

# Technological Intersubjectivity and Appropriation of Affordances in Inter/Intra-Cultural Computer Supported Collaborative Learning Environments

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This poster will present results from my dissertation project that investigated two specific research questions related to the effects of culture on *appropriation of affordances* and on *technological intersubjectivity* in a computer supported collaborative learning environment with external representations. *Socio-technical affordances* are conceptualized as action-taking possibilities and meaning-making opportunities in a socio-technical system relative to an actor. *Technological intersubjectivity* (TI) is a technology-mediated interactional social relationship between two or more participants.

The basic premise of this research is that social affordances of technologies vary along cultural dimensions. To empirically evaluate this premise, an experimental study was conducted. The experimental study design consisted of three independent groups of dyads from similar or different cultures (Anglo-American, Chinese) doing collaborative problem-solving in a knowledge-mapping learning environment. Participants interacted through an asynchronous computer interface providing multiple tools for interaction (diagrammatic workspace, embedded notes, threaded discussion) as they worked on an intellectually challenging problem of identifying the cause of a disease outbreak. The analytical focus of the experimental study was to determine the influence of culture on the appropriation of affordances by individual participants in an online learning environment. The theoretical objective of the study was to inform the notion of technological intersubjectivity.

Based on theories of culture and empirical findings in cultural psychology documenting cross-cultural variations in behavior, communication and cognition, several research hypotheses were advanced. Empirical data were collected using demographic, culture and usability instruments; participants' self-perception and collaborative peer-perception instruments; screen recordings and software logs of experimental sessions. Statistical results showed that members of different cultures appropriated the resources of the interface differently in their interaction, and formed differential impressions of each other. For example, on average, Anglo-American participants of the experimental study created more evidential relation links, made more individual contributions and were more likely to explicitly discuss information sharing and knowledge organization strategies than their Chinese counterparts.

Participants in the experimental study wrote individual essays at the end of their collaborative science problem solving session. Currently, we are analyzing both the collaboratively written final conclusions and the individually written essays to assess learning outcomes. Preliminary results will be presented in this poster. Subsequently, we will investigate the relation between the systemic variations in appropriation of affordances and technological intersubjectivity discussed above with differences in learning outcomes. Even though traditional learning and teaching varies across cultures, there is little systematic empirical study of the role of culture in CSCL environments. Such an understanding is critical in the context of opening learning interplay as open educational resources should be open not only in the technical sense of the term but also in the social sense. That is, truly open educational resources will be open to members of different cultures and countries and investigating the role of culture in learning interactions can contribute towards a richer understanding of learning.