

Learning Collaborative Learning: A Distance Learning Project in the DUSC Programme

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Abstract: A joint Dutch-Scandinavian distance education project, part of the DUSC Programme, was carried out from November 1999 to the summer 2001. The aim of the project was to develop a module to train lecturers in how to develop a course based on using the concept of collaborative learning in distance education, and to test and evaluate the module. In the developing process, the authors themselves, from two different countries and four different faculties, went through a collaborative process, exploring different aspects of communication and collaboration at a distance. The main communication tool was the asynchronous German BSCW system, but also the synchronous tools NetMeeting and videoconference, and face-to-face meetings were used.

The DUSC initiative

In the summer of 1997 four institutes of higher education in the Netherlands, namely Hogeschool Haarlem, Hogeschool Holland, Hogeschool Amsterdam and Hogeschool Rotterdam formed the *Randstad Consortium* in a joint effort to develop expertise with Scandinavian institutions of higher education in Denmark, Norway and Sweden, to begin with.

A steering committee of the Randstad Consortium, consisting of the Heads of the International Offices of each of the Dutch higher educational institutes and an independent programme manager, started by establishing an outline of the intended "Dutch Scandinavian Cooperation in Higher Education" (known as DUSC from then on). Information and Communication Technology was an explicit objective within DUSC from the start of the programme, but was regarded at first as a sub-component of three broadly formulated projects, namely:

- Double degree programmes
- Innovations within Teacher Training Colleges & Education
- Active Learning

One group that was formed under the proposed project of *Active Learning* was a project group interested in developing a module to train lecturers in how to develop a course for distance education, making use of the concept of collaborative learning. This DUSC project group (one out of approximately 10 project groups) was later to be called *CLiDE*, Collaborative Learning in Distance Education. The CLiDE group made a real and solid start at the second (annual) DUSC conference held in Oslo, Norway in November 1999 (DUSC 1999). The conference provided the project group, now consisting of four lecturers (the authors of this paper) in higher education from three different institutes, with the opportunity to draw up a work plan of activities, which formed the basis of cooperation for the months to come. ICT was to be the main means of communication, in line with one of the specific objectives of the DUSC initiative.

Project aims, target group

The aim of the project was to develop a module to train lecturers in how to develop a course based on the concept of active learning in distance education. The idea was that up to now lecturers have been trained to

develop an active learning course in a classroom situation, but often do not have the skills to develop such a course for their students at a distance. The strength of collaborative learning, which is brought forward by many educational theorists, lies in the importance of social interaction to learning. As Information and Communication Technologies opened new ways of learning, ICT allowed new ways for group interaction and support, whilst at the same time providing access to a global network of distributed (personal) knowledge and expertise of peer learners, experts, teachers, trainers and tutors. After the development of the module the module was to be tested and evaluated by running it with a selection of interested lecturers within the educational institutes of the DUSC network.

During the joint DUSC conference in Oslo, October 1999 (DUSC 1999), a *Plan of Activity 2000* was developed for the project group. The objectives stated in the plan clearly divided our work into two different phases: Firstly, *To develop a module to train lecturers in how to develop a course based on using the concept of collaborative learning in distance education*, and secondly, *To test and evaluate the module*. Accordingly, the first few months we were supposed to cooperate and collaborate in a creative design and development process, and then, for the next months, try out our results with a group of students. Most of the collaboration was to be mediated by means of electronic networks. This way of organising a project work seemed very useful and interesting, because by developing a course in a collaborative way (phase 1), we would go through processes similar to our students when the developed module was to be tested and evaluated (phase 2). We believed that this experience would make us better teachers and tutors for our students. For distance education courses in general, this way of developing a course may prove to be successful.

The Project, Phase 1

For the first phase, the *Plan of Activity* outlined four different elements or themes to be worked out by the project group:

- A. The concept of collaborative learning
- B. The choice of the digital learning space
- C. The practical experience
- D. Critical success factors

This phase had to be finished by October/November 2000, in due time to start phase 2. In phase 2, starting primo December 2000 and ending in May 2001, our developed module was to be tested and evaluated by about 10 lecturers/academic staff from the DUSC participating institutions.

1. Working methods

The initial plan was to use *the seven-jump procedure*, known from the *Problem Based Learning* literature (Van Til, Van der Heijden 1998) in our collaborative work in the project group. In many branches of college training, this method gives good results in traditional collaborative processes. In this project, we realised at an early stage that PBL was perhaps not the best basis for collaboration in our considered themes. This can have many different causes: It may be due to the fact that the project group members originated from different academic traditions, with diversified teaching experiences in very different subjects. Not all of us were familiar with the use of the PBL method, and we found out that the objectives in the project did not sufficiently match the PBL model.

This was in fact a *distance project group*, with members in two different countries (The Netherlands and Norway). We had to rely on electronic communication, and decided to do the greater part of our collaboration based on the asynchronous system BSCW (Appelt, Mambrey 1999). BSCW is a computer-based conferencing tool, developed at *German National Research Center for Information Technology* (GMD), and have facilities for a great range of functionalities: Managing discussions and collaborative processes, possibilities for sharing documents, sending and receiving messages, organising the information in many different ways, searching and statistical possibilities, among others. We found this tool to be a good place for our discussions and contributions toward our final product: The module. We could all reach our common space in BSCW from wherever we were in the world, and so our project work, as far as this collaboration is concerned, was distance-independent.

The themes A through D (see above) were organised to secure the best structure and progress: Each of the project group members was assigned the role of moderator for one of the themes, and thus our responsibilities were shared by all of us. It was also our intention that being in charge in the moderating role would provide us, the project group members, with valuable experience in this aspect of conferencing and collaboration work. By doing this in phase 1 of the project, we felt we would be better prepared for the testing and evaluating part (phase

2). The literature of distance teaching and learning; here we will mention (Hara, Kling 2000), (Salmon 2000) and (University of Illinois 1999), gave us important inputs for our work.

We also planned other activities, other ways to do part of our project. In theme B, *The choice of the digital learning space*, we used a videoconference session, in addition to BSCW. In theme C, *The practical experience*, we used a synchronous, computer-based conferencing tool (Microsoft NetMeeting), and after theme C, we planned and carried out a face-to-face meeting in Bergen. See below for experiences with these different sessions. A [web-site](#) (CLiDE 2000-01) was also established for the project; there we gathered some overall information, plans, links to literature, etc.

Our collaborations in phase 1 of the project resulted in two papers, *The Concept of Collaborative Learning and The Tools* (given as appendices in: Stofberg, Otteraa, Geers van Gemeren, Knudsen 2001), meant as background material for the students in phase 2.

2. The collaboration process on BSCW

The collaboration process toward the course module gave us a lot of challenges. First of all we had to get familiar with the BSCW tool, and how to use it in this setting. We experienced the importance of carefully organising our material, and many times we had to rearrange part of the structure to make the content clearer. We will not here go into details about the BSCW structure. However, one of the main objectives in the project is to do collaborative projects by means of electronic communication, and it is therefore important to identify how some system characteristics influence the collaborative process and collaborative learning. For a visual impression of the BSCW interface, see (BSCW 2001). More details and some screenshots from the project are given in (Stofberg, Otteraa, Geers van Gemeren, Knudsen 2001).

3. Videoconference

Although the BSCW asynchronous system was used throughout the project as the main working arena, we were aware of the fact that collaboration benefits from the use of a synchronous tool, where certain aspects of communication are concerned. Therefore we decided for one of the themes to have a videoconference session. To be well prepared for the videoconference we studied some useful information, which was provided by (SURA 2000) and (Ministry of Education, British Columbia 2001).

We found these sessions valuable supplements to our asynchronous communication method since we were able to talk to each other as if we were in a real, physical meeting. Nevertheless, we found videoconferences to be a rather exhausting (though inspiring) experience, probably because it is so intensive. You have to keep focused on a number of things (the screen, the contents, the camera, the way you should wait a few seconds before you react and more) that do not come to you automatically, which is all due to the strict protocol of the videoconference in order to make it successful and efficient.

4. NetMeeting conference

Videoconferences used on a regular basis based upon the ISDN-technology will be rather expensive. It is expensive to hold open lines for hours, and expensive equipment is necessary to obtain sufficient communication quality. There are indeed other ways to communicate synchronously, and we decided to try Microsoft's NetMeeting, based on the H.323 Internet protocol. This tool does not give the same "feeling" of being present in a physical meeting, because with NetMeeting we usually sit alone in our office, communicating with our collaborators through the computer.

With NetMeeting we experienced other difficulties, namely the inability to operate through the firewalls of our institutions. This was, and still is, a serious obstacle for synchronously computer-based communication systems. In this project, we evaded the problem by using computers outside the firewalls, and thereby got some experience with the tool, but for future application, special provisions must be made within our institutions to make the use of Netmeeting more accessible for staff members in (international and distance) projects like these.

5. Face-to-Face (f2f) Meetings

If possible, this is of course the best way to meet other people, talk together and collaborate on a subject. In this project, it was our intention to examine different ways to collaborate where f2f meetings were impossible or at

least very inconvenient. Fortunately, even if we were located in two different countries and regular f2f meetings were inconvenient, we did manage to meet four times during these two years, in Amsterdam, Oslo, Bergen and then again in Amsterdam and Haarlem. Looking back, what we regarded as most important during these meetings was the opportunity to get familiar with each other, to have a better idea of the people we were going to cooperate with, to hear each other's voices, feel the atmosphere and to get attuned to each other. Sometimes in our virtual meeting place misunderstandings arose, and we experienced a f2f meeting as a good place to clear things up.

It was our intention to have a f2f-meeting for our project students, to prepare the ground for the collaboration process, to make good and workable arrangements and agreements before starting on the virtual part of the collaboration. We realised that the fact that we were able to meet physically as the very beginning of our project had immense consequence for the communication in our group. Unfortunately it was not possible to arrange a similar f2f-meeting for our project students, and the project suffered from that.

The Project, Phase 2

1. Approach

Our plans were to start the course at the annual meeting of the DUSC network, which was to be held at Gävle, Sweden in November 2000. Much of the material we had studied about web-based education and distance learning had made us aware of the fact that it is extremely difficult to start and successfully finish a course with a virtual group. Major reasons for this are the technical difficulties that students have to overcome in getting started to work with the material and the equipment, and the social side of working in a group with people who are unfamiliar to you. The face to face workshop was meant to address both obstacles and pave the way towards a well-run educational course via the internet, building on the knowledge and practical skills on the one hand and having broken the ice (probably even establishing good contact) with the group members of the module ahead. However, the DUSC steering committee cancelled the annual meeting at Gävle, which meant that our plans for introducing and starting up the course f2f had to be dropped as well, unfortunately.

A week or two before the course started all the participants (there were now five registered participants) were notified by way of an e-mail (of a social character) that the course was due to start within a short period and that they would receive a formal invitation to register with the BSCW platform. The next step was up to the participants, namely to register by giving a user name and a password, which automatically allowed each participant entrance to the workspace with all the course material designed for them.

2. The tasks

From the start the tutors intended to work via the principle of: "learning by doing it". Apart from that, there were more specific objectives to reach. For each of the tasks, we specified certain learning objectives and a number of assignments. It was decided that the moderation was to be done by tutors in pairs. Moreover, the pairs needed to be of mixed nationalities. The two tutors would then take turns in taking the leading role in the moderation of the course, and would turn to the other if he/she needed advice or support in the moderation task. At the end of each task the main tutor summarised what had been achieved and rounded off with encouraging remarks towards the next task.

Task 1: For the first task the learning objectives were:

- Familiarising yourself with the BSCW system
- Finding your own and the group working methods
- Operating at the BSCW "expert level" at the end of the task

The assignments designed for this task had an introductory and familiarising character. They were meant to introduce the students to each other, to establish some ground rules to work with each other and to try out a number of the most useful buttons and options.

Task 2: The learning objectives for this task were:

- identifying problems and possibilities in digital learning environments
- raising awareness of learning possibilities when the role of a teacher changes from expert to coach/tutor/mentor
- increasing skills in solving the above-mentioned problems in digital learning environments

The assignment for this task was designed by way of a case to be solved by the students jointly, while pointing them to some resources for them to use for this task.

Task 3: The learning objectives for this task were:

- identifying the differences and possibilities between synchronous and asynchronous tools in distance learning
- assessing the value of each of the tools for a specific learning situation, in other words: when does one use what tool and for what purpose?

The assignments were meant to make a start with the BSCW system for the discussion of a number of selected statements, all focussed on the use of different tools in distance or web-based learning. Again resources were supplied with the task, e.g. a succinct chapter outlining what tools were available and how they were used in distance education in general. In the course of this task the students would automatically find the need for some synchronous learning, using a tool like video-conferencing or chatting.

Task 4: The learning objectives for this task were:

- collecting, synthesizing, absorbing and elaborating on the material you have been working on in a productive way
- gaining an insight into the potential and complexity of web-based collaborative learning methods
- gaining an insight into how group processes can stimulate but also hinder the final product results
- experiencing the search for a suitable working method to deal with the complications in working towards a common goal
- finding a suitable studying routine for collaborative work in web-based environments.

The assignments were to produce a written paper as a *joint* effort, applying all the knowledge and skills gained in the course. The students could choose from a number of options and were given some further instructions to structure the task.

3. Evaluation

Studying the contributions from our students, there are definitely a number of evaluative remarks worth mentioning. Here is a collection; more details are given in (Stofberg, Otteraa, Geers van Gemeren, Knudsen 2001)

- *Starting position of participants:* Better facilitation of participants as regards time, equipment and support within the organisation they work for was one of the suggestions for improvement. Credits for being active in a course as a kind of reward for efforts on the part of the participants, was another suggestion.
- *Starting a virtual course without face to face introduction:* The high drop out rate of this CLiDE course may be due to the lack of a face-to-face introduction.
- *Design and structure of the course:* An open structure with tasks and assignments to be filled in by the participants leads to difficulties, was the experience of the participants.
- *Videoconferencing:* A videoconference must be planned and prepared, which is a problem.
- *Discipline:* It is difficult to establish and keep up the routine of visiting the virtual workspace and contributing twice a week. E-learning demands a great deal of discipline.
- *Atmosphere:* Assessing the temperature or atmosphere in the group process may be a good reflection and indication of the group products and results.

The tutors would most probably corroborate that these six issues were also the issues that affected the process and product of their collaborative work while designing and working out the course (phase 1). The difference that the tutors persisted and some of the participants dropped out is possibly due to the fact that the tutors knew that they were working towards a most concrete product in the form of a module and that the tutors were indeed facilitated by the DUSC subsidies as regards their time input in the construction of the module.

Conclusion

Looking back now, we can conclude that our CLiDE project within the DUSC programme was one of the more successful projects that could stand the test of time. Although the project had its difficult moments, there was a general feeling of commitment to continue and finish the project properly. Keeping a long-term international

relationship or collaborative project going is not an easy matter. Some of the factors that contributed to the success of the project are, in our view:

A project embedded within a larger subsidy programme or structure. The facilities that were created for us within the three-year DUSC programme as regards time, money and expertise in running a large-scale international cooperation programme, provided us with a solid base to work from by its excellent management and organisational structure.

Group composition. The number of people (four in all) was the ideal number to work with. The fact that we came from a diversity of four different study programmes within higher education but were strangely enough often in total agreement with each other, can also be seen as a positive factor. We would like to propose that a project group in order to be successful should incorporate (within the group as a whole), a range of capabilities or characteristics. As it happened we complemented each other in many ways.

The use of a computer conferencing tool. According to us, our asynchronous BSCW tool facilitated the way we could work together. It meant a continuous meeting place for us, a stable base to work from and at the same time an easily accessible archive of all the material that we discussed and all the activities that we undertook.

Nature of the project. Building up expertise together, developing yourself and the group as a whole by going through a number of separate and clearly structured stages with each other, taking rotating independent responsibilities (to keep each one of us alert and motivated), pooling resources and knowledge, making joint selections, and then taking these personal learning experiences even further by putting them to use in the same project: this variety of elements and tasks kept the project alive and contributed highly to our achievements. All in all, we feel we have greatly benefited from this unusual experience provided for us by the DUSC programme.

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