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<th>Title</th>
<th>Problem-based collaboration in an online computer supported environment: A case study</th>
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The central focus of this study concerned the nature of processes through which a group collaborated in an online computer-supported collaborative environment to solve an authentic real-life problem scenario. By analysing and understanding these processes, I described the ways in which such an online computer-supported environment supported and facilitated the collaborative processes of problem solving. In addition, I derived implications for the pedagogical design consideration of activities for online computer-supported collaborative environments based on the findings. As such, the major contributions of this study are:

1. The micro-processes of online collaborative computer-supported problem solving, and

2. The CRAMSS (Constructive, Reflective, Authentic, Manipulative, Social, and Stable) Model: a set of guidelines for the design of activities for online computer-supported collaborative problem-solving environments.

The present study focussed on the problem solving efforts of three students from a junior college in Singapore who volunteered to participate in this project. With the specially designed online computer-supported collaborative environment as the only means of problem solving, the group engaged in solving an authentic real-life problem.

Activity Theory was used as a broad framework for such a team engaged in an activity, together with Problem-Based Learning as a pedagogical strategy for small-group collaboration. Building on these frameworks, I mapped out the problem solving process in an online collaborative setting that departed from the sequential and simplistic view of the problem solving process offered by Problem-Based Learning in a face-to-face setting as reported in the literature, I described the various phases of online collaborative problem solving and detailed the intricate relationship between them; a description that is instrumental in our understanding of the complexity resident in exactly 'how' an online collaborative problem solving process transpires. In doing so, I reaffirmed and validated Activity Theory as a broad framework for small group collaboration in an online computer-supported environment.

By drawing on the findings of our case study to:

i. understand the ways in which an online computer-supported environment supported and facilitated the collaborative processes of problem solving;

ii. derive implications for the pedagogical design considerations of online computer-supported collaborative environments.

I argued a case for an online computer-supported collaborative environment facilitating problem solving to subscribe to our CRAMSS model. CRAMSS, as is evident, is an acronym that lists the essential guidelines I believe an online computer-supported collaborative environment facilitating authentic problem solving should follow.

As a result of this case study, I saw some preliminary evidence that students are able to collaborate via an online environment as the only means of communication to solve an authentic real-life problem; the process of problem solving being very chaotic and complex. I was also able to sieve the ways in which such environments support the problem solving process. By deriving a set of guidelines for the pedagogical design considerations of activities for such environments, I hope to have taken the first steps towards addressing a pressing need for online computer-supported collaborative problem solving environments based on sound pedagogical principles and supported by research.