

Computer Supported Collaborative Learning (CSCL)

Introduction

- ICT in education = challenge
- Many different forms
- ICT -> ICT

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Content

- Theoretical framework
- Collaborative learning with ICT: types
- Synchronous vs asynchronous
- First example: educational sciences
- Second example: medical students
- Third example: peer tutoring
- Assignment
- Questions, conclusions & guidelines

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Theoretical framework (1)

Social constructivism

- Active creation of knowledge
- Based on personal experiences
- Meaningful learning
- Multiple perspectives
- Sharing and discussing perspectives

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Theoretical framework (2)

- Learning is not an individual affair
- Knowledge construction more important than knowledge transfer
- Emphasis on reflection
- Knowledge is constructed from (social) context
- Learners = designers of several complex representations of knowledge
- CL => new skills in different domains

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Collaborative learning with ICT: types

- | | |
|------------------|---------------------|
| ■ Synchronous | ■ Asynchronous |
| ■ 'classic' chat | ■ E-mail |
| ■ 2D-chat | ■ Listserv |
| ■ 3D-chat | ■ Newsgroups |
| ■ MUD/MOO | ■ Groupware |
| ■ Active Worlds | ■ Forum |
| ■ ... | ■ Discussion groups |
| | ■ Fle3 |
| | ■ Belvédère |
| | ■ ... |

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Synchronous – asynchronous (1)

- Time dependent
- Brainstorming, decision making.
- Small groups (3-5)
- Short period (max. 1h)
- High premium on quick thinking & writing
- More flexible (anytime)
- Higher-level knowledge
- Several threads
- Larger groups
- Delayed feedback syndrome
- Equal opportunities

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Synchronous – asynchronous (2)

- More off-task
- Danger of cognitive overload
- Group feeling
- Lurking
- Often difficult to survey
- Thorough preparation necessary
- Thorough thinking
- External motivation necessary
- Contributions can easily be saved
- Time to search for information
- Lurking
- Thorough preparation necessary

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First example (1)

Online links:

[Website](#)

[Discussion groups](#)



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First example (2)

- Participation was a formal part of the curriculum
- One try-out
- 4 discussion themes
- **Schedule:** 3 weeks per theme
- For every new theme:
 - Minimum one individual contribution to the task, use of theory is required
 - Minimum one reaction to another students' contribution
- **Moderator:**
 - Focus on process, not content

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First example: Structuring tools

- One possibility: the use of roles
 - Functions/duties or responsibilities that guide individual behavior and regulate intra-group interaction (Hare, 1994)*
- Advantages:
 - Stimulating group members' awareness of the overall group performances and each members' contribution (Strijbos, 2003)
 - Bridging over periods of silence (Avis, 2000)
 - Quicker, more consistent level of interaction
 - ...

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First example: 4 roles (1)

- "moderator": closely (every 2 or 3 days) monitoring the discussions in the discussion environment and interjecting praise, offering advice, answering questions and posing critical questions, stimulating the other groupmembers to actively contribute.
- "theoretician": making sure that at the appropriate theory is given a chance, indicating which aspects, relevant theoretical knowledge or information lacks.

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First example: 4 roles (2)

- "summarizer": summarizing the contributions and premature solutions of the students in the discussion groups. Indicate the different point of views and trying to make some provisional conclusions.
- "source searcher": looking for additional sources, for additional information so that students were prompted to look further than the available book.

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First example: Tasks assignments

- In line with constructivist principles, the discussion themes are based on real-life authentic situations
- The assignments for all groups consisted of the same learning goal, context, inquiry expectations, time requirements, and deliverables.

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First example: Examples of tasks (1)

- developing an approach to integrate students with an emotional disability into the regular school system, starting from a particular view (behavioristic, constructivistic);
- developing a training for managers from a particular company, starting from a particular view on education;
- developing an online learning environment for a particular course for higher education students;

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First example: Examples of tasks (2)

- the implementation of a new curriculum for nurses;
- visiting a virtual museum and discussing whether it is a constructivistic learning environment, making a checklist and making adjustments to improve the museum and discussing whether these adjustments were in line with a constructivistic view.

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Second Example (1)

- Context
 - During clinical rotation pediatrics
 - 6th-year students medicine (N=49)
 - Anytime / anywhere
- Aim
 - Enhance reflection and critical thinking
 - Patient management and treatment

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Second Example (2)

- Approximately 4 to 5 students per month
- Participation obligatory
- Duration of case discussion: 2 weeks
- Two cases discussions ran simultaneously
- In total four case discussion per month
- Information about patient history, complaints and diagnosis provided.

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Second Example (3)

- Two roles:
 - Moderator
 - Stimulate other students
 - Instructor versus student
 - alternative searcher:
 - Search for alternatives

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Third example: Peer tutoring (1)

- Definition

«People from similar social groupings who are not professional teachers helping each other to learn, and learning themselves by teaching» (Topping, 1996)
- Variants
 - Cross-age peer tutoring
 - Same-age peer tutoring

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Third example: Peer tutoring (2)

- Cross-age peer tutoring
- 2 tutors (4th year students) per discussion group
- 12 tutees (1st year students)
- Participation was a formal part of the curriculum
- One try-out during a week
- 6 discussion themes of 2 weeks each
- Requirements: minimum 2 contributions for each tutee
- Task assignments: In line with constructivist principles, the discussion themes are based on real-life authentic situations

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Third example: Peer tutoring (3)

- Tutor preparation
- Intervisions (two-weekly)
- Tutors give support
- Gradual transition from tutor-centered to tutee-centered learning activity
- Model, coach, consultant

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Assignment

- Select a subject and context
- Develop a task
- Put yourself in the role of the student / docent
- Use the following guide

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Guide

- Type of task: case-based, problem-based, ...
- Target group (freshmen vs. advanced level students, group size)
- Goals (knowledge, skills, attitudes)
- Availability of computers / networks
- Practical organisation: time, frequency, group size, homogeneous vs. heterogeneous groups, structuring tools, sources, guidelines, ...
- Evaluation / assessment (students and system)

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Presentation

- Present
 - Target group
 - Goals
 - Organisation
 - Problems, questions,
- Discussion

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Non-participation (1)

- Cause
 - frustration
 - appreciation / assessment
 - not appealing
 - waiting for each other
 - task not clear
 - no communication experience

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Non-participation (2)

- Solutions
 - *frustration*: helpdesk, exercises, face to face introduction, ...
 - *appreciation / assessment*: CSCL = serious effort => (formal) appraisal
 - *not appealing*: redesign task

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Non-participation (3)

- Solutions
 - *waiting for each other*: setting participants at ease + clear deadline
 - *task not clear*: clear task description & expectations, script/manual
 - *no communication experience*: be detailed about frequency, what a good message looks like, and deadlines

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Questions

- How do you
 - get students involved
 - foster individual students' knowledge construction.
 - foster student interaction
 - stimulate collaborative learning in these environments

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Guidelines (1)

- Good technical support
- Formal character
- Clear link with course goals (e.g. link with face to face sessions)
- Clear expectations / deadlines
- Common goals

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Guidelines (2)

- Individual accountability versus shared responsibility
- Follow the discussions threads
- Use scripts or structuring tools
- Select the task carefully
- Complexity and the nature of the task
 - challenging tasks in order to get students engaged.

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