



**THE STUDY OF DISTRIBUTED TEACHING PRESENCE  
IN CSCL SETTINGS:  
temporal and organisational considerations**

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# Objective

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- To present a model oriented toward the analysis of Distributed Teaching Presence (DTP) in on-line learning environments
- Discuss some issues identified by the organizers:
  - the relevance of the temporal analysis
  - the relevance of organisational aspects of the activity
  - the contextualized and situated nature of awareness tools

# Distributed Teaching Presence

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- Individual and collective learning take place thanks to the **educational influence** of others
  - the set of supports provided by the participants –the teacher and the students— throughout the course of the joint activity to promote the cognitive and social processes for realizing meaningful learning

# Distributed Teaching Presence

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- The two relevant components of DTP:
  - **Educational influence** as a set of supports that can vary their modality, quality, quantity, intensity and distribution over time, and
  - Support that is delivered throughout the process and in such a manner that is contingent to the task and closely related to organisation and meaning negotiation of the participants

# Analysis of DTP: a multi-method approach

## Structural Analysis

Participants' activity

- Access and continuity
- Participation and continuity in writing and reading
- Connectivity between the participants: answers, reciprocity, responsiveness

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## Content Analysis

Participants' contributions

- Management of social participation
- Management of academic task
- Management of meanings

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# Analysis of DTP: some results

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Structural analysis has allowed us:

- To identify and characterize participants with regard to the suitability of their activity profile as **potential carriers** of teaching presence (or non-potential carriers or even some very interesting intermediate profiles)
- To establish the potential degree of the distribution of the teaching presence among the participants

Content analysis has allowed us:

- To identify participants who are **real carriers** of teaching presence
- To identify different **modalities** of teaching presence that appear in different moments throughout the activity
- To show the distribution of teaching presence modalities among the participants

# The relevance of the temporal analysis

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*Question 1. How to study CSCeL activities longitudinally?*

- The study of DTP places particular emphasis on temporal analysis:
  - From the standpoint of the structural analysis, for instance, the relevant information is frequently associated with the temporal aspects of the participants' activity (Access Pattern; Individual Contribution Pattern )
  - Some results of our research show that the most relevant indicators from the structural point of view are associated with the longitudinal features of the participants' activity and contributions

# The relevance of the temporal analysis

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- The temporal variable also has an essential role, from the standpoint of content analysis, in at least two senses:
  - The temporal contingency between contributions and fragments of contributions is a basic criteria in the content analysis
  - Given our process oriented approach to the study of DTP, it becomes necessary to explore threaded discussions that are closely linked by the meanings or topics the participants develop



# The relevance of the temporal analysis

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- Finally, our results suggest that the “temporal variable” in on-line learning environments must be considered as “multi-dimensional” and not only as an isolated issue
- At least for the study of DTP, the temporal variable is in the *core* of the analysis: we can't analyze and understand DTP without taking into account this dimension

# The relevance of the organisation

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*Questions 2. How to study organisation convergence? 3. Is a certain level of organisation necessary for knowledge construction? 4. Are knowledge opportunities increasing when the organisation efforts are decreasing? 5. Which factors affect organisation convergence?*

- The construction of shared meanings in collaborative learning cannot be dissociated from the management of the social participation and the management of the task
  
- From DTP analysis, the main issues are related with the opportunities to identify:
  - the time spent managing the social participation / task,
  - the participants carrying out this management
  - the moments when participants renegotiate the organisational aspects in order to restore the joint activity addressed to meaningful learning

# The contextualized and situated nature of awareness tools

Question 9. *Could we increase "organisational group awareness" and "knowledge group awareness" through the longitudinal representation of the activity of the teammates?*

Our approach allow us to propose some specific criteria for design "activity tools" aimed to promote DTP:

- Should provide information about individual participant/for the participant and about the group as a whole / for the group
- Should deliver information during the ongoing process of learning and collaboration in progress (longitudinal dimension), and
- Should offer relevant and organized information about:
  - access, participation and connectivity
  - Organisation (social participation & task)
  - Meaning making

# The contextualized and situated nature of awareness tools

Challenge: How to build a tool taking into account the contextual and situated nature of activity?

- **The diversity of users/roles** (teachers, students, project managers, researchers, etc.)
- **The different types of guidance needs in order to achieve diverse goals**
- **The diversity of scenarios** (formal education, informal education, on-the-job training, etc.)
- **Different types of collaborative tasks** (discussions oriented to make collaborative decisions, to explore a topic or opposite alternatives; collaborative work aimed at developing a pre-defined product, etc.)

Finally, without a tool “sensitive” to the contextual and situated nature of activity we can not obtain information about the processes that truly enable the understanding of DTP

**Gracias por su atención**



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organisational considerations

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# Structural Analysis

ACCESS

## **Individual Access Index**

Total days with access to the platform / total days of activity duration

## **Access pattern**

Continuous Discontinuous

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## **Individual Reading Index**

Total contributions read by one participant / total contributions made by the other participants.

## **Individual Contribution Index**

Total number of contributions / total number of contributions requested from each participant in the activity

## **Individual Contribution Pattern**

Distribution of contributions' frequency in each period: High, Medium, Low / Stable, Non stable

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## **The Individual Answer-Contribution Index**

Total number of answers / total number of contributions

## **Individual Reciprocity Index**

Total number of actual reciprocal dyads / total number of possible reciprocal dyads (n-1)

## **Individual Responsiveness Index**

Total number of actual responsive dyads / total number of possible reciprocal dyads (n-1)

PARTICIPATION

PRESENCE

CONNECTIVITY

# Structural Analysis

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Hypothesis related with Access Pattern (Structural Analysis/ Presence/Access) :  
Participants with an **Access Pattern** that includes either long periods or relatively long periods without any access are unlikely to exercise any educational influence, bearing in mind that this makes it difficult to follow the contribution of the other participants and offer adjusted support.

# Structural Analysis

## Examples of participants' activity profiles

PARTICIPANTS	PRESENCE					CONNECTIVITY		
	ACCESS		PARTICIPATION			Individual Answer- Contribution Index (ACI)	Individual Reciprocity Index (IRI)	Individual Responsiveness Index — (IRr)
	Individual Access Index (IAI)	Access Pattern (AP)	Individual Reading Index (IRI)	Individual Contribution Index (ICI)	Individual Contribution Pattern (ICP)			
S13	1.00	continuous	1.00	4	stable high	0.86	0.67	0.27
S3	0.81	continuous	0.99	3.8	non stable ascending	1.00	0.33	0.33
S1	0.38	discontinuous	0.87	1.3	non stable ascending	0.70	0.07	0.00
S5	0.54	discontinuous	0.53	0.5	stable low	0.20	0.00	0.00
S10	0.30	continuous	0.27	0.2	stable low	1.00	0.00	0.00
S2	0.32	discontinuous	0.70	0.8	stable low	0.88	0.33	0.20



# Some examples of TDP categories

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## MANAGEMENT OF SOCIAL PARTICIPATION

establishment of rules related on who can or should do what, how, when, with whom, how often, etc

Formulation of rules of participation

Evaluation of the rules of participation or participant's behaviour

Proposal to review the rules of participation

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## MANAGEMENT OF ACADEMIC TASK

establishment of rules related to what to do, how to do it to generate a final product , etc.

Establishing characteristics of the task

Request for precisions of the characteristics of task

Formulation of precisions of the characteristics of task

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## MANAGEMENT OF MEANINGS

related to content learning

Contributing of personal meanings

Identification of topics or subjects

Critical evaluation

Request for precisions or explanations

Identification or correction of misconceptions or misunderstandings

Contribution of synthesis or summaries

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