EQUIPE PROJECT
Case study

Quality improvement of collaborative learning through organisational change
- in a web based course at the University of Bergen (UiB)

1. Introduction
The UiB course referred to here is called 'PRISME – (The Teaching of) Norwegian as a Second Language', for which the target group is teachers who teach or intend to teach Norwegian as a second language to children and/or adults. PRISME is a part time course of about 10 months' duration, which means 50% progress compared to a corresponding full time 5 months course on campus. The fourth cohort sat for their exam in June 2003, the first cohort started in January 1999. The UiB group responsible for the design and further development of the course consisted of faculty, administrators and pedagogical advisers from Department of Nordic Languages and Literature (NI) and Centre for Continuing Education (SEVU).

The three first student groups were charged a study fee while the fourth one did not have to pay for the participation.

The following is a brief introduction to a specific process aiming at improving the virtual collaborative learning in PRISME .

2. Topic, theme or focus of the quality project
The project was focussed on trying to improve the students' collaborative learning through change of our organisational model as well as through strengthening the demands on students' commitment to the learning community of fellow students. In the latest/fourth version of the course we also changed our methods of assessment.

3. Rationale and motivation for undertaking the quality project
The project with its focus was trigged in particular by what we experienced from the first running of our course. Through our monitoring and students' evaluation we found that students' collaboration in groups varied enormously from group to group, quantitatively as well as qualitatively. We observed great variation as to the number of group members actually taking part in the discussion, to what extent (how often) they did so, as well as to their seriousness and dedication in relation to the joint group task. This variation also was reported as a problem by several of the students, mostly students who realised their own responsibility towards the learning community, participated actively and contributed seriously themselves, but who complained that some group members did not contribute very much to the team work and in some cases did not even participate at all.

The course design group (faculty and pedagogical as well as administrative professionals at NI and SEVU) were conscious that the problems we experienced with student participation and collaboration and in our web context were not at all unique, but rather quite common in several web based/web supported courses that we knew about, and also represented problems difficult to solve. Though, through a process of continuous improvement based on evaluation and revision ('rolling remake') we would aim at – to some degree - increasing the students' input to and activity in their student group.

The rationale for undertaking the project within this specific course was partly that we from the very beginning of our work with the course supposed that the way we organised the groups, the rules we set for the collaboration as well as the degree of commitment or obligation we demanded from each and every group member would all influence on the quality of the teamwork and hence on the learning. When our comparatively comprehensive and detailed evaluation of the process and results of the first cohort clearly supported our assumptions here, we were ready for starting a quality process in order to develop models and frameworks for student collaboration that improved the quality of the teamwork and the learning. Our aim was that the models and frameworks first and foremost should function in our specific course context, but we also hoped that they might be useful in other courses as well.

Our basis for focusing that much on team work was our belief in a social constructivist pedagogical approach in general, and the importance of exchange of experience and negotiation of knowledge in our specific target group of professional adult teachers – in particular.

4. Objectives – what was the quality project seeking to achieve

The main and overall objective of our project was to improve students' learning through collaboration in groups. We wanted to try to do this through change of our organisational model as well as through strengthening our expectations or even demands on students' quantitative and qualitative commitment to and involvement in team-related work. Through our monitoring and observation and from students' feedback/evaluation we actually from the very beginning identified these elements as critical as far as collaborative learning was concerned.

5. Model and approach to quality

Model

As already indicated above we did not relate our quality work to elaborated models or predefined set standards for quality work (like ISO9000 or EFQM). In our institution we have so far neither gone for nor implemented any such overall standard for continuing education or for distance education.

Our quality project had a character of review and development based on a comparatively broad evaluation of the very first running of the course. As will be shown below the evaluation was both summative (evaluation of 'the product' at the end of the running of each course) and formative as all results or findings were analysed and interpreted to see if and how they should influence on our course review. The evaluation was internal as far as there was not undertaken any external audit of some kind; the whole process was planned, managed and undertaken by the course design group. Our project hence was one of

organisational learning or 'experiential learning' where our institution through the design group might learn from experience related to a comparatively specific problem and during a quite long process. To have some basis for all this we started out with verbalising what we thought of as 'quality'.

Quality criteria

Before starting the work with developing the course we decided upon what we considered to be our success (=quality) criteria, which we divided into two main groups of 'product' criteria and 'process' criteria. Each of them was again related to a variety of aspects. The product criteria most strictly related to students' study success were as follows:

- A high proportion of the students registered for the final exam
- A high proportion of the students passing the examination
- Good marks
- Satisfied students

Sources/methods of evaluating quality

Our criteria related to all aspects of the course had both a quantitative and a qualitative character. When having decided what were 'a high proportion' and 'good marks', it was quite easy to measure 'student success' as described in the three first bullet points above in order to see whether the criteria had been met or not. This was more or less a question of reading statistics. The same was true when we examined to what degree student groups (or individual students) handed in assignments. However, it was of course quite another task to try to find out why 'student success' was not satisfactory – not to say if and to what degree it had to do with the quantity and/or quality of collaborative work. Hence we tried to make the fourth criterion 'student satisfaction' operational by making the notion both more detailed and at the same time relating it to several different elements in the study and the student situation. Within our restricted/focussed quality project those elements related to various aspects of group work and collaborative learning were the most important ones.

To get such qualitative information about 'student satisfaction' we utilised various sources of student information:

- Questionnaires (on paper) sent to the students at the end of the course.
- Monitoring of the learning process as to student reactions/comments in the discussion forum
- Informal student reactions on telephone or by other channels

In addition we invited reactions from the teachers/tutors.

Evaluation stages

Our quality project or process of evaluation can with Calder (1994[1]) be described as a series of different stages:

1. Identify an area of concern
2. Decide whether to proceed
3. Investigate identified issues
4. Analyse findings
5. Disseminate findings and recommendations

[1] Calder, Judith *Programme Evalaution and Qualit. A Comprehensive Guide to Setting up an Evaluation System,* Kogan Page 1999

6. Review the response to the findings and recommendations and agree any corrective actions
7. Implement agreed actions

6. Project organisation, implementation and persons involved

The project was jointly managed by NI and SEVU through a project and course design group. The representatives from NI were the assistant professors Kari Tenfjord and Jon Erik Hagen, while senior executive officer Toril Eikaas Eide was the SEVU representative. Together these three persons were responsible for the design and coordination of the course in terms of content, pedagogical model and administration.

The project was organised and carried out as an integral – or rather embedded - part of the course management, evaluation/review, and further development/improvement of the course design.

The course management comprised development and running of the PRISME course, which since January 1999, as already mentioned, have had four classes or cohorts of students:

1st class: January – December 1999 – 63 students
2nd class: January – December 2000 – 68 students
3rd class: January – December 2001 – 33 students
4th class: August 2002 – June 2003 – 96 students

Perhaps with the exception of stage 5 and 6, which were not given high priority, the course evaluation was implemented according to Calder's cycle of stages referred to above.

Course design related to the 1st class/cohort (January – December 1999)

As a background for understanding what was changed later in PRISME in relation to collaborative learning - and why - it is necessary to know a little more about the initial PRISME course design.

PRISME was the very first course at SEVU and UiB where a prerequisite for being admitted was that students had access to a computer with Internet and email. Hence we found it possible to have no organised face-to-face teaching.

To scaffold the students in their work and to help them organise their progress at a reasonable pace in order to succeed, PRISME was strictly organised with 19 blocks or sequences, each of which further divided into various activities of reading, TV-watching, listening to audio lectures, group debates and writing. The students were assisted by a detailed study guide containing information on and a schedule for this structure and these activities. It was however at this stage explicitly stated that the guide was just for guidance, i.e. an option not compulsory for the students to follow. This meant that

- Students were advised to try to create local groups, but there were no virtual or other obligatory groups arranged by us. (Partly because of the functionality of the platform and partly because the notion of local study groups was inherited from a very early stage of course planning comprising satellite transmission of lectures to local groups watching and discussing together. When we for various reasons chose to change our medium from satellite to TV/video, we actually were not mentally prepared to totally abandon the idea of local study groups.)

- Students were advised (not 'forced') to reserve every Wednesday evening for their group work.
- There was one assignment in each block which student groups might hand in (electronically), preferably as results of team work, but this was not compulsory either.
- Tutors/teachers commented on the assignments, but they were not marked or made a part of the formal assessment in any way.

7. Stepwise results/outcomes of the project and stepwise implementation of the results

In the following we will concentrate on a short presentation of the evaluation results in relation to each of the four classes or cohorts, our interpretation of them, our agreed actions for improvement and how we tried to implement the actions. For space reasons we will not and cannot here go into details as far as numbers and percentages are concerned, but just refer the general tendencies in the evaluation results as basic background information in relation to the arrangement we implemented to try to remedy what we found to be shortcomings in the design of the respective course versions.

As a result of our quality project we from the one class to the next changed our course model/design as to group organisation and arrangements intended to strengthen students' commitment to fellow students and the learning community as a whole. This means that our latest course design differs from what we first came up with. In this version we also changed our model of assessment.

Results from the evaluation of the course design for the 1st class/cohort (January – December 1999)

Our evaluation and monitoring of the first cohort confirmed as central or even critical aspects that we from the very beginning had considered key quality questions such as questions of compulsory vs. optional arrangements and/or commitments for students concerning structure, management and organisation of groups as well as required participation in work with group assignments, in group debates and also in plenary discussion forums.

During the first course/class there were just a few students who managed to establish local groups. These students were in general satisfied with the outcome of their group work. However, some students had to travel relatively long distances to participate, and found this quite exhausting. Some of those who in practice had no possibility to participate in a group reported that they felt this to be unsatisfactory, particularly because only groups were invited to hand in assignments and get guidance and comments from the teachers. (The rationale for this requirement had of course to do with teachers' workload (a potential of individual assignments from 63 students in each of the 19 blocks).)

Few groups handed in assignments. Out of 63 students who started on the course about 59% sat for and passed the exam nearly one year after, and the average result (mark) was clearly better than the score for the on campus full time students[2] (2.48 vs. 3.3)[3]

Changes made after the 1st class/cohort

[2] There were 11 full time on campus students that passed compared to 37 part time distance students

[3] The scale of marks ranges from 1 to 4 with 3.9 as the limit for passing the exam.

In spite of comparatively good results it was - due to student feedback and our own observation - obvious to us was that it was necessary to do something with the organisation of the student groups in the 2nd class of students. It was inefficient that students had to spend time to find out if there were any students close enough to make it possible to collaborate, and also that they if they succeeded to do so, must be totally responsible themselves for organising and managing their groups. Most of all, however, we found our arrangement unjust to those students who in practice did not get the opportunity to participate in a group. At this time we also found our electronic tool as well as students' computer literacy had improved a lot. So we made the following adjustments. :

- As our electronic 'learning platform' now allowed us to organise virtual groups we decided that we, the project group/course managers, should divide the students into such groups.

This change was meant to make the course arrangement more just and also to assist the students so that they should not waste their time doing organisational work, which we realised ought to be a task of the course management. However, we did not at this stage address the problems concerning compulsory vs. optional arrangements, pacing and/or commitments for students, which meant that:

- We still left it to the students to organise themselves within the groups (management, ways of working etc.).
- Students still were just advised to spend Wednesday evening on the various forms of group activity recommended in the study guide.
- It continued to be optional for each student to participate.
- It consequently was not compulsory to hand in group assignments.

Results from the evaluation of the course design for the 2nd class/cohort (January – December 2000)

After nearly one year of study around 53% of the 68 students sat for and passed the examination, 6 percent lower than for the previous cohort. Besides, the average result (mark) was 2.58 against 2.48 the previous cohort, and also poorer than the score for the on campus full time students, which was 2.43. So in this respect we saw no positive results from the changes we made with the groups. Our observation and monitoring of the groups moreover showed us that just a few of the groups functioned well. Some of them spent much time organising their work, some showed no activity at all. Feed back from the students indicated that problems to some extent originated from difficulties with using technology, - partly because students still lacked confidence, training and/or competency, and partly because our system still was not fully functional for serving the needs of teamwork.

In spite of the above mentioned deficiencies, the overall student satisfaction seemed, however, to have improved slightly compared to the previous cohort. Nonetheless, the evaluation made us realise that we had to make further improvements of course design relevant to our elements in focus.

Changes made after the 2nd class/cohort

To improve the course in terms of student satisfaction we decided to make more changes related to the organised virtual groups. So we addressed the problems concerning compulsory vs. optional arrangements, pacing and/or commitments for students, which meant that we made the demands on and commitment of the students stronger, and as a consequence, the course as such less flexible. We also wanted to make collaboration easier for the groups both by doing some organising for them and by applying an electronic learning system, which was more appropriate for team work:

- We made it clear that it was expected that each group should hand in at least one assignment per group member during the course. This was written explicitly in all course information as well as in the study contract and the study guide. (However, we did not introduce any sanctions if this was not done)
- We published group lists that showed which student was responsible for which assignment. The purpose was to make explicit each student's responsibility as well as to make the process of organising the groups easier and more efficient for the group members.
- We introduced an electronic system that was more functional both in terms of having group debates, collaborating on the same document, publishing documents and commenting on it (for students as well as teachers).
- In all information about the course, as well as in the study contract and the study guide it was made clear that students must reserve Wednesday evening for the synchronous part of the group activity.
- In all the above information, guidance and contracts it was also stated that students were expected to participate actively in PRISMEs electronic learning forums.

We were clearly aware that the system with compulsory assignments was not good enough or would be as effective as we wanted as long as the assignments were not assessed e.g. as portfolios. WE thought that if that had been the case it might have influenced students' motivation positively. The assignment was not even a prerequisite for being allowed to take the exam, and as already mentioned we had no sanctions. All these disadvantages to some degree also would apply to students' commitment to participate in the learning forums.

Results from the evaluation of the course design for the 3rd class (January – December 2001)

70%, 26 students out of this cohort of 33 sat for and passed the examination. A very good result compared to the two previous cohorts. However, the average result (mark) was 2.63, which in comparison was a bit poorer than for both of them, a result that perhaps was understandable because there were relatively few drop outs. The average score was almost the same as the average score for the on campus full time students (2.64). While the reported numbers did not give us much information about positive or negative effects from our actions, it was, however, quite different when we looked at the number of assignment that were handed in, and also at 'student satisfaction'.

Four groups with at most 33 students handed in totally 68 assignments. This means more than two per student, and an average of 17 of 19 possible per group.

The two previous courses general 'student satisfaction' was comparatively high – except for what has already been mentioned concerning group work, commitment and participation. But the reports from the student here, particularly during the latter half of the course and in the final student evaluation, were nearly panegyric. 24 (out of 33) students filled in and returned the questionnaire after the end of the course, among them also some of that had dropped out at some time and some that did not pass the exam.

Students most of all appreciated their 'learning outcome', and commented that the course content was interesting and highly relevant to them in their job situation. Then they pointed out the devotedness and competency of the teacher, as well as the professional management and administration of the course, and the importance of having the opportunity to take the course on the Internet, part time and at home.

In spite of all this positive response, we got some complaints from students in two of the groups. They found that some of their fellow student participated too little or did not contribute to the joint group work at all, which in turn influenced on the functioning of the whole group. We still had a challenge here to solve the problems or at least make some improvements.

Changes made after the 3rd class
The course design and organisation now was changed on the following points because of a national quality reform in Norwegian tertiary education as a whole:

- The course was divided in three modules instead of one, each assessed separately
- Portfolio assessment was introduced in addition to final written examinations

Both changes were completely in accordance with what we already had decided to aim at, so we applauded this as completely supporting our own quality project. Applying portfolio assessment gave us the opportunity that we had looked for to stimulate all students to give more weight and priority to the assignments. We were, however, afraid that the marking of the group assignment/portfolio should result in a more individualistic product based on less team work than before.

Before starting up with the fourth cohort The Faculty of Art decided that the study fee should be omitted and PRISME was made free of charge. This clearly increased the number of students, but we feared that it might increase the drop out rate and also students' commitment to fellow students, team work and the learning society. We tried to introduce some adjustment that we hoped might work counter such possible tendencies. We felt that it became even more important to introduce arrangements committing students, making the hard working and conscientious students even more painstaking, and make the less serious students drop out before they have made much harm to the learning community in terms of reducing fellow students' motivation.

We kept the organisation of the groups the same as in the previous course, but our emphasis on commitment was strengthened, and we introduced sanctions for not contributing:

- The study contract - with reference to the social constructive pedagogical approach of the course - committed the individual student to a certain degree of participation and contribution, put in concrete terms as follows:
    - The student should be the responsible editor of one group assignment in two out of three modules. (Which two modules were for technicality/system reasons decided by the course management and functioned as the basic contribution to their portfolio, which was assessed.)
    - The student was committed to contribute to the team work, particularly to all the group assignments but also to group debates.
    - Wednesday evening should be reserved for interaction in the respective student groups.

- The study contract stated that if the student did not to a reasonable degree comply with the above demands and commitment he/she might be excluded from the course.

Results from the evaluation of the course design for the 4th class (August 2002 – June 2003)

Out of 96 students who actually started on the course 65 students (=68%) passed the examination in all three modules, portfolios included. We consider this a comparatively high ratio on a course with great workload and the above mentioned heavy demands on the students, especially since we expected a grow in the drop out rate because of the omission of the study fee. The average mark for all modules was 2.598, while the equivalent of the on campus full time students was 2.35. The latter group comprised however only 17 examinations/candidates compared to 183 PRISME candidates/examinations (distributed on three exams).

As the portfolios were a part of the assessment the rate of students passing the examination also indicates that at least as many as 65 students also had fulfilled their task as editor of two group assignments.

We have not yet got the student questionnaires, so we cannot relate the above information to students' evaluation there. Feedback in the electronic forums and on telephone, however, indicates a high degree of student satisfaction for very much the same reasons as the previous cohort. Like students in all former cohorts they also seem to consider the course to be one with very hard work, very interesting and relevant content and good learning outcome.

The course management to a very high degree met the requirements of participation and contribution formulated in the study contract, particularly during the first of the three modules. Around ten students were excluded from the course because they did not meet with those requirements. The number must not be seen as absolute, because in such cases there is always an element of judgement as to what makes a student quit a course and a process of negotiation preceding it. So far we think this process has been successful in spite of the great energy and time resource it has required.

The project group has got a rather clear impression that our policy and practice with strict requirements has made more students complete the course and pass the exam. We have got several statements from students approving our actions in this field to try to make the groups function better and make the role and situation of the painstaking students easier. Whether these impressions will be confirmed by student feed back from the questionnaires we cannot know before analysing them.

8. Strengths and weaknesses of the case study

One strength of the study may be its longitudinal character. It has lasted for 4 ½ years, not counting the first design and development period.

The focus may be said to have been comparatively restricted or defined. The changes from one cohort to the next have been relatively few while all other factors have not been changed, a characteristic which might indicate that the estimated quality improvement really results from the changes made.

There is, however, a basic uncertainty related to our evaluation, especially of the first and second running of the course, which is important since these evaluation results to a high degree influenced our further approach. It was difficult to know how much of the students'

dissatisfaction that had to do with group organisation and lack of contribution from fellow students, and how much was actually related to their own lack of computer competency, or to the functionality of the learning platform, or to teachers' or administrators' guidance and/or support.

Another weakness is the difficulty to judge whether the quality really has been improved or not, and if it has, how can we be sure about the reasons for this. Perhaps quality improvement to a much higher degree than we have thought have had to do with the increased potential and utilisation of the web over the years, combined with the improvement of students' general computing literacy, and the functionality of learning systems and learning management systems available.

10. Concluding remarks

In spite of all uncertainty we now feel that we after periods of trial perhaps have developed a model for collaborative learning in PRISME, which we think we have experienced as an improvement, especially when compared to what we did in the first cohort. What we have experienced and learnt so far has become interesting and important to us, and hopefully it may be interesting to some other agents in adult web-based education as well.

In any case we feel that we have learnt a lot about web based courses and students reactions, and got rather close on their learning processes even if we cannot document it all in a project report.