

# Analyzing collaborative learning at multiple levels

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**Abstract:** The workshop aims to understand how learning that takes place at individual, small group and collective (community or networked) levels might connect to each other. The workshop will consist of two data sessions, during which a data presenter will describe the background of the data and multiple analysts will present results of preliminary analyses. Workshop participants will then collaboratively explore data excerpts and discuss how different levels of analyses and associated theories are connected.

This workshop seeks to understand how learning takes place in the interplay between individual, small group and collective (institutions, community, or networked) levels of activity in both offline and online settings. So far, most of the research reported at ICLS and CSCL has addressed learning mainly at one level, be it at the individual, small-group, or community level. To date, there has been relatively little focused research on the connections among these levels (e.g., data and analysis on how individual, small-group and community-level processes or phenomena influence, constrain or mediate each other). Given the possibility that a lot more learning in the future will occur collaboratively, often in networked communities, this workshop is appropriate for the theme of ICLS 2012.

The workshop will explore connections across levels based on the analysis of actual data. The workshop will consist of two data sessions, during which a data presenter will describe the background of the data and multiple analysts will present preliminary analyses pertaining to different levels. Workshop participants will then collaboratively explore and discuss how different levels might relate to each other in small group discussions, which will then be shared.

Through these activities, the workshop aims to address questions of how learning at different levels might be connected to each other. More specifically:

- How do theories at different levels of analysis or levels of learning relate to each other and how can such theories explain phenomena across levels?
- Do the different levels of analysis require different theories?
- Are there theoretical perspectives that themselves bridge the levels of analysis/levels of learning?
- How do lower-level phenomena (individual and small-group activity) lead to emergent phenomena? How might these emergent phenomena then act as resources, contexts, or values that in turn are available for future individual and small-group learning?
- How do activities at one level (e.g., interaction patterns or group structure) influence other levels?
- How does learning take place through the interplay between individual and collective agency?
- How are advances in community knowledge (knowledge building) driven by small-group activity?

These issues cannot be separated from the methodological issues such as:

- What constitutes data at each level?
- How can methods for small-group analysis (e.g., interaction analysis) be coordinated with methods for community or societal analysis (e.g., structural social-network analysis)?
- How can (for example) sequential analysis of interaction, content analysis and social-network analysis be coordinated to address these issues?
- How can we use multiple levels of analysis to figure out where to "dive in" for maximum explanatory power, for example to make sense of results at the community or societal level, or to find small-group sources of innovation?
- What practical techniques (such as different forms of triangulation or visualization techniques) might help connect different levels of analysis?
- Is there a corresponding need for different analytic approaches and associated tools?

This workshop builds on the "Productive Multivocality" workshop series successfully conducted at CSCL 2007, ICLS 2008, CSCL 2009, ICLS 2010, Alpine Rendezvous 2010, and Alpine Rendezvous 2011. This workshop is the second with the theme of "Connecting Levels", with the first such workshop held at CSCL 2011 in Hong Kong. It is different from the earlier series in that it addresses how learning at different levels can be coordinated toward a more comprehensive theory of learning and cognition. We will continue our reflections on the interplay between levels in Sydney at ICLS 2012.