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FAKULTÄT FÜR MATHEMATIK, INFORMATIK UND STATISTIK
INSTITUT FÜR INFORMATIK
ARBEITSGRUPPEN MEDIENINFORMATIK UND
MENSCH-MASCHINE-INTERAKTION

Group Mirror

From Mirroring to Guiding

Rea Schmidt

1. Problems and Aims

2. The Collaboration Management Cycle

3. Three types of tools

- Mirroring tools

- Meta- cognitive tools

- Guiding systems

Problems:

- Prior Knowledge

- Motivation

- Roles

- Language

- Behaviour

- Group dynamics

Aims:

- Understand, explain, and predict patterns of group behaviour

- Support group learning processes

- Determine how to structure the environment in which the collaboration takes place

- Regulate the student interaction during the learning activities

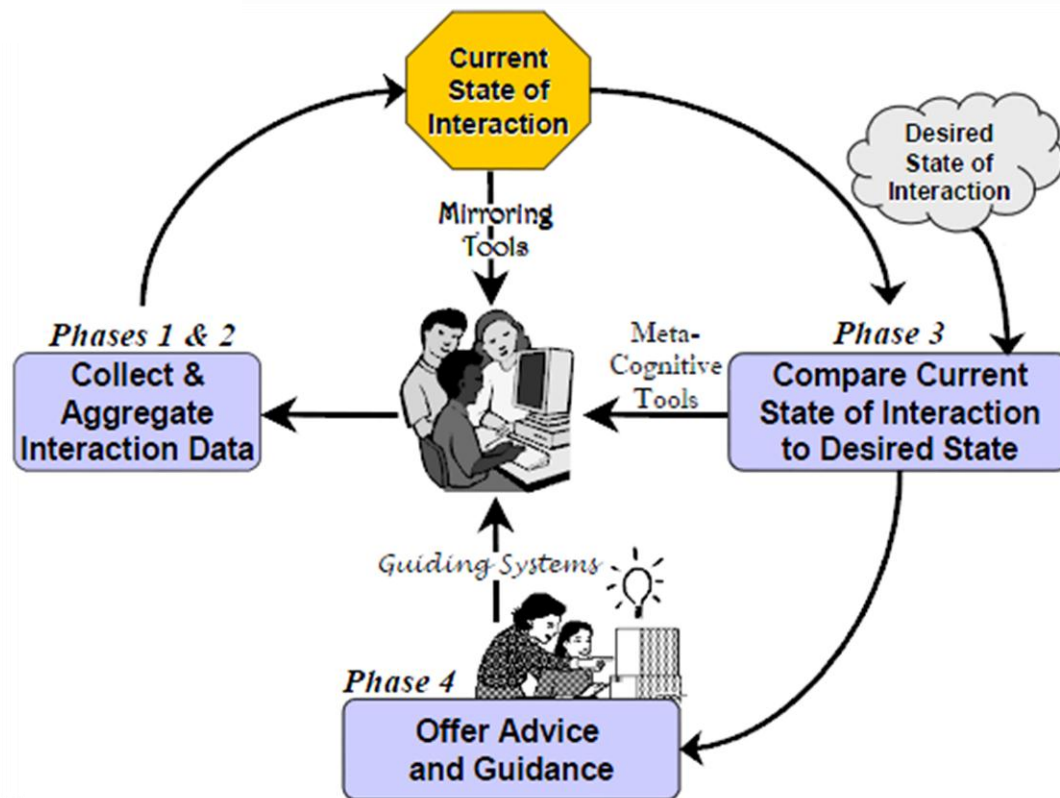# The Collaboration Management Cycle

Figure 1. Collaboration Management Cycle

Three types of tools

1. Mirroring tools

- Collect data

- Reflect this information back to user

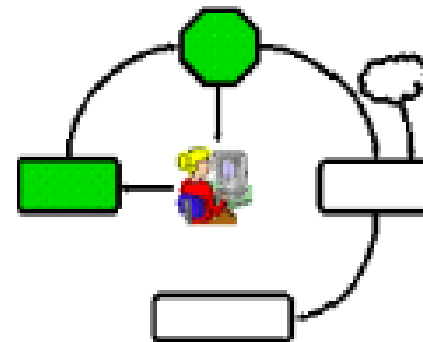- Responsibility for making decisions: User

Figure 2. Mirroring tools

Three types of tools

2. Meta- cognitive tools

- Provides the referents needed by the learners or coaches to diagnose the interaction

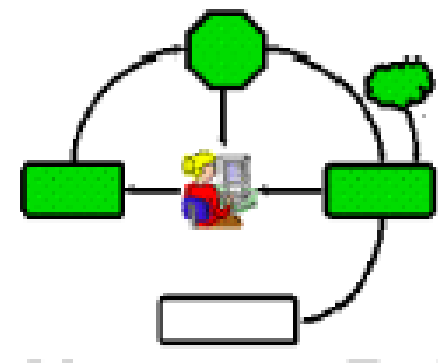- Responsibility for making decisions: User

Figure 3. Meta- cognitive tools

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Three types of tools

3. Guiding tools

- Perform all the phases in the collaboration management process

- Propose remedial actions to help the learners

- Information typically hidden

- System uses information to make decision about
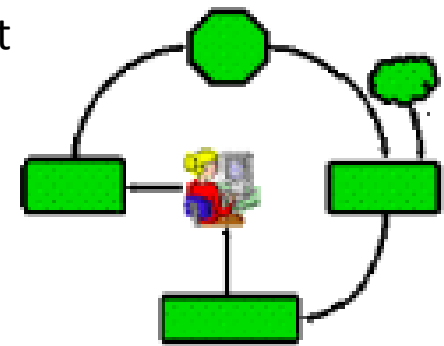
  how to moderate the group's interaction

Figure 4. Guiding tools

A REVIEW OF SYSTEMS THAT SUPPORT COLLABORATIVE LEARNING

Mirroring tools

Chat circles

- Running since 1999

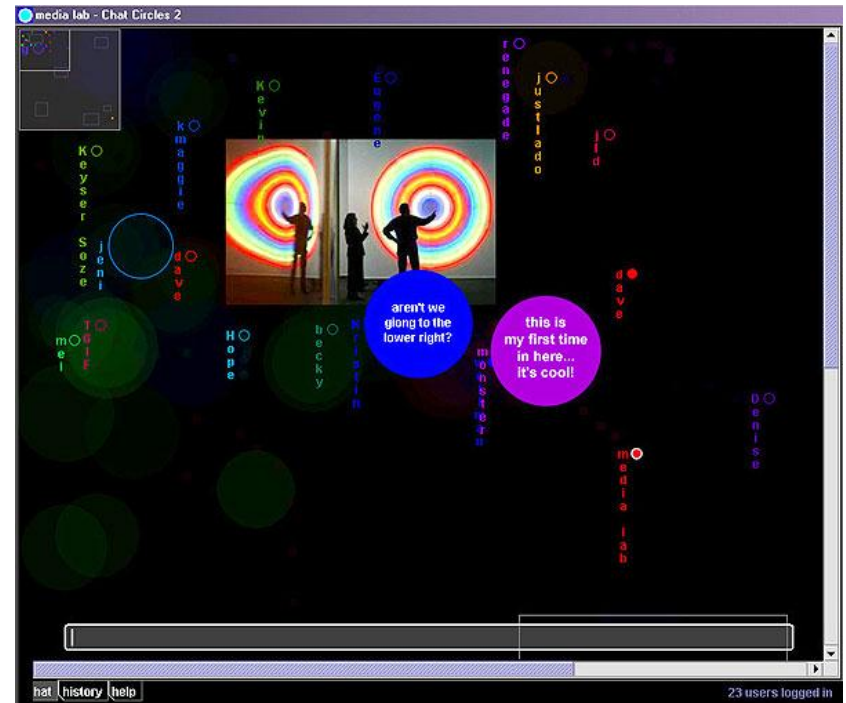- uses abstract shapes to convey identity and activity

Figure 5. Chat circles

Meta-cognitive tools

Jerman

- Solving a problem

  - Visualization

  - Chat
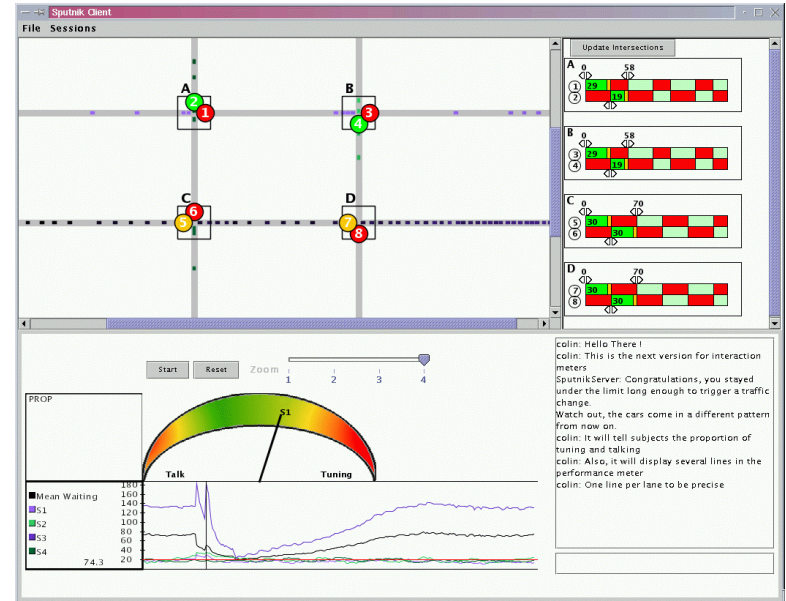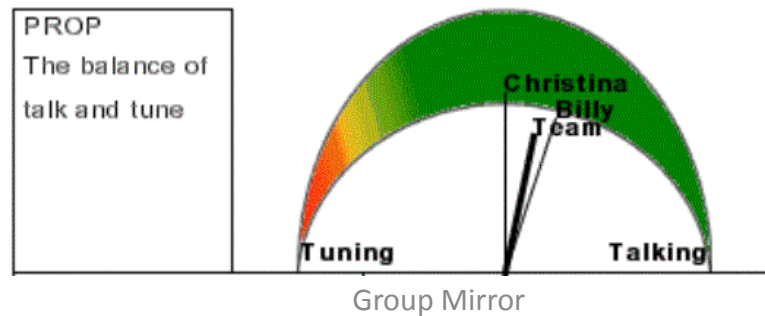
- Number of messages each student
  has sent

Figure 6. Jerman

Guiding tools

COLER Workspace

- Individually workspace

- Collaborate to produce Entity- Relationship model

- Feedback to the student

  about diffrences

Figure 7. COLER

Guiding tools

HabiPro

- System includes a simulated peer agent that detects off-topics word in the students utterance
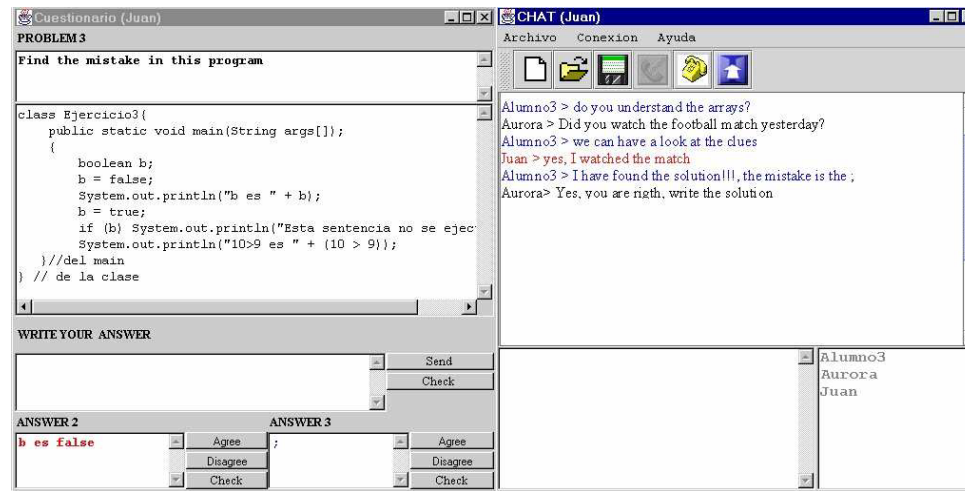

Figure 8. HabiPro

Mirroring tools

System	Input data	Output	Expected function
Chat Circles (Donath, Karahalios & Viegas,1999)	Dialog in an unstructured virtual space	Graphical visualization	On-line social awareness

Meta-cognitive tools

System	Input data	Output	Expected function
Jermann (2004)	Chat and problemsolving actions	Graphical visualization	Teachers: Analyze interaction Students: Self regulation

Guiding tools

System	Input data	Output	Expected function
COLER, (Constantin o González et al., 2002)	Shared and private actions, dialog	Coach	On-line feedback of participation & workspace differences
HabiPro, Vizcaino (2001)	Shared workspace actions, student preferences dialog	Coach	Detection of off-topic interaction & on-line guidance to students

Image sources

Figure 1. Collaboration Managment Cycle
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.4

Figure 2. Mirroring tools
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.7

Figure 3. Meta- cognitive tools
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.7

Figure 4. Guiding tools
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.7

Figure 6. Jerman
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.14

Figure 7. COLER
AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008): From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo. S.25

Figure 5. Chat circles
http://alumni.media.mit.edu/~fviegas/projects/chatcircles/ (16.06.2011)

Sources

AMY SOLLER, ALEJANDRA MARTÍNEZ MONÉS, PATRICK JERMANN & MARTIN MUEHLENBROCK (2008); From Mirroring to Guiding: A Review of State of the Art Technology for Supporting Collaborative Learning, University of Oslo
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PIEREE DILLENBOURG & FRANK FISCHER (2007): Basics of Computer-Supported Collaborative Learning. Zeitschrift für Berufs- und Wirtschaftspädagogik. 21, pp. 111-130.

http://www.muehlenbrock.de/publications/Muehlenbrock-ITS%20W9%20Proceedings.pdf (16.06.2011)

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Vielen Dank für eure Aufmerksamkeit!