

Conversation analysis to assess CSCL environments

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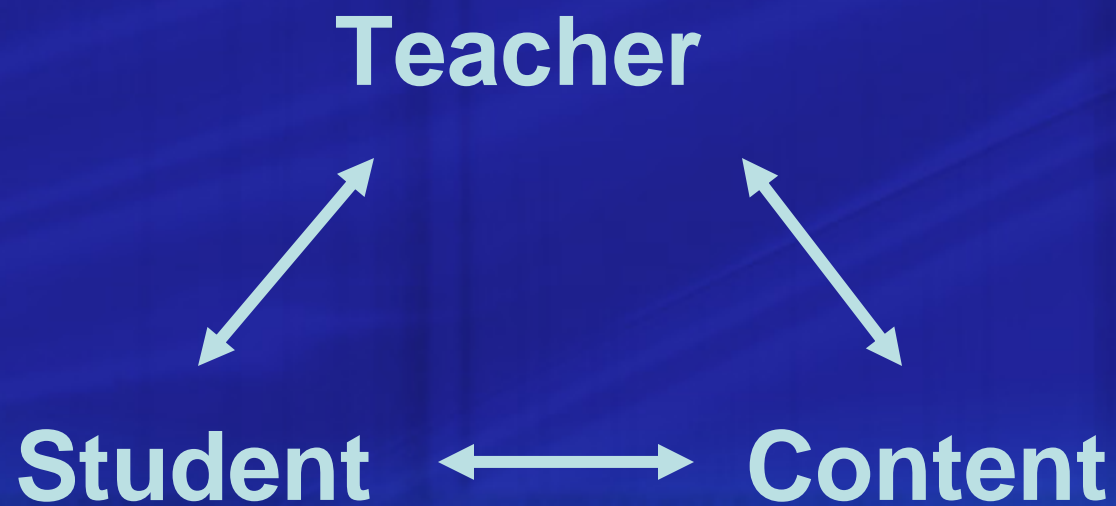
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Instructional Communication Research



Instructional Communication in CSCLE environments

- Specific instructional systems
 - usability testing
 - implementation
- Specific instructional strategies
 - collaborative problem-solving
 - collaborative argumentation

Motivation

We need more research to understand and to assess:

- Participants' roles
- Participants' interactions
- Online conversations as learning processes & outcomes

Research Question

How and to what extent do online conversations serve as evidence of learning processes and learning outcomes?

Case Study

Participants:

- 29 grad students
- 1 instructor
- 1 TA
- 5 guest speakers

Setting:

- Virtual classroom
- WebCT
- 6-week course
- Summer session

Data Collection

Purposive sampling:

- 4 chat sessions
- 4 bulletin board discussions

Data Analysis

- Conversation analysis
- Content analysis

Framework for the systematic analysis of online conversations in CACL environments

Macro level	Conversation analysis	<ul style="list-style-type: none">Discourse sequencesConversational features
Micro level	Content analysis	<ul style="list-style-type: none">Interaction typesCognitive processesKnowledge types

Conversation Analysis

Level of analysis	Unit of analysis	Key constructs
Macro	Conversations	<ul style="list-style-type: none">Discourse sequencesConversational features

Content analysis

Level of analysis	Unit of analysis	Key constructs
Micro	Messages	<ul style="list-style-type: none">Interaction typesCognitive processesKnowledge types

Findings: Chat room

“Dialogues with experts”

- teacher-mediated
- expert-oriented
- students as active participants or participant observers

Findings: Bulletin Board

“Listserv discussion”

- student-oriented
- students as experts
- collaborative problem-solving
- collaborative argumentation

Findings: Interaction types

	S 1	S 2	S 3	S 4	A 1	A 2	A 3	A 4
Student - Content	X	X	X	X	X	X		
Student - Instructor	X	X	X	X			X	
Student - Student					X	X	X	
Student - Class					X	X		X
Student - Small Group							X	
Instructor - Content					X	X		
Instructor - Student	X	X	X	X			X	X
Instructor - Class					X	X		X
Instructor - Small Group	X	X	X	X			X	
Instructor - Instructor	X	X	X	X				

(Anderson, 2003; Moore, 2003)

Findings: Cognitive processes

	S 1	S 2	S 3	S 4	A 1	A 2	A 3	A 4
Remembering								
Understanding	X	X	X	X	X	X	X	X
Applying						X	X	X
Analyzing	X	X	X	X	X	X	X	X
Evaluating	X	X	X	X	X	X	X	X
Creating								

(Anderson & Krathwohl, 2001)

Findings: Knowledge Types

	S 1	S 2	S 3	S 4	A 1	A 2	A 3	A 4
Factual Knowledge	X					X		
Conceptual Knowledge	X	X	X	X	X	X		
Procedural Knowledge	X	X	X	X		X	X	X
Metacognitive Knowledge								X

(Anderson & Krathwohl, 2001)

Applications

Formative evaluation:

- Teaching/learning interactions
- Knowledge construction and sharing
- Cognitive ability and learning outcomes

Summative evaluation:

- Assessment of team work
- Assessment of individual work

Limitations

Beyond the focus of this research:

- ❑ Offline interactions
- ❑ Cultural differences
- ❑ Social dimension
- ❑ Usability assessment