

2. COLLABORATIVE LEARNING

Collaboration intensifies the human aspects of learning. It increases our learning potential and empowers us with the knowledge of others. It is an ancient educational model (knowledge building in pairs by Plato and Socrates, study groups at medieval noble courts and constructive learning of the Reform Pedagogy movement).

Collaborative activities are democratic by nature, but require careful planning, monitoring and scaffolding by the teacher. Collaboration makes group members more flexible and eventually replaceable as the group as a learning community shares knowledge and experiences.

Concepts of collaboration vary from country to country - some projects are more mentoring-intensive, others aim at substituting teacher work through student engagement. In order to develop successful strategies and teaching aids, mental models and learning theories have to be used. Some important contributions in this area include Kenneth Brophy's Collaborative Learning Theory, Action Learning Theory by Ray Revans and Entrainment Mental by Jean Francois Chosson.

The organization of knowledge in collaborative learning projects is crucial: currently we see rigidly controlled input and output methods and linear curriculum structures, which do not generally support the collaboration of learners. In a collaborative learning environment students should acquire *co-operative behaviour and learning content* at the same time.

ICT can support but may also hinder collaboration. All ICT-based collaborative projects should include face-to-face components to motivate learners and increase their social skills as well as their learning skills. Important bodies of research support the use of collaborative learning through ICT at all levels of education - such as:

- CSCL environments and cognitive tools e.g. Knowledge Forum by M. Scardamalia and K. Bereiter, University of Toronto.
- International digital projects of the European School Net (EUN).
- SEMIK Project which is concerned with collaborative learning experiments, created by H. Mandl at the University of Munich.
- KOLUMBUS Learning Space developed by the University of Dortmund.
- Collaborative mentoring at La Villa Media, Grenoble.
- The Jigsaw Classroom Method proposed by Aronson.

Collaborative learning methods are generally *taught but not experienced directly* as part of Theory and Practice of Learning studies in teacher training. Theoretical knowledge is not applicable in classroom practice unless teaching methods are associated with this knowledge.

Assessment Issues

Collaborative learning requires suitable assessment methods that value teamwork. If individual achievement is the only valuable outcome, group members will compete instead of supporting each other. Traditional examination and grading systems discourage teamwork.

Research at Budapest University on personality traits and work in CSLEs has found that the personality of the learner and teacher contribute hugely

to the success or failure of participation in a collaborative learning experience. Some characteristics are modifiable through successful mentoring but certain learning and teaching styles are not. In Australia the "Electronic Peer Review" method under development at the University of Adelaide and the computer-based essay evaluation software used at the University of Melbourne offer promising assessment alternatives.

School disciplines or learning areas allow for different collaborative methods. Some knowledge items, skills and abilities can be fostered through collaboration while others require frontal or individualized approaches.

ICT can support accurate and detailed assessment of the collaborative process, but privacy needs to be protected and too much control avoided. Some educators believe that the collaborative process should not be monitored and only the outcomes should be assessed - others find ICT-based evaluation of collaborative learning important for developing successful teaching strategies.

Ideas for Action

Collaboration as a learning activity should be encouraged at all levels of education and professional life. Present assessment practices - both at school and in professional life - do not support co-operation.

Mental models of learners and *learning models* should be conceptualized before planning a collaborative learning project.

Human aspects of collaboration in an ICT-supported environment should be carefully studied and the results used in CSLE design.

Widely used ICT-based learning tools and environments should be assessed to find out if and how they support collaborative learning and other contemporary educational paradigms.

Collaboration needs a supportive institutional environment for effective implementation. *ICT acts as a catalyst, evaluator and moderator* for collaborative learning and makes desirable communication, mentoring and co-operation practices easier to realize with large groups of learners. Face-to-face teaching and tutoring is and will always be, however, at the core of education.

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