

CSCL 2005 Panel
CS in CSCL

Cognitive Science Perspective

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Roles of C in CSCL

- C plays an essential role for creating collaborative learning situations
- in addition, C can play vital roles in there additional areas in CSCL
 - * evaluation**
 - * microgenetic research**
 - * communication among projects**
- they all involve large, multi-media data

Challenging problems

- Data collection
- Retrieval
 - Just right amount at a right timing
- Version control
- Annotating
- Sharing

Research context

- Teach cognitive science to undergraduates so that they become
 - better solve problems,
 - better learners,
 - better citizens who can make intellectual judgments.
- Not only in school, but in everyday life

Learning activities

- Experiential learning with heavy emphasis on collaborative reflection
 - Hands-on demos
 - Collective pattern finding
 - Variations of jigsaw for constructive interaction
 - Concept mapping
 - Iteration

Scaffolding tools

- Reflective Collaborative Note
- Commentable Movie Sheet
- CMSonBBS
- MultiMedia Document System

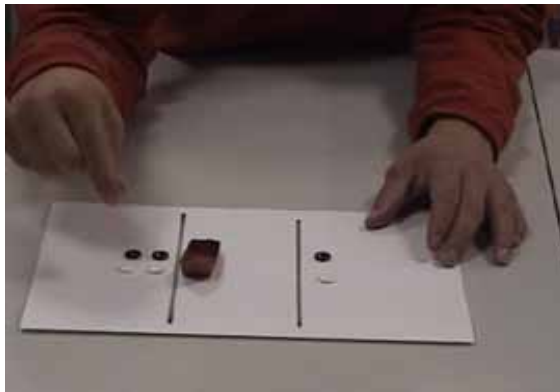
- For collaboration support
- For record keeping (data collection)

Scale of our study

- Two year/ four semester set for the first two years of college
- One to two 90 min. class(es) per semester
- Seventy students per year on average
- Serious data collection since 2000

First semester, 1st year: finding problem solving heuristics through collaborative reflection

River crossing problem



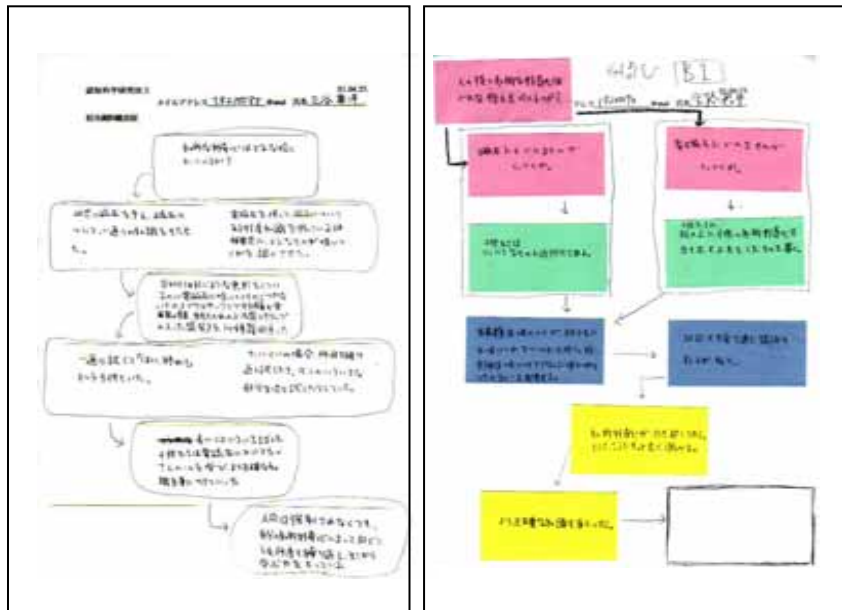
Tower of Hanoi



Second semester, 1st year

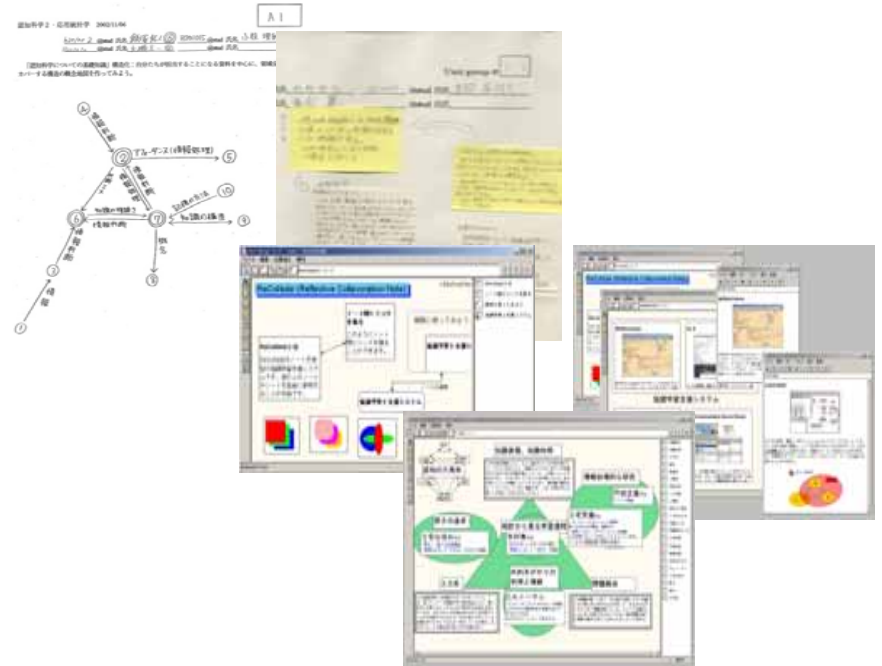
Linking experiences with literature

Aggressive reading and Concept mapping of basic ideas



Jigsaw on two to three materials

2nd year collaborative literature survey



Integrating 8-10 (3rd) to 30 plus (4th) literature pieces
Getting lectures from other faculty members

Teaching portfolio



Teaching plan



Class

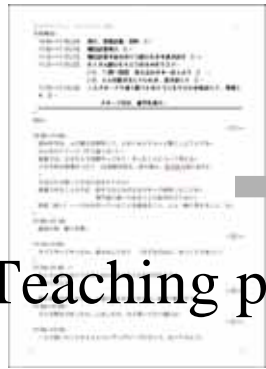


Observation notes

ReCoNote



System log



Teaching plan



Student answers



Class



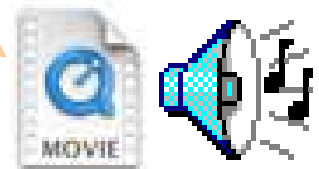
Video records of class activities



Observation notes



Audio data of group activities



Target classes

	Admitted in 2001	Admitted in 2002	Admitted in 2003	Admitted in 2004
Spring 2001	Orientation to CogSci			
Fall 2001	CogSci Method 1			
Spring 2002	CogSci Method 2	Orientation to CogSci		
Fall 2002	CogSci 2	CogSci Method 1		
Spring 2003		CogSci Method 2	Orientation to CogSci A/B	
Fall 2003		Cogsci 2	Introduction to CogSci A/B	
Spring 2004			Medium CogSci CogSci Method 1	Orientation to CogSci A/B
Fall 2004			Advanced CogSci CogSci Method 2	Introduction to CogSci A/B

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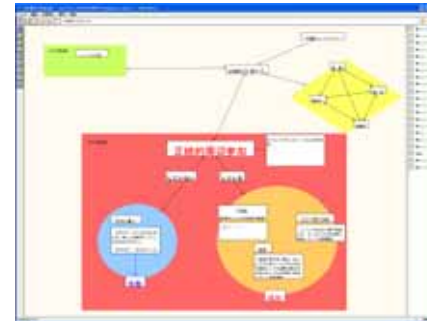
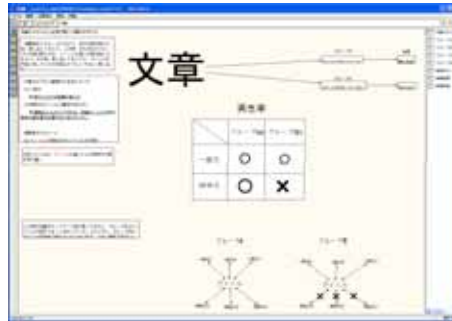
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Evaluation

- Log data analysis
- Semantic analyses of worknotes, concept maps and term papers
- Interview data analyses
- All revile different types of learning outcomes, achieved by different students

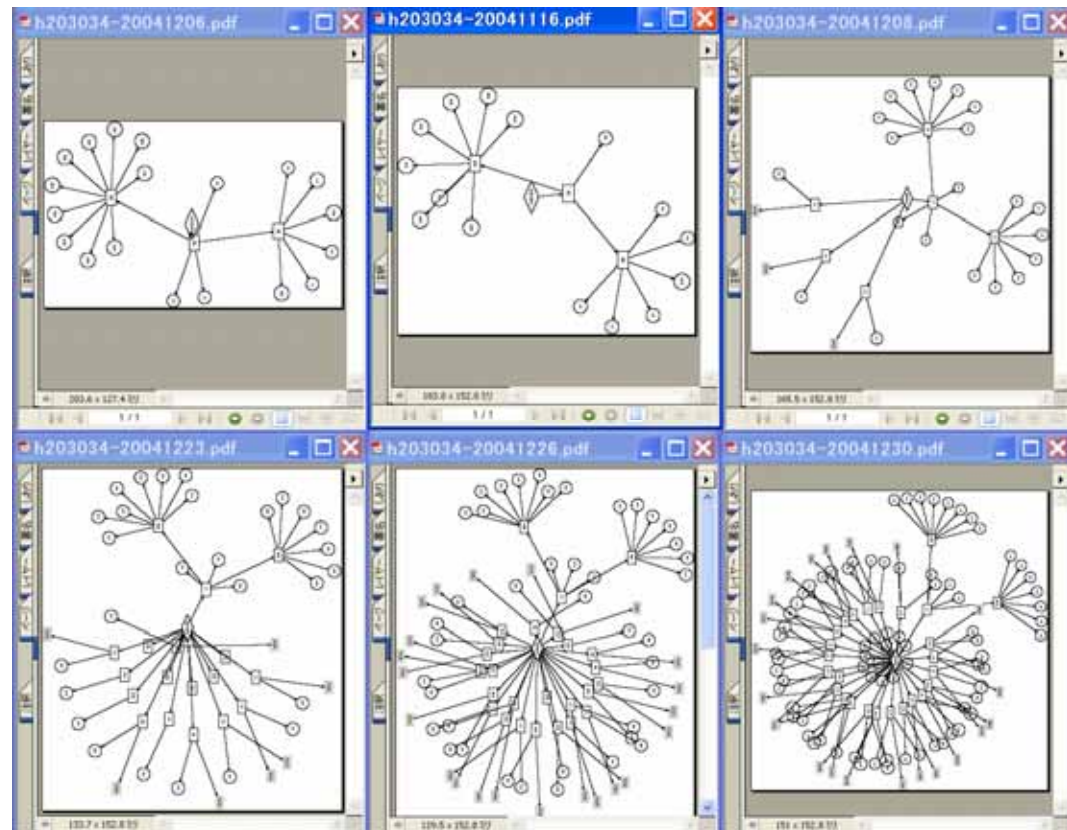
Different assessment capturing different outcomes



Structure of concept mapping	Solid comprehension of the learning materials
Conversation during the class	Integration of selected materials
Post-class interviews	Acquisition of question asking skills

Microgenetic research

- We can analyze processes too (we should)



Communication among research projects

- New technology with which we can communicate what actually happens in classrooms
- Details of coding and coding schemes
- Emerging patterns of data

Sharing annotated video clips...

The screenshot shows a Netscape browser window displaying a forum thread on the 'CoRef-mmd' website. The thread is titled '★ 研究法(1) Tanaka Shinichi' and is part of the 'CMSBBS MovieResponse' section. The main content area shows a video clip titled 'clip_001 -- 1038_1.mov' with a thumbnail image of a woman in a classroom setting. To the right of the video, there is a 'Concept mapping area' containing a diagram with nodes and arrows, including labels like '先生', 'コメント', '先生', and '先生'. Below the video, there are several posts with text and timestamps, including one by '春田裕典' and another by 'Naomi Miyako'. A 'List of Video clips' box is located on the left side of the screenshot, listing several video clips with their titles and timestamps. A 'Comments and responses' box is located on the right side of the screenshot, highlighting the text of the posts. A play button icon is visible in the bottom right corner of the screenshot.

Concept mapping area

Target clip

Comments and responses

List of Video clips

*Innovative engineering is
necessary to promote
the entire CSCL.*

