*Initial reason for examining collaborative learning:*

_Societal advances in technology and changes in the organization of infrastructure has placed greater emphasis on teamwork._

*Collaborative Learning Experiment*

**Experimental Questions:**

Will there be a significant difference in achievement on a test on “drill and practice” items between those who learned collaboratively and those who learned individually?

– “Drill and practice”: facts and items that pertain to comprehension of the concepts

Will there be a significant difference in achievement on a test of critical thinking items between those who learned collaboratively and those who learned individually?

– “Critical thinking”: items that involve analysis, synthesis, and evaluation of the concepts

*Subjects:* a total of 48 undergrads in a basic electronics course (1993) – Subjects given pre-test, a learning period, and then a post-test.

*Results:*

– For drill and practice: saw slight increase for collaborative vs individual learning group (13.56 vs 11.89 out of 15)
– For critical thinking: saw major increase for collaborative vs individual learning group (12.21 vs 8.63 out of 15)

*Student Input:*

– Positive Academic Aspects: helped through understanding pooled knowledge and experience; helpful feedback; stimulated critical thinking; new perspectives of ideas
– Positive Social and Emotional Aspects: more relaxed atmosphere; **FUN**; greater sense of responsibility; made new friends
– Negative Aspect: wasted time explaining to other people

*Social benefits:*

Helps to develop a social support system which leads to diversity understanding among students and staff; establishes a positive atmosphere; develops learning communities

*Psychological benefits:*

Student centered instruction leads to an increase in student self-esteem; cooperation reduces anxiety; develops positive attitudes towards teachers

*Academic benefits:*

Promotes critical thinking skills; involves students actively; classroom results are improved; models appropriate student problem techniques; large lectures can be personalized; helps motivate students in a specific curriculum

*Teaching technique benefits:*

– Collaborative learning lends itself well to a variety of assessment types

*What do we achieve from learning in collaboration?*

– Higher achievement and greater productivity;
– The chief achievement of collaborative learning is to develop social interaction skills;
– The purpose is to promote deeper learning as opposed to surface learning

*Personal Examples:*

– Course taught by Wendy Hanna-Rose at Fudan University
– The students in our two sections of BMB 398B seem to enjoy communicating with each other about the course material. When discussing problem sets, they actively work towards a solution

*How might these articles inform better facilitation for supplemental instruction staff?*

– Do you really need to ask?


