Enhancing Professional Skills, Meta-social Competencies and Social Capital through Online Collaborative Learning

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Abstract: - This paper describes a series of studies which have been carried out to compare the efficacy of face to face and computer supported collaborative learning (CSCL) in increasing: a) academic knowledge and professional psychological skills (such as interviewing, moderating focus groups, organizational and community evaluation methodologies, and group dynamics techniques), b) meta-social competences (such as various forms of self-efficacy and empowerment) and c) social capital. Results showed that online learning can be used to promote professional skills normally taught only in face to face graduate programs and professional and continuing education contexts. Most measured forms of self-efficacy and empowerment increased for participants in both settings. Social capital was built in both groups, on line students however, showed more long lasting social capital.

Key-Words: - CSCL, empowerment, social capital, professional skills, graduate training, continuing education, efficacy evaluation.

1 Introduction

During the last ten years, most of the research on the use of information and communication technology and education has more or less explicitly considered technology's possibilities to facilitate social interaction between teacher and students, and among students. Studies on the efficacy of CSCL show that it facilitates higher order cognitive processes, helps students learn from one another and create new knowledge. Most researches have been conducted with elementary, junior or high school students, studying math and sciences, and less frequently English or history. (Bruckman and De Bonte, 1997). Fewer investigations have involved university students in engineering, computer science and management (Seymour, 1994) and almost none in social sciences. Moreover, Lehtinen et al. (1999) after making an ample review of the CSCL literature note that most studies on the efficacy of CSCL have been made without control face to face groups, in which relevant variables such as theoretical and pedagogical models, students characteristics, teacher, collaborative modalities employed and subject matter taught were held constant. They also conclude that CSCL has shown to be as valid as Computer Assisted Learning, centered on individualized learning in teaching "facts", in particular content curricula in math and languages. However, there are few studies which have explored whether CSCL contexts are as efficient as traditional face to face seminars in transmitting professional competencies and other social skills.

2 Problem formulation: Can CSCL Promote New Forms of Graduate and Continuing Education?

2.1. Can we teach not only academic subjects but also professional competencies online?

Some authors think that distance education has the potential to move graduate training beyond the physical classroom, providing new educational opportunities. For instance, Rudestam (2004) maintains that certain key features of CSCL such asynchronous small group discussions, collaborative problems solving, reflective inquiry, competency based outcomes and the facilitator role of the instructor could be very helpful in the training of clinical psychologists However, we have found no studies that compared the efficacy of face to face and online collaborative learning settings in promoting the development of professional competencies and meta social skills. Moreover, studies on the efficacy of collaborative learning online vs. face to face are even fewer than those focusing on types of distance learning of first and second generation. According to Russel (1999) and Phipps and Merisotirs (1999) who have reviewed empirical research on distance education, most studies have also serious methodological limits, as not using randomly selected subjects, or not including a theoretical framework. Benbunan-Fich et al. (2002) also underline that most studies have compared synchronous online vs. face to face groups, and only very few have studied asynchronous learning settings.

2.2 Can CSCL develop metasocial competences and social capital?

More research is also needed about whether one can build social capital through CSCL. As Parks and Floyd (1996) underline two conflicting visions have dominated popular and scholarly debate. Some authors maintain that computer mediated communication liberates interpersonal relationships from the limits of physical locality and thus creates novel opportunities for the development of genuine relationships and a sense of community. On the other hand, opponents of distance education think that physical presence allows for non verbal communication which creates a level of group cohesion, and promotes affective relations not attainable in online settings. Online communicators are assumed to lack many of the variables that have been found to be important in the development of relationships in face to face contexts: physical proximity, frequent face to face interaction, information about physical appearance, cues about group memberships, and information about the broader social context. Empirical evidence is mixed and hard to compare since many authors have studied social presence using different measures and only a few have explored social capital formation online. Most have not compared face to face and online learning contexts, but simply interviewed people who belonged to on line newsgroups, or used chatrooms.

Several studies in the 80's ands early 90's found that positive personal relations occurred less frequently both in laboratory settings and in a variety of business, governmental, educational and public online networks than in face to face groups. Online participants engaged, more often than people in face to face groups, in verbal aggression, blunt disclosure, and nonconforming behavior (Parks and Floyd, 1996). On the contrary, several more recent studies have found that positive social presence can be perceived online (Parks and Roberts, 1998; Tu, 2002; Yalon and Katz, 2001) and have shown that online relationships can be positive, intense and involve a great deal of self disclosure Wellman et al. (2001) explored how the use of internet affects bonding social capital, they found that people's interaction online supplemented their face-to-face and telephone communication with friends and relatives without increasing or decreasing it. Kreijnsa et al. (2003) in a review of literature on social interaction in CSCL environments caution that one cannot take for granted that social interaction automatically will take place because an environment makes it technologically possible. They also note that "problems with the social dynamics among group members is often the major cause of ineffective groups actions in distance learning environment" (p. 336) and that there is a "tendency to restrict social interaction to educational intervention aimed at cognitive processes while social (psychological) interventions aimed at socio-emotional processes are ignored, neglected or forgotten" (p. 336). Obviously, social interaction is the prerequisite for social capital formation. According to Kreijnsa et al. (2003) to favor social

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interaction we have to apply a set of conditions that promote collaboration and encourage individuals to help each others' efforts to achieve group goals.

A review of the literature shows the need for studies which compare the efficacy of face to face and online settings in increasing students academic knowledge, professional competences, meta-social skills and social capital, holding constant several key variables such as theoretical models of learning (teacher centered, solo or collaborative), teaching methodologies (activities and sequence of modules), subject matter or professional skills and the teacher, assigning groups of students matched for age, grade average, gender, randomly to online or face to face settings. Therefore, we have conducted a series of studies to begin to shed light on some of these issues.

3 Possible solutions: results of three studies

3.1. Study A

In this pilot study (Francescato et al., 2006) fifty psychology majors learnt the same professional skill (a community evaluation methodology which included interviewing skills and various techniques of data gathering) in two seminars taught over a two month period by the same teacher online and face to face. The teacher designed small group learning activities into a seminar series consisting of weekly modules, with precise learning objectives and tasks that could be completed either in a weekly three hour face-to face meeting or online during the same week. Asynchronous technologies were used through Yahoo group platform. To evaluate individual academic learning on the topic of community psychology two questionnaires were constructed that tapped Perceived Knowledge and Actual Knowledge. To evaluate performance students were given a real task to carry out a community profile analysis in a neighborhood of Rome working in subgroup's of five. They had to submit a final group paper on the results. The ten papers were ranked by three blind judges on several criteria. Students were also administered an Italian validated version of Bandura (2001) Academic Self-efficacy Scale, a Problem Solving Efficacy Scale (Pastorelli et al., 2001) and a Perceived Social Efficacy Scale derived from the Smith and Betz Scale (2000). Manova analysis showed that the various measures of knowledge and efficacy were significantly higher at the end of the course than at the beginning with no difference between FFT and online groups. Results of this pilot research showed that we could teach psychological professional competencies online and increase various forms of self-efficacy. Given the small number of participants in this first study we decided to make a second research, to confirm or invalidate these first findings.

3.2. Study B

The second research, besides pursuing the same aims of the pilot study, had also these further objectives:
1) to verify whether online one could learn not only general professional psychological competences but also "clinical skills" such as learning to observe and understand small group processes and act as group facilitators; and
2) to ascertain whether we could promote social empowerment and social capital.

In this second research (Francescato et al., under evaluation) 160 psychology students, enrolled as psychology majors, were divided into four on line and four face to face seminars held by the same teacher, two of which focused on developing psychological professional skills (organizational and community analysis skills) and two also focused on more clinical skills (related to understanding group dynamics and facilitating group processes). Manova analysis of before and after scores on a variety of measures showed that both types of seminars were effective in increasing professional competence, social and problem solving efficacy, and in promoting social empowerment. Online groups increased their competences in understanding group processes significantly more than their face to face counterparts and did a slightly better job in facilitating group processes.

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Overall results of our first two studies indicated that collaborative learning can widen the social networks and increase mutual aid behaviors among participants while they attend a university seminar together, both online or face to face, therefore creating the conditions for social capital to be built. However, we still needed to ascertain if these social contacts lasted after the end of the course, and whether social relations built online or in face to face groups proved more enduring.

3.3. Study C: The follow up
In this third research we wanted to evaluate if social ties formed by students lasted after the students no longer shared the common setting of a university seminar, that is if "social capital" in the form of long lasting relations had been accumulated during the collaborative learning experience and how it was independently utilized by each student. Moreover, we wanted to compare how online seminars and face to face seminars fared in promoting social ties and widening students' social networks. We also wanted to assess whether the professional competences and social and personal skills acquired in the two seminars had been maintained and applied also in other settings of the student's lives.

One hundred and sixty psychology majors who had participated in second research on the evaluation of the efficacy of face to face or online seminars previously described, were contacted by phone or online for a brief interview nine months after the end of the seminars about 139 were reached. All the 82 online students and only 57 out of 78 face to face students were reachable.

Students were asked questions in three areas. The first try to assess whether the students had widened their social networks including new people met through the seminar. We inquired whether they had made new friends among their fellow seminar members, if they met face to face and how often, if they heard or kept in touch by phone or email, if they still studied or worked together.

In the second area we explored whether they still felt they maintained the psychological professional skills (organizational and community analysis skills) and also clinical competencies (groups processes skills) that they had acquired during the seminars face to face and online. We also inquired whether they had applied the new skills in their professional lives and in which settings.
The questions in the third area asked participants to evaluate how satisfied or dissatisfied they were reflecting on their online or face to seminar, after an interval of nine months, and we also asked each student to describe their experience using the three words that first came to their mind.

The overwhelming majority of students made some new friends during the seminar: (95% in the face to face groups and 79% in the online groups), with a significant difference in favor of face to face students. Collaborative learning does seem to promote the formation of new social ties and provide opportunities for building new social capital. Collaborative learning in face to face contests seemed to facilitate initial friendship ties more than in online contexts; however nine months later more friendships made online persisted.

The intriguing finding of our study that online friendships lasted longer and had a more intimate character than face to face ones, needs to be further explored. Some online students commented that meeting people online, forces one to go beyond immediate impressions conveyed by physical appearance, dress style, tone of voice, to get to know people more on their character and behaviors as one student stated: "Being deprived of the usual cues, by which we evaluate people rather quickly when we meet face to face, online you are more prone to pay attention to how people react to the different situations, to what they think and how they expressed themselves - You see the "interior" person more than the "external one".

Another interesting difference among online and face to face students emerged in the area of the use of professional and personal skills acquired during the seminars. Significantly more online students (66% vs. 49% face to face) stated to have used in the nine months since the seminar the skills acquired in other settings of their life, like work or volunteer organizations.

In both online and face to face seminars the vast majority of students evaluated their learning experiences in a positive manner (96% face to face vs. 89% on line). Since our students were randomly put in the face to face or online seminars, the 11% of online students who did not like the

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experience may simply be students who have personality traits or learning styles that do not fit well in a collaborative learning modalities. To study which students learn better online or face to face we designed a fourth study.

4 Conclusions

Holding constant key variables such as theoretical models of learning (collaborative), teaching methodologies (activities and sequence of modules) and the teacher (same teacher taught online and face to face), and assigning groups of students matched for age, grade average, gender, randomly to online or face to face seminars, we found one can learn online not only content type material but also professional competencies of a complex nature, such as clinical skills. Our results which were replicated in all our studies, support Rudestam's hypothesis that some aspects of graduate training could be moved from the physical classroom. In all our studies comparing online and face to face settings, collaborative learning proved effective in raising students' knowledge and increasing professional competences. Moreover, as Rudestam (2004) predicted, online students were more effective in understanding group dynamics. We think that online settings offer structural advantages in the study of group dynamics, since they provide accurate and reliable memories of what actually happens. Our research also indicated that online training may be better for certain types of students. Obviously these results will have to be confirmed by further well controlled studies, but they do offer some support to those who maintain collaborative learning online is not a "series B" educational option but one that can also improve graduate and professional training, increasing also students' meta-social competences and social capital.

Computer Supported Collaborative Learning could also be used in settings when members of teams live in different countries, such as in international companies and worldwide non-profit organizations. Management training programs could be set up for virtual teams using CSCL to foster the growth of social as well as professional skills of people belonging to the same organization but living in different areas or countries. Further research should explore how learning can be made more effective by examining, for instance, the role of teachers' degree of experience online, and the teachers' attitudes toward promoting social support and sense of community among students. Finally, it would be particularly interesting to ascertain in which contexts and for which aims computer supported collaborative learning and independent solo learning pedagogical models produce the best results.

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