CASE STUDIES OF FULLY ONLINE INTERCULTURAL COLLABORATIVE LEARNING

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ABSTRACT

Case study method was employed to investigate the trajectory of the learners who have actively engaged in a fully online intercultural collaborative learning environment designated as iCamp Trial-2 in which four European academic institutions were involved. The environment was built on the extensive use of social software and theoretically sound pedagogical scenarios, and purported to advance learners' self-directed learning (SDL) competencies. We aim to identify factors contributing to the activeness of the students by analysing their background attributes, tool usage patterns, personal learning contracts, email communications with team-mates, and dialogic reflections. Three case studies are presented. Gender, prior positive collaborative experience, and learning motivation seem the factors determining the level of involvement. Initial push from the facilitators was essential for bootstrapping group interactions. Cross-cultural differences seem a convenient excuse for the active learners to tolerate the passiveness of their peers.

KEYWORDS

Case study methods, intercultural collaboration, Self-directed learning, Content analysis

1. INTRODUCTION

Case study is a research methodology widely employed in a variety of domains in social sciences. Instead of using large samples and following a strict research protocol to study certain variables, case study method uses an in-depth, longitudinal examination of a single instance or event, that is, a *case* (Yin, 1994). Such an approach proffers a systematic way of observing events, collecting and analysing data, and reporting results, thereby enabling researchers to gain insights into the factors contributing to interesting observations, and to draw implications for future research work. Besides, case studies lend themselves to generating and testing hypotheses (cf. the Grounded Theory approach of Glaser & Strauss, 1967; Flyvbjerg, 2006). Alternatively, case study can also be viewed as an empirical inquiry that investigates a phenomenon within its real-life context. This methodological approach involves single as well as multiple case studies with qualitative data being garnered from multiple sources and rooted in certain theoretical propositions. Case study method is consistent with design-based research (*Educational Psychologist*, 2004), which, with the deployment of mixed methods, aims to meet dual goals of refining locally educational practice or intervention and developing more globally usable knowledge for the field. In particular, we apply case study method to examine the phenomenon of deploying social software to enable students to collaborate effectively in a fully online intercultural environment with the goal of advancing their self-directed learning competencies, which manifest in terms of the autonomy to select right tools for right tasks, to collaborate effectively with peer learners as well as facilitators in a group setting, and to reflect on one's own progress.

Self-directed learning (SDL) is a pedagogical notion with a long and rich history. Numerous studies have been conducted in different domains to validate, augment and improve our understanding how SDL works for whom under which conditions (e.g., Brookfield, 1986; Hiemstra, 1994; Knowles, 1975). Empirical evidence has accumulated that mature adult learners can demonstrate high SDL competencies by specifying their own learning needs and goals, identifying learning resources, planning the course of actions, managing the workflow, and evaluating learning progress as well as outcomes. Besides, it is recognized that SDL,

which is traditionally seen as individualistic, has its social aspect (e.g., Kerka, 1999). Group learning processes can foster individuals' SDL abilities because feedback from collaborators can stimulate the learners to reflect on their own learning activities and regulate them accordingly. Divergences in values are more salient in cross-cultural collaborative settings than their single-culture counterparts. Hence, investigating SDL in such settings is deemed intriguing. Thanks to the proliferation of social software, the scope of cross-cultural studies becomes very flexible. Indeed, it is interesting to explore whether and how SDL has been affected by new information and communication technologies (ICT) (Candy, 2004). Furthermore, *learning contract* is seen as a means for enhancing SDL by negotiating resolutions between external needs and expectations engendered by the institution where a learner is situated and her internal needs and interests (Hiemstra, n.d.).

Of particular interest is to identify in a fully online intercultural collaborative setting which factors contribute to a learner's active involvements, which presumably lead to better outcomes in terms of the learner's improved SDL competencies and learning performance. This issue will be investigated in the context of our project iCamp (http://www.icamp.eu) with the use of case study research method.

2. RELATED WORK

To compare the profile of iCamp with other *fully online*, *distributed*, *intercultural* online collaborative learning environment (OCLE) is difficult because there exist only a few comparable research studies in the literature of computer-medicated communication (CMC). In fact, what is lacking in most of the OCLEs is the "intercultural"[1] component such as Harasim's (1996) Virtual-U™ - a national project launched in Canada to establish online universities. Another OCLE called Helpmate (Curran, 2002) is potentially comparable to iCamp. Helpmate packages a variety of communication and sharing tools with the special feature of integrated multi-language translation. However, no empirical data on intercultural online collaborative learning seem yet available. In fact, most OCLEs are blended, involving both collocated and online learning activities. We have identified only two comparable studies: (i) OTIS (Beer, Slack & Armitt, 2005) – a web-based platform for training occupational therapists coming from four European countries. While its fully online and cross-cultural features were analogous to ours, its learning environment was more integrated, but the collaborative component was less salient than ours because the students in the tutorial groups were supposed to work out given assignments on an individual basis but using OTIS for discussion; (ii) Patras-Duisburg Web portal (Harrer et al. 2006) – a web-based platform enabling the discussion of computer algorithmic concepts among the students from two European countries. Whilst the technical setting was highly similar to that of ours, the pedagogical scenarios were less complex.

Furthermore, the iCamp project addresses explicitly three distinct pedagogical frameworks, viz.: cross-cultural collaboration, self-directed learning and social networking (Fielder & Kiesinger, 2006), whereas the OTIS project briefly mentions problem-based learning and the Patras-Duisburg project does not explicate any specific pedagogical framework. Concerning the evaluation methodologies, iCamp adopts mixed-method methods to analyze the multi-source, multi-perspective data systematically. Similarly, the Patras-Duisburg project employs a range of tools and techniques (e.g. pattern discovery) to analyse their comparably rich qualitative and quantitative data. In contrast, OTIS relied primarily on informal qualitative data analysis, citing blocks of dialogues to support respective arguments.

3. TRIAL STRUCTURE & ACTIVITES

Four European academic institutions constitute the trial sites of Trial-2: Czech Republic, Poland, Slovenia, and Turkey. Three types of key actors are:

- *Facilitators*: Five faculty members from the trial sites proposed different project topics about which they were knowledgeable, and facilitated groups of students to accomplish the projects selected;

[1] Culture is defined in numerous ways as a constant entity as well as a dynamic construct, and is manifested at different levels of depth, such as national, regional and organizational (Hofstede, 1997). In our current work, we assume that geographical and political boundaries define culture as a set of collectively shared values, attitudes, norms and practices.

- *Students*: 24 undergraduates and postgraduates majoring in computer science, electrical engineering, sociology, and management;
- *Research Team*: They are responsible to coordinate and monitor the progress of the trial, and provide technical and pedagogical supports;

Trial-2 commenced in April 2007 with groundwork preparations: Facilitator recruitment, development of pedagogical scenarios and evaluation schemes, selection and adaptation of technical tools, and student recruitment. A blog entitled "iCamp Trial2 Weblog" has been developed as an information hub where there are links to *iCamp Help Centre* (i.e. tutorials for a set of tools), to Project Wiki, and to blogs of all the trial participants. After the Preparation stage, Trial-2 entered the Execution stage consisting of the launching and three other phases.

Launching Phase (October 2007): Trial2 was launched by introducing the iCamp Trial2 Weblog to the students who were required to accomplish several tasks prior to the actual project work:

- *Initiating personal tool landscap*e. Students were recommended to deploy a selection of open-source applications that support learning activities of Trial-2, including Wordpress (weblog), xowiki, videowiki, Scuttle (social bookmarking), Feed-on-feed (aggregating feeds), x-Lite (IP telephony), iLogue (developing learning contract), mydentity (email forwarding), Doodle (meeting planner), Flickr (sharing photos), and Objectspot (learning object repository). Students were required to manage and configure some of the tools to meet specific needs;
- *Making self-introduction*. Students were required to create a personal weblog and to attend a kick-off videoconference where they briefly introduced themselves;

Registering for a project of interest. On the Project Wiki there were links to a set of wiki pages with each of which containing the basic description of a project. Students registered for their preferred project by putting their names, email addresses and links to personal weblogs on the corresponding wiki pages. Seven project groups on different topics, with the size ranging from two to five students, were then formed.

First Phase: Project Group Formation (Nov 2007): Students were basically free to choose whichever project theme they found interesting. To ease information search, the *feeding mechanism* for aggregating contents from different sources in one place was introduced. For instance, if a student subscribed to her group-mates' and facilitator's blogs, she could then view the contents of these blogs from her own blog. Towards the end of the First Phase the students were asked to fill in the *Mid-Phase Survey* to indicate how they perceive the trial context (including people, tools, the project topic, resources, etc). The rationale was to encourage the students to reflect on their learning environment.

Second Phase: Project Specifications and Learning Contracts (Dec 2007): With the help of the project facilitator, the students had to decide clearly the content and context of their project, identify goals and objectives to be achieved, specify tasks and who was responsible for which tasks, and select criteria against which they would be evaluated. These discussions took place asynchronously (e.g. email), and synchronously (e.g., IP telephony). When agreements on project specifications had been reached, the students then developed their personal learning contracts (PLC) by either filling in a given template or creating an alternative format (Section 4). The draft PLCs were commented by the project facilitator and peers. Basically towards the end of this phase students should 'freeze' their PLC, though they could still slightly revise it when they got a better understanding about their project work and learning environment.

Third Phase: Project Attainment and Evaluation (Jan 2008): In this phase, the students continued to communicate and interact with the different tools for teamwork coordination, activities regulation and resolution of issues. Towards the end of the project, students were asked to fill in the *End-Phase Survey* to indicate how their personal and group landscapes (i.e., tools usage, interaction patterns, etc.) changed and to what extent their learning goals were attained.

4. EVALUATION INSTRUMENTS

Survey is one of the most popular instruments for evaluating a learning environment. We conducted three different surveys; each of them was documented as a Word file and uploaded to the iCamp Trial2 Weblog (Section 3) at a different time. Students were required to download the file, fill it in and send it back to the evaluator as an email attachment.

Background Survey: It was administered shortly before the beginning of Trial-2. It gauged the students' demographic data, ICT competence, cross-cultural collaboration experience, self-directed learning knowledge, and expectation as well as motivation for participating in Trial-2.

Mid- and End-Phase Periodic Surveys: They were administered in the mid-phase and end-phase of Trial-2. In both surveys, students were required to report their perception and usage of all the eleven tools provided by rating a set of twelve statements with a 5-point Likert scale (1- "strongly disagree"; 5 - "strongly agree"). An option of "Not Applicable" designated as 6 was given as well. We aimed at tracking how the *perceived usability*, *user experience* and *acceptance* of the selection of social software tools for Trial-2 have changed over time. The students were also asked about the use of the feeding mechanism (cf. the First Phase of Section 3). The End-Phase Survey was similar to the Mid-Phase one, and additionally contained some open questions to collect students' comments on their PLC. Furthermore, the students were asked to rate their own SDL competencies with a set of eleven statements adapted from Knowles (1975) (see http://www-distance.syr.edu/selfrate.html) (Table 1).

Table 1: Self-rating scale on self-directed learning competencies

Scale:
LO: If you perceive that currently this competency area is LOWER than it was before the iCamp project
SA: If you perceive that currently this competency area is the SAME as it was before the iCamp project
HI: If you perceive that currently this competency area is HIGHER than it was before the iCamp project
NE: If you perceive that you have NEVER developed this competence.
Competency (C)
C1. An understanding of the differences in assumptions about learning and the skills required for self-directed study
C2. A concept of myself as being a non-dependent and self-directed learner
C3. An ability to relate to peers collaboratively in seeking and providing help pertaining to learning activities
C4. The ability to diagnose my own learning needs realistically
C5. The ability to translate learning needs into learning goals, plans, and activities
C6. The ability to relate to teachers as helpers or facilitators and take initiative in making use of their expertise
C7. The ability to identify human and material resources appropriate to different learning needs and goals
C8. The ability to select and utilize effective strategies for making good use of learning resources
C9. The ability to collect and validate evidence pertaining to my accomplishment of various kinds of learning objectives
C10. The ability to select and utilize particular tools for particular learning activities
C11. The ability to specify criteria for evaluating the progress of your work
C12. Other:

Note: For each of the statements, the student needed to specify which of the four nominal scales was appropriate.

Personal Learning Contract (PLC): Students were required to develop a PLC with four major elements, including (i) What are the topic and purposes of this project? What are my goals in it? (ii) What actions we will take and which actions I am responsible for? (iii) What resources we intend to use in our project and which resources are important to me? (iv) What criteria are used for evaluating my work? The students could construct their PLC in their personal weblog or iLogue, a wiki-based tool specifically developed by the iCamp technical team for supporting the versioning control of a PLC.

Interviews: They were conducted on an individual basis with a lightweight videoconference tool Flashmeeting (http://fm.ea-tel.eu/). Records were transcribed and analyzed.

Emails: We collected emails from the students by asking them to send us as a batch after the trial was ended. We analysed the emails with the modified Fran Henri's (1991) model. Of particular interest is the attribute "participatory activity" with four values: *coordination* (e.g. negotiating a meeting date), *technical* (e.g. resolving issues about tool uses), *social* (e.g. sharing personal problems), and *task* (e.g. discussing the design of the questionnaire).

5. RESULTS

As described in Section 3, the common tasks that all the participants should achieve are: completing three surveys, developing a learning contract, accomplishing their group project, and attending two online interviews. To enable us to gain insights into the factors contributing to effective collaborative learning, we conducted in-depth case study of three students (Table 2), who have achieved all these tasks and obtained a

final score of above 90 (out of 100), based on the assessment on the student's project artefact by the respective group facilitators. All these three students are female.

Table 2: Background and self-rated attributes prior to the trial

Code[#]	Project No. : Theme	Country	Major, Level	English Level*	ICT Skills*	Motivation Level*
P3S1	P3: Open Source	Poland	Sociology, undergrad.	4	3	4
P7S1	P7:Cybercrime in Europe	Poland	Sociology, undergrad.	3	4	3
P11S5	P11: New media	Slovenia	Engineering, postgrad.	4	3	3

[#]Code: P = Project number; S = Student identifier; * Five-point scale: 1-lowest, 5-highest

Case Study 1: P3S1

Prior to Trial-2, P3S1 never used blog or wiki but sometimes used IP telephony and chat. She has had positive teamwork experience. She expected from the trial to learn about a specific topic as well as new tools, and to get to know people from other cultures. In the Background Survey, P3S1 described SDL as *"In self-directed learning a student is responsible for what they will learn. They can arrange "classes" for themselves – they choose topics, dates, ways of communicating. There are also some supervisors, but they do not control the students"*. This verbatim showed that she had quite a good understanding of the notion. According to the Mid-Phase Survey, P3S1 learned to use seven of the 11 recommended tools on her own. She dropped her plan of learning two other tools (Scuttle, xLite) because her group-mates refused to use them in the project. In the Mid-Phase Interview, she remarked that she was confused about the scope of the project and the usage of some tools. She commented that more guidance should be given in the beginning phase of the project and that the facilitator could then fade out to play the role of consultant. She actively sought help from her facilitator and took initiative to contact her peers. She took a pragmatic approach to learn only those tools that she perceived necessary to meet her immediate needs.

P3S1 had a good understanding about PLC, as shown by her ability to articulate its main components and functions, and thought that a group learning contract should also be developed. She posed her revised PLC in her blog three weeks before the project ended. The quality was fair: the strengths were that she defined a hierarchy of goals and that the planned actions were relevant, addressing personal and others' needs. The weakness was evaluation criteria; she just adopted the assessment scheme proposed by the facilitator without customizing them with respect to the project goal and personal needs. In the End-phase Survey, she stated that she valued PLC as a tool for planning and regulating the group work. Similar opinions on PLC were expressed in the End-Phase Interview where P3S1 also revealed her frustration about the passiveness of her group-mates who gradually became more active because of her persistent efforts for getting them involved in the project. Of the eleven SDL competence areas, she perceived that five remained the same and five improved but one had never developed (i.e. C7 in Table 1). Nonetheless, P3S1 remarked that in general she held positive regard of the trial, because she could learn about the new tools, improve her communicative skills, and increase her knowledge of the project topic.

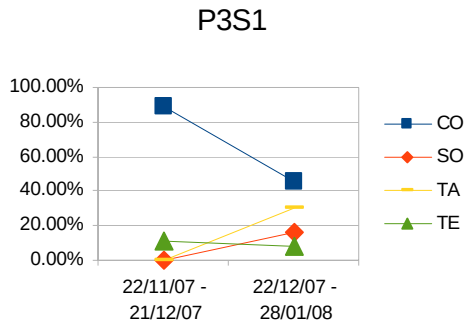

Figure 1: Trajectory of P3S1's participatory activities

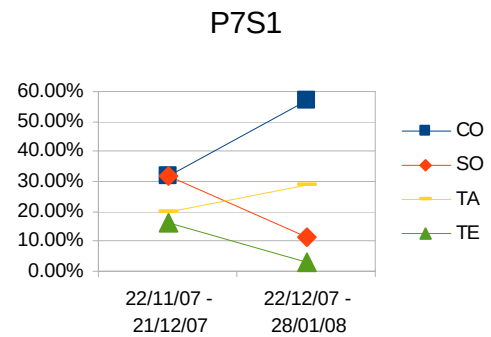

Figure 2: Trajectory of P7S1's participatory activities

To identify the trajectory of P3S1's communication patterns over time, we observed how the distribution of the types of her email message units has changed over two periods of time, namely Nov-Dec and Dec-Jan. Figure 1 shows how her types of participatory activities have evolved: the number of coordination (CO) message units dropped substantially and the number of technical (TE) slightly decreased, whereas the

number of social (SO) and task (TA) increased moderately. These observations implied that the coordination effort was taken over by her group-mates and she focussed on the project tasks in the End-Phase.

Case Study of P7S1

Similar to P3S1, before taking part in the trial P7S1 never used blog or wiki, but sometimes used IP telephony and chat. She had some positive collaborative experiences with international students. Out of curiosity and eagerness to learn English, she participated in Trial2 and expected to learn new tools and to collaborate with others. Her initial understanding of SDL was blank, as shown by her response: "*I have no experience with this* [SDL]". According to the Mid-Phase Survey, the three tools she used were blog, wiki, and Doodle. She learned to use them by reading the tutorials without any help, and found weblog and wiki not easy to use and her acceptance towards them was low. In the Mid-Phase Interview, the group was in a rather loose state then. She seemed hesitant to proactively contact her group-mates whose blogs she observed closely to see any sign of action on their parts. Her facilitator initiated the communication with her via email.

P7S1 pointed out that the notion of PLC was entirely new to her. But she was optimistic about its usefulness because she would be motivated to make use of an object created by herself. Within 4 weeks, she has developed three different versions of PLC with increasing comprehensiveness; they were posed in her blog six, five, and three weeks before the end of the project, respectively. The PLC was revised based on the facilitator's feedback. The quality of the PLC was high in terms of relevance, clarity and feasibility. In the End-Phase Survey, P7S1 confirmed the values of the PLC for enhancing her understanding about the project and her specific role in it. She also emphasized the importance of constantly updating her own PLC based on feedback from group-mates who shared the project's goal. She specified nine evaluation criteria with three of them being socially-oriented (i.e. improve group cohesion), which, despite her effort, could not be fulfilled because of the low responsiveness of her peers. In contrast, her other six self-oriented criteria could be fulfilled to a large extent based on the observations of her performances and behaviours. Her general acceptance towards the tools has increased.

Besides, she perceived that two SDL competence areas remained the same (i.e. C1 and C2 of Table 1) and the others improved. In the End-Phase Interview, P7S1 expressed her dissatisfaction with her low activeness of her group-mates from whom she was eventually able to elicit responses. On the other hand, P7S1 was satisfied with her communication with the facilitator, though she expected more direct guidance from him in the beginning of the project. P7S1 acknowledged the value of PLC, despite her early confusion how it should be constructed. She concluded that she could learn from the trial about the new tools and the fact that the online cross-cultural group work was much more challenging than she expected, especially when the working styles of the members were so divergent. She commented that the number of tools offered was overwhelming and most of them were not necessary for her project tasks.

We also identified the participation trajectory of P7S1 over time. Figure 2 shows how her types of participatory activities have evolved: the number of coordination (CO) message units increased substantially, indicating that she assumed the leadership role in her project group over time; the number of task-oriented messages increased whereas the number of social (SO) and technical (TE) dropped, suggesting that she concentrated on her task and became less concerned about the social relationship with the group-mates whom she lost trust because of their tardiness to respond.

Case study of P11S5

In the Background survey, P11S5 indicated that she had very good experiences in teamwork and online courses in which the main communication tools were blog and email. She participated in Trial-2 because she wanted to test new tools, learn a specific topic from different perspectives, and meet new friends. She had a reasonably good understanding of SDL, as she wrote in the Survey: "*[SDL] is a practice way to take some lectures or just learn about a specific topic. We can adapt it to our time and the responsibility of read the enough information and solve or questions is in our hands because almost all the time we are free to look for the information that we are really interested in.*"

P11S5 has developed three versions of PLC with each version being revised based on the feedback from the facilitator as well as on her ongoing reflection on the project tasks. The quality of her PLC was high in terms of clarity, comprehensiveness and feasibility. She negotiated with the facilitator about the evaluation criteria against which she would be assessed by the end of the trial. Such negotiation ability is deemed a significant milestone in SDL. Furthermore, P11S5 tried out all of the recommended social software tools with some help from her facilitator and peers, and intended to use them after the trial. She knew how to aggregate contents (i.e. the feeding mechanism) with most of the provided tools.

P11S5 also demonstrated her perseverance in pursuing her goal of accomplishing the project task despite the initial frustration engendered by the non-responsiveness of her group-mates. In the End-Phase Survey and the End-Phase Interview, P11S5 affirmatively indicated that her SDL competencies had improved in different aspects. Interestingly, she held very positive opinions on all the aspects of Trial-2, despite the general low activity level of her group. It might be attributed to social desirability effects because she was well aware of being involved in a research project. Figure 3 shows the trajectory P11S5's participatory activities: the number of coordination (CO) message units increased whereas the number of social (SO) and task (TA) dropped, suggesting that she has assumed the leadership role in her group over time to orchestrate the activities, e.g. arranging group meetings, assigning subtasks to fellow group-mates, and interfacing different parts of the project.

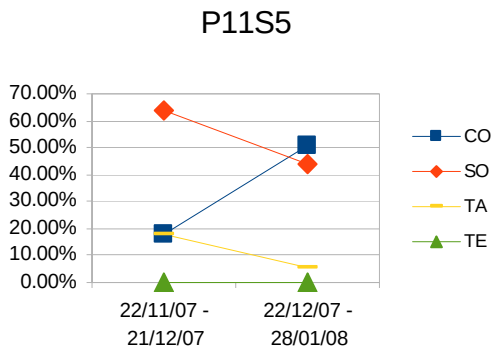

Figure 3: Trajectory of P11S5's participatory activities

Whereas the above three cases were successful showcases of the positive impact of a fully online collaborative learning environment with the support of social software on SDL, there were some unsuccessful cases. Unfortunately, the data of these students were not accessible as they refused to share anything with us. Hence, we cannot understand what factors have hindered them from engaging in the trial. Furthermore, while some students appreciated the value of PLC as a useful tool for them to plan their activities and thus developed one already in the early phase of the project, some other students constructed their PLC only in the end phase. As shown in the interviews, quite a number of students did not grasp the concept of PLC, nor did they bother to seek the related information actively. Indeed, we believe that initial learner anxiety and confusion about SDL or PLC often places the learner in a zone of discomfort. Some students were able to overcome such discomfort, whereas the others were overwhelmed by it and then withdrew from the challenge.

6. GENERAL DISCUSSION & CONCLUSION

The two sociology students (P3S1, P7S1) were less experienced with the communication tools such as blog or wiki than P11S5 with engineering background, but this initial difference seemed irrelevant for their later performance, because the tools were simple and relatively easy to master. Whereas P3S1 and P11S5 had quite a good understanding about SDL (cf. their definitions in the Background Survey and explanations in Mid-phase Interview), P7S1 had no idea about it. However, this pre-knowledge difference did not impose any visible effect on the quality of PLC that they developed subsequently (i.e. the fair quality of P3S1 as compared with the high quality of P7S1 and P11S5). All the three students explicitly recognized the usefulness of PLC, as shown in their responses in the End-Phase Survey. However, the fact that their PLCs were revised or even first produced at the time so close to the end of the project, the real impact of PLCs on the actual project work seemed speculative. The students' recognition of the values of their PLCs (the End-Phase Survey) can be attributed to cognitive dissonance or the social desirability effect.

Given its ease of use, publishing a PLC to a blog presumably is a good means to invite feedback from group-mates who share some common goals. However, it did not work well in Trial-2 in general, because of the relative poor communications among the group-mates. Indeed, without social inputs, the role of social software like blog, wiki and forum in promoting SDL by channelling timely feedback to individual learners is undermined. Similarly, the need for the feeding mechanism, which supports an all-in-one-place view, was low, given the small group size and limited content.

Whereas P3S1 and P7S1 seemed not well prepared or accustomed to the freedom to define their own work, P11S5 seemed uncertain how far she could push her own idea. Meanwhile, some facilitators strived to find the balance between "letting go" and "taking the rein". These factors led to the confusion experienced in the beginning phase of the project. After the facilitators set the stage, the students could then bootstrap to work towards the goals. Intercultural online setting made it especially challenging for the trial participants,

who had never met before, to collaborate. The non-responsiveness of the group-mates to emails and low posting frequency in blogs were particularly frustrating, because they were key means to share ideas and reach consensus. The lack of such shared information jeopardized the students' SDL opportunities to pursue their own needs and goals. In the case of P3S1, her interest in learning the tool xLite (IP telephony) was thwarted by the group's refusal to deploy it.

The learning environment designed for the iCamp Trial-2 was complicated and messy as it was embedded into some regular academic courses. Not only institutional but also cultural differences influence the participants' attitudes and behaviours. Under these situations, it is extremely difficult to disambiguate causality. Nonetheless, we attempt to identify critical success factors for such an innovative setting with the data of three case studies. First, the fact that all the three active students are female leads to the question whether gender is a significant factor determining the level of involvement. On the contrary, one would expect that female tends to rely on *interpersonal relations*, which are difficult to build in a virtual setting, to collaborate. Second, the three students had relevant, *positive* prior collaborative experience, suggesting that this factor could contribute to their persistence in bringing the collaborative activities forward. Third, despite the high SDL competencies demonstrated by the three students, the initial push from the facilitator proved essential for overcoming the group's inertness. Fourth, social software has the potential to facilitate individuals' SDL competencies, but the realization of the potential is stipulated on the *motivation* of users to achieve their personal learning goals with such software, which, is nonetheless one of many viable types of educational technologies.

ACKNOWLEDGEMENT

This work has been financially supported by the European Union under the ICT programme of the 6th Framework Programme. The authors express their gratitude to the facilitators, students and research team members involved in the iCamp Trial-2 for their generous co-operations.

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