

Telecollaboration and virtual communities of practice for teacher professional development: theoretical and methodological issues

Abstract: In the CEGEP network project in Quebec, telecollaboration is used to foster professional development among college teachers working in remote areas. The authors would like to discuss the future of telecollaboration with the participants, and share ideas on the most appropriate conceptual and methodological frameworks for studying it, while presenting some of the results of their project. At this roundtable, the authors hope to meet other researchers and teachers who are interested in the practical and theoretical sides of telecollaboration. The next phase of their project is to try to portray teachers' telecollaboration practices, and to this end, this roundtable will be a forum for both teachers and researchers interested in this topic. Discussions on the most appropriate conceptual and methodological frameworks for analysing professional development telecollaboration cases will follow brief presentations of the issues raised by the CEGEP network project.

Introduction

Learning and professional development theories now emphasize collaboration and communities of practice as means of constructing knowledge. Instead of one-stop workshops in which they learn new instructional techniques, researchers argue that teachers need spaces where they can reflect on their practice with colleagues to experience professional development (Bulter et al. 2004, Triggs & John 2004, Clarke & Hollingsworth 2002). For teachers working in remote areas where they are the only experts in their discipline, these occasions are rare. But ICT (Information and Communication Technologies) and computer-mediated collaboration (telecollaboration) offer new ways of creating such opportunities.

The relevance of telecollaboration and COP to foster teacher professional development

In the first part of this roundtable, the participants will share their views on the relevance of telecollaboration as a means to foster teacher professional development. It seems that voluntary telecollaboration is a spreading practice, and in this first stage of the workshop, we would like to document cases where telecollaboration is used to foster teacher professional development. We will briefly present the problem that is addressed by the CEGEP network project and invite participants to discuss the social and scientific relevance of telecollaboration.

The relevance of telecollaboration in the case of the CEGEP network project

In Quebec, admission rates are diminishing in many technical programs, especially in remote regions. However, endangered programs cannot be closed without causing serious problems for regional economic growth and stability, because they are training specialized workers for local enterprises. In these programs, as colleges face an increased financial burden (Inchauspé 2004), teachers face increased workloads and have to offer courses in which they are not specialized. In order to cope with this problematic situation (Inchauspé 2004), CEFRIO (Centre *francophone d'informatisation des organizations* or French-language organizational computerization centre) launched a project that uses telecollaboration to foster professional development and resource diversity. In the CEGEP network project, telecollaboration was used to pair up teachers working in similar programs in remote colleges to design learning activities for use in class. In several of these activities, students were also encouraged to work together in teams even though they were not physically in the same place. The CEGEP network project was designed to encourage teachers to share resources and expertise based on regional specificities.

Discussing and documenting telecollaboration efforts

The first round of discussion will focus on identifying projects in which telecollaboration is used to foster professional development as well as spontaneous efforts made by teachers who use telecollaboration in their work.

Participants are encouraged to bring names, websites or emails of researchers or teachers and schools who engage in such practices in order to create a network of people potentially interested in participating in future research projects on telecollaboration. The following questions will be discussed:

- Do you know instances in which telecollaboration has been used, formally or informally, to foster teacher professional development or pedagogical/disciplinary/technological discussions?
- What forms does voluntary telecollaboration take among teachers?
- What kind of teacher problems does telecollaboration help address?
- Is telecollaboration a growing practice among teachers?
- Can professional development be viable even though all the actors are not physically in the same place?

Conceptual framework

Theories of collaboration and professional development

Cooperation and collaboration among students have been documented by many researchers and are included in most recent theories of learning, such as socio-constructivism. However, collaboration among teachers has not been theorized in the same way. At the beginning of the CEGEP network project, the researchers searched for a conceptual framework to analyse success factors in teacher telecollaboration. Small group theory (St-Arnaud 1978) and team teaching models (Murata 2002, Shaplin & Olds 1964) were examined as potential conceptual frameworks, but they were not entirely appropriate to the context of telecollaboration and did not reflect the complex process that the teachers were experiencing. The researchers then turned to professional development models, since the CEGEP network project essentially sought to help teachers develop disciplinary, technical and pedagogical competencies as well as reflect on their teaching practices.

Professional development is traditionally considered as a linear process. Teachers participate in one-stop workshops presenting more effective ways of teaching. They then, hopefully, incorporate these new strategies in their own teaching practices. In these models, teachers act as technicians who individually apply external knowledge developed by researchers (Butler et al. 2004) and only formal training is recognized as a source of change in practices (Clarke & Hollingsworth 2002).

Other researchers argue that professional development is similar to any other learning process, and they therefore embrace recent learning theories such as socio-constructivism (Knight 2002) or self-regulation models (Butler et al. 2004) in their work. For them, professional development is a reflective and continuous process in which teachers construct their own instructional knowledge (Butler et al. 2004, Clarke & Hollingsworth 2002). Communities of practice are also often part of the professional development process, providing space for reflection and common goals to meet (Butler et al. 2004, Triggs & John 2004, Hamel 2003). For these authors, professional development is not conceptualized as a top-down transmission of knowledge, and informal aspects of professional development are recognized. In the model developed by Butler et al. (2004), professional development is seen as both individual and collective. Communities of practice fuel the self-regulation process by which teachers identify best practices, try them in their own classrooms and then reflect on the outcomes of the experience in order to adjust their teaching practices in the future (Butler et al. 2004).

Professional development in a virtual context

In the second round of discussions, the participants will share their views on the most appropriate professional development frameworks for studying teacher telecollaboration practices. The authors will briefly present the Butler et al. framework, which seems promising. In the CEGEP network project, semi-structured interviews, observations and questionnaires were used to measure the impact of telecollaboration on teacher professional development. The professional development indicators were pedagogical, technological and disciplinary discussions with colleagues, knowledge and skills acquisition, and changes in teaching practices. Butler et al. (2004) used similar indicators in their research on self-regulation and professional development.

The participants are invited to bring relevant articles or references related to telecollaboration and professional development that they would like to share with the audience. The following questions will serve as starting points for the discussion:

- What are the research questions raised by the practice of telecollaboration?
- Which conceptual frameworks are the most appropriate for understanding telecollaboration as a means for professional development?
- How can we adapt existing professional development models to the context of telecollaboration?
- How can we determine whether telecollaboration is having an effect on the work of teachers who are using it in a formal or informal context?
- What are the best indicators for professional development in a virtual and informal context?

The adoption of an innovation

For teachers, the practice of telecollaboration represents an innovation on multiple levels: technological, pedagogical and collaborative. Before taking action to implement an innovation, teachers must develop favourable attitudes toward that innovation. In this project, we adopted the Concern Based Adoption Model (CBAM) for several reasons. It has been used both for pedagogical and technological innovations; it is founded on the idea that the real owners of an innovation are the ground actors (teachers, in this case); it is also systemic and looks at the role of different actors (change facilitators, administrators, etc.); it offers a validated set of tools that can be used to monitor the adoption of an innovation and measure the attitudes towards it; it integrates teacher collaboration in its framework, as collaboration with other professionals represents a high level of concern or use of an innovation.

Measuring the adoption of an innovation

The methodological framework of the CEGEP network project was based on the Concern Based Adoption Model (CBAM). Hall and Hord (2001), who developed this model, consider that it is pointless to evaluate the effects of an innovation if it has not been implemented properly. Consequently, they developed different tools to monitor the adoption of innovations. One of these tools is the “stages of concern” questionnaire, which measures the teachers’ interest in a particular innovation (Hall & Hord 2001). The other tool that was used in this project was the semi-structured interview to measure the level of use of the innovation (Hall & Hord 2001). With this interview grid, researchers can evaluate the extent to which teachers are using telecollaboration in their work. However, interviewing many teachers in remote areas can be time consuming and costly. Following the lead of some other researchers (Shapley & Benner. 2003, Heinecke et al. 2000), the CEGEP network project used a questionnaire to measure the level of use of the innovation. Copies of the questionnaires and interview grids will be available at the roundtable.

The last round of discussions will focus on the different methods that can be used to monitor the adoption of the telecollaboration innovation. We suggest that participants bring the tools that they used in their own research or that they think would be useful to evaluate the implementation and effects of telecollaboration.

The following questions will serve as starting points for the discussion:

- What would be a convenient way to measure the level of use of telecollaboration and the attitudes towards it?
- What are the best ways to monitor and identify the factors that facilitate the adoption of these innovations?

Conclusion

To conclude this roundtable, each participant will be invited to summarize what they see as the most important theoretical and methodological issues related to the use of telecollaboration to foster professional development. Throughout the discussion, the participants will have discussed different aspects of using telecollaboration to foster teacher professional development, based on the CEGEP network case study. Hopefully, this roundtable will help the researchers build a network of professionals interested in the use telecollaboration as a means to link teachers in remote regions with their colleagues.

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