

## DISTANCE EDUCATION IN MATHEMATICS

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In this presentation, we address the theme of Distance Education, which has received little attention in the International Group for the Psychology of Mathematics Education. We have reconsidered the theme in light of the diffusion and availability of new technologies of information and communication.

Over the past five years, the Research Group in Information Technology, other Media, and Mathematics Education ([www.rc.unesp.br/igce/pgem/gpimem.html](http://www.rc.unesp.br/igce/pgem/gpimem.html)), of the State University of São Paulo (UNESP), Rio Claro, São Paulo, Brazil, has been analyzing non-face-to-face interactions when using information and communication technologies. The analysis is based on the notion that technologies cannot be taken as neutral or transparent; we see them as forming part of a thinking collective, composed of human and non-human actors, that produces knowledge. From this perspective, we analyzed the interactions between human and non-human actors during a 30-hour extension course entitled “Trends in Mathematics Education” offered five times during the last five years.

The educational activities of the course are carried out using “chats”, an electronic discussion list, and e-mails, which are used to mediate the educational process, permitting communication among the students and professors. The temporal organization involves synchronous and non-synchronous interactions. The synchronous interactions occur weekly during 3-hour on-line meetings during which the teacher and students discuss, in real time via chat, texts that they have read prior to the meetings. The non-synchronous interactions occur during on-going discussions that take place between meetings via e-mail. A homepage plays the role of bulletin board during the course, where syntheses of the classes, bibliographic references, photos, and other information about the course are available.

The analysis presents the possibilities offered by this configuration of technologies and the pedagogical approach used, indicating that there are modifications in the norms of knowledge production. These modifications are related to the non-linear organization of the dialogues and debates, the need to interpret and attribute meaning, and the extension of imagination and perception, among other aspects. These aspects and others are studied in an effort to contribute to this field, about which there are more questions than answers.