikowski, 1992 #14]).

- Integrate Technology and normal class activities. Make technology part of normal classroom activities. It is important to create an authentic use and need for it.