Pedagogical IT Forum

Final Report

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Background

Since 1994 The Higher Education Ordinance states that in teacher education the students to be graduated must have:

“knowledge about the use of computers and other information technological equipment for their own learning and for teaching children and youth/pupils.”(Author’s translation.)

The Swedish government allocated funds for enhancement of teacher educators’ competencies in ICT (Information and Communication Technology). The Swedish teacher training colleges were invited to apply for these funds to the National Agency for Renewal of Undergraduate Education. The School of Education at Lund University applied for funds and received a total of 5.3 million Swedish crowns, which was available from April 1997. The project lasted until September 1999.

The School of Education left the organization of Lund University and became Teacher Education at Malmö University on July 1, 1998. At the same time the School received a new administration.

Description of the Project

The foundation of the Pedagogical IT Forum was the following hypothesis on how teacher education will be organized in the future:

“In future teacher education the students will be more self-directed in shaping their educational profiles, regarding both choice of courses and the design and content of courses. Courses at other universities, national and international, will often be part of their educational profile. Many courses will be provided by cooperating depending on available competencies.

Teacher educators will not primarily be bound to specific courses, but rather to individual students and student groups within their own diciplines and fields of competence. The teacher educators will cooperate with other universities and their role will be that of tutor rather than traditional teacher.

The differences between on-campus education and distance education will eventually disappear. Substantial parts of teacher education will be independent in both time and space.”(Author’s translation.)

There were three main aims for the project. The first was to enhance teacher educator’s competencies in ICT. The second was to do this by enhancing the education and utilizing ICT in this effort. The third aim was that the development would bring about increased student activity and self-direction.
The project consisted of two main parts, or phases. The first was a number of subprojects, and the second was Experience Groups. It was emphasized that the activities would proceed on the basis of the needs of the participants in the project. The aim of the subprojects was to let the participating teacher educators develop their ordinary activities (mainly teaching) and thus enhance their ICT competencies. The aim of the Experience Groups was to find a model for spreading experiences gained in projects and developing them further. The model was tested as a way of continuous development of activities.

A management group was established, consisting of two people. They were working to support the subprojects and the Experience Groups. In addition, the group arranged conferences, workshops and seminars.

The project is presented in Swedish on the World Wide Web address http://utbildning.lut.mah.se/it-forum.

Influence of the Project on Teacher Education

Teacher education has been influenced by the Pedagogical IT Forum project in several ways. Looking at the technical issues, an investment of several million crown was made in new IT equipment. A new network was built which resulted in LAN and Internet connection being available in all instructional rooms and workrooms. So-called “Learning Milieus” were built, rooms were adapted to instructional methods where student activity is high and where the use of ICT is an important part of the activities. Additional investments are made annually for upgrading and complementation of the equipment and development of the activities.

Thanks to activities in Pedagogical IT Forum many courses have been changed and now make use of ICT to a greater extent. The effects are also recognizable in courses not involved in the project. The committee of the teacher educational program for compulsory school is revising all curricula with regard to the use of and aspects of ICT during 1999 (Lundgren 1999). The plan for this was developed by Pedagogical IT Forum. Other programs are carrying out corresponding revisions or are planning to do so.

The staff of the library is more involved in education. The contacts between librarians and students, and between librarians and teacher educators, have deepened. The main reason for this is the increasing importance of information literacy.

A substantial increase in using computer mediated communication (CMC) is recognized. One important reason for this is the advantages (both practical and qualitative) gained by electronic conferences during the periods when the students are located in schools outside the teacher education center. Due to the new system of partner schools, introduced by Teacher Education at Malmö University, where the contacts between the schools, teacher students and teacher educators are more intensive and deepened, the need for flexible communication forms has increased. One measure of the increase in CMC is the number of electronic conferences in use, which is more than 200 at Teacher Education. The project has supported this development of communication forms by the activities in several of the subprojects and experience groups.
Teacher education is in a phase of great changes which will be very intensive throughout the year 2000. The goal is to create new programs of teacher education based on modern views on teaching and learning, and adapted to the demands of the future school, which we can identify today. The guidelines for this work are in accordance with the hypotheses of the project Pedagogical IT Forum. The experiences and competencies gained in Pedagogical IT Forum are of great importance in this work.

**Activities Carried Out**

Within the project, the main activities were subprojects and experience groups. In addition seminars, workshops and minor conferences were arranged. In September 1999 a national conference in ICT and learning was held at Malmö University, an arrangement made in cooperation with the National Agency for Higher Education.

**Subprojects**

Ten subprojects were defined in the application. They were carried out during the first year, 97-98. Because of difficulties in launching experience groups, six additional subprojects were started, in 1998. One issue creating great interest and importance is CMC and electronically publishing information. This resulted in six new subprojects in the autumn of the same year. The 22 subprojects are briefly described below.

**The Öresund bridge as a case study**

Three courses in Science, Technology and Mathematics made use of the projecting and construction of the Öresund bridge as a source of information for studies of certain phenomena. Information search on the Internet, web production and correspondence via e-mail were the main ICT methods used in this subproject.

**Technology in compulsory school**

Technology in its present form is a new subject in school. A network was created for technology teachers. The main tools for the network were the construction of a web site and an electronic conference system.

**Environmental education, a distance course**

A course on environmental education was converted into a distance, net-based form to increase flexibility for the students. The main instructional method was problem-based learning. The course was conducted entirely on a distance basis. A structure for this type of course was made and forms for electronic communication were developed.

**Information literacy**

The staff of the library of Teacher Education accomplished this subproject by providing seminars in information literacy and support to all departments of Teacher Education. The main subjects of the subproject were searching information on the Internet and evaluation models for this information.
ICT in Education in Social Sciences
Each member of the Department of Social Sciences made their own plan for how to use ICT in education. The department organized seminars to follow up the work done by the teacher educators and give support to the teachers. They mainly worked with information literacy.

ICT in the Careers Counsellor Program
This subproject consisted of three parts. The first was to develop forms for integrated ICT education in the Careers Counsellor Program. The second was to develop an international postgraduate course in ICT for the Careers Counsellor Programme in coorporation with institutions in Finland and England. The third part was to develop a interactive multimedia tool on CD-rom for traing ICT-skills.

Learning in future
A course was developed to discuss future demands on education in school. The main focus was ICT and its role in education. Several different uses of computers were studied in the course.

The computer in the Preschool Teacher and Recreation Instructor Programme
Two instructional methods were developed. A system for electronic diaries was developed, and instructions for studying children’s use of computers during student practice at e.g. nursery schools. In addition an ICT plan was made for the curriculum of the program.

ICT in Arts, Music and Athletics
Several methods of ICT use in these subjects were analyzed, such as information search on the Internet, web page production, electronic communication, and multimedia production.

Student Forum
The Student Union planned to build a web site for the students with conference systems and possibilities for chatting. The aim was to create a forum where the students could debate school issues and their own education. Through this medium the student’s voice would be stronger and influence the development of teacher education. This subproject failed.

During spring 1998, six additional subprojects were funded in the Pedagogical IT Forum.

ICT in Physics
Specific subject-oriented programs were studied in Physics. They were analyzed and evaluated. Plans using some of them in courses were developed. The programs were applications for measuring, calculations and simulations.

ICT in Practical, Pedagogical Education in Swedish
Instructions were developed for use of electronic communication in reflection while practicing at school for a group of students in Swedish for upper secondary school teachers.
International exchange
A web site with electronic communication was developed for students from Malmö who are abroad for a period. The aim was to enhance their reflections abroad by discussions with other students and to provide “living” information to the students in Malmö to stimulate them to go abroad. This subproject is not yet concluded.

Multimedia in Swedish as a foreign language
The course Cultural Meetings deals with concepts like Swedish culture, attitudes, prejudices and multiculturality. Multimedia and video were introduced as forms of expression to be used in working with these concepts.

ICT in the course Speak, Read and Write
Specific learning applications and standard tools like word processors were studied and analyzed for their use in teaching, and the learning of young children.

ICT in Social Sciences Education
This subproject was a continuation of the former subproject.

As the interest in net-based education increased six additional subprojects were funded in autumn 1998.

Teaching for Sustainability
The structure of the web site for this course was developed to increase its value as a support for the students. The information material was developed to enhance recruitment of foreign students into this international course. A network of experts around the world was developed to support the work of the students.

Communicating with students in a conference system on Internet
This subproject analyzed the pros and cons of electronic conferencing with students practicing in schools. It resulted in some suggestions for organizing the conference to make it successful.

Contacts between teachers and teacher educators
A network of upper secondary school teachers and teacher educators in biology and natural sciences was created. A web site was constructed with electronic conferencing facilities available.

Research on and with ICT
Two Ph D courses were developed in research on ICT and learning. The courses were net-based and designed for the students to influence the content and forms of study. The subproject is extensively reported in Lemark (1999).

Net-based education, in-service training
A course was developed for in-service training in biology and chemistry. It was partly conducted as a distance course. A web site was designed and electronic conferencing was used.
DISKO, the computer in school

A course in arts and music using digital media was developed. The students work with tools for multimedia production, music production, playing together on the Internet, etc. The subproject is not yet concluded.

Experience Groups

The Academic Staff Development Unit (ASDU) at Queensland University of Technology in Brisbane, Australia developed a model for staff development, so-called TRAC groups (Teaching, Reflection and Collaboration). The participants in a group came from all over the QUT campuses and worked together on a common theme (Weeks and Scott 1992; Weeks and Scott 1993). They formulated their own goals and organized their work procedures. Peer review was a frequently used method, as was action research. The themes were diverse, depending on the participants’ interests, including concrete, practical development of instructional methods to implement pedagogical theories in education. The role of the ASDU staff was to facilitate the work of the TRAC groups, provide expertise and support the groups by tutoring, depending on the needs of the participants. The organization of the TRAC groups is described in detail in Weeks and Scott (1992) and Weeks and Scott (1993). The TRAC group was used as a model for the Experience Group of the Pedagogical IT Forum.

Two experience groups were launched during the first year and five more during the second year, of which one group ceased their activity at an early stage. For reasons which will be discussed in the evaluation section, the groups were allowed to work very freely. The plan described in the proposal was not followed. Thus the groups differed greatly in character.

In the spring of 1998 two experience groups started: “How to teach information literacy” and “Health and ICT”. The library at Teacher Education was responsible for the first one. Together with librarians from three other university libraries and one upper secondary school, they exchanged experiences on the topic of teaching information literacy.

The participants in “Health and ICT” were three teacher educators, one in sciences, one in athletics and one in music, and, in a compulsory school, one teacher in music and one teacher in arts participated. The goal of the group was to develop education in life-style, i.e. adolescence, and social issues, including e.g. attitudes to drugs. They wanted to make use of ICT and find a “language” which appeals to youth. They worked with a group of 15-year-old pupils. The result was a video about drugs, for which the pupils wrote and filmed the manuscript, and edited the results on a computer. The video was given attention by a famous Swedish TV-program, “Sajber” (=cyber), and the police asked for permission to use it in their information campaign about drugs.
In the autumn of 1998 the following experience groups were launched.

- How to communicate with students via Internet
- Production of web pages
- Net-based education
- The school yard as a resource

The last one, which consisted of a network of a teacher educator and schoolteachers, closed at an early stage. They planned to develop effective ways of communication within the network.

From the titles of these latter groups it is evident that CMC and information distribution are important issues. All of the groups dealt with at least one of them. The first of them discussed and analyzed the use of electronic conferences and how to stimulate engagement in the discussion.

The second group analyzed how to make effective structures in web sites. They also discussed the layout and its effect on the user.

The group working with net-based education dealt with questions, which are specific to distance- and net-based education, for example “How can you get a student to assume social responsibility in a group where the members never meet face to face?” During their meetings the group made use of expertise on interactive design from the School of Arts and Communication at Malmö University.

**Workshops, Seminars etc.**

The management of the project arranged a number of activities. In August 1997, a two-day conference was held for the participants in the project. The aim of this conference was to plan and initiate the work of the first ten subprojects. The manager of “IT for Quality”, a project for the schools in the municipality of Lund, Bosse Müller, was engaged to share his experience of development of ICT competencies in education with the participants.

In cooperation with the PhD program at Teacher Education, three seminars on ICT and learning were arranged. They were held by Prof. Berner Lindström, Gothenburg University, Dr Eva Ekendahl, Gothenburg University, and Assoc. Prof. Sisse Siggaard Jensen, Roskilde University Center.

A one-day conference was held in August 1998 for all the teacher educators, where the projects in the first year of Pedagogical IT Forum were presented and discussed.

During 1998 a number of lunch meetings of 20-30 minutes, were conducted. At these meetings different techniques of computer use, e.g. basic image editing and conversion to appropriate formats for web publishing, how to use a digital camera, how to use a scanner.
During 1998-99 four workshops were conducted. The aim was to start discussions on ICT and learning with starting points in concrete examples in school and to enhance a dialog between schoolteachers and teacher educators. Experienced teachers in schools and experts were engaged to present their own work on ICT in learning, followed by practicing by the participants in combination with pedagogical discussions. The participants were teacher educators and teachers from municipal schools in about equal numbers. The workshops dealt with sciences, social sciences, web resources, and interactive design.

National Conference
Together with the Agency for Higher Education, the Pedagogical IT Forum project arranged a conference “IKT 2000” on ICT and learning, 22-23 Sept. 1999. The aim was to support a discussion on the ICT issues in teacher education and on research in ICT and learning. The vast majority of the participants, about 120 people, were teacher educators from most teacher training colleges in Sweden. The program consisted of keynotes and workshops. The keynote speakers were Prof. David Jonassen, Penn State Univ., USA, Prof. Pelle Ehn, Malmö University, Prof. Gunilla Svingby, Malmö University, and Assoc. Prof. Sisse Siggaard Jensen, Roskilde Univ. Center, Denmark.

Most of the work presented at the conference dealt with text-based applications in the use of computers. A reflection made by many participants was that intensified efforts must be made in the use of other media. This is valid both for competence development, and for research and development of educational programs and courses.

National Network
In connection with the conference “IKT 2000”, the Pedagogical IT Forum arranged the first meeting of a national network for ICT issues in teacher education. The initiative was taken together with LITU, Umeå University. 23 people from teacher education institutes all over Sweden participated. There was complete agreement that there is a great need for closer contact between the institutes on these issues and for facilitating for cooperation in education and research. A new meeting was planned and held in December in Umeå, to which all teacher education institutes were invited.

Evaluation

Questionnaire

About 60 teacher educators participated in the project. They filled in a questionnaire after their project work for evaluation of the project. The questionnaire consisted of 18 statements, divided into four categories. The first one was about the teachers’ ICT competencies before and after the project work. The second was about ICT use in the courses, and the students’ influence on education. The third category consisted of statements about the extent of using external help and following the work of others. The last category was about the extent to which the participants had received support. In addition, they had to describe their view on further investments in ICT,
what they would like to do if they could do the job once again and, finally, describe what they have been working with in the project. The results of some of the statements are not explicitly reported, but that is not necessary for the conclusions to be drawn.

**ICT competencies**

The ICT competencies of the participants had increased substantially during the project work, according to the participants (Figure 1). The mean value has increased from −1.0 to 0.6 on the scale −3 to 3 in agreement with the statements. A vast majority agreed with the statement “Your ICT competence has increased due to the project”, with a mean value of 2.0. Since about 25% of the teacher educators at Teacher Education participated in the project, this means that a clear influence of the use of ICT in teacher education would be expected. This is to some extent compromised by the uneven distribution of participants from various departments at Teacher Education.

![Figure 1. The figure shows to what extent the participants regard their own ICT competence as high before and after the project. −3 = do not agree at all with the statement; 3 = agree completely.](image)

**ICT in courses and student influence**

The amount of autonomy for the students seemed to differ a lot according to Figure 2, which shows a wide distribution in agreement with the statement “The use of ICT in your courses (or other activities) has resulted in increased autonomy for the students.” However, a majority think this is an issue of great importance. A few participants think it is unimportant. Why do not all participants think it is of great importance? It is difficult to interpret the answers, but one reason may be that increased student autonomy could be achieved by other means than using ICT. The
distribution in agreement with the statement indicates that the use of ICT does not necessarily result in increased student autonomy. This is consistent with the results of McCabe (1998) who found that in courses using Computer Mediated Communication (CMC), the educational outcome is dependent on the teacher’s engagement and pedagogical viewpoint and not on the technology itself.

**External resources**

In this section the statements dealt with information exchange. Did the participants make use of experiences from other subprojects and other work outside the project? Did they follow the discussion about ICT in teaching and learning? Figure 3 shows that only a minority of the participants made use of other subprojects’ experiences, while the majority thinks it is important to do so. One explanation could be a difference in aims and efforts between one’s own and the other subprojects. This is probably not the case, since many of the projects focused on the same type of computer use, i.e. net-based functions. A more likely explanation would be that although the participants received funds (i.e. time) for working in the subprojects, they felt overwhelmed by duties, which results in little time for research into other work in their own field. A third explanation, which to some extent could be the case, is that participants did not fully realize the importance of making a survey of the research and developmental work available. There may be an indication of this in the fact that a few participants did not think it important to make use of other people’s experiences.

A large number of the participants actively follow the pedagogical discussion of ICT use in school and teacher education according to the statement above. The distribution of answers about importance is about the same.
A number of statements dealt with support issues. The amount of agreement with the statement of good technical equipment was widely spread from complete disagreement to complete agreement, with an average of 0.5 on the scale from –3 to 3. A somewhat more positive opinion was expected as a result of the great investments made. One explanation may be that some of the equipment was not delivered until the subprojects had been working for several months. New investments have been made, which would probably have resulted in more positive opinions about the current situation.

A rather weak agreement was found in the statements about receiving help from technicians and project management. The mean value was 0.0 in both cases on a scale from –3 to 3. The web site of the project was utilized to an even lesser extent. One possible explanation could be the same as in the case of external resources, i.e. participants were unaccustomed to utilizing external experiences and results.

The project management received fairly good evaluations in this questionnaire concerning support to the participants, an average of 1.3. The administration of Teacher Education, on the other hand only received 0.0 as a mean value. A likely explanation is that the administration was not directly involved in the project work and was hence regarded as more “distant”. Support for this is that the administrations of the Departments lying in between also received a value in between: a mean value of 0.2 on a scale from –3 to 3.

Figure 3. Shows to what extent the teacher educators agree with the statement “You found experiences gained in other subprojects useful.” –3 = do not agree at all, and completely unimportant; 3 = agree completely, and very important.

Support
Categories of projects carried out

In the inquiry the participants were asked to describe their work in the project. Four categories of computer use could be recognized:

- Production of Web pages
- Information literacy
- Computer Mediated Communication (CMC)
- Miscellaneous

The vast majority of activities made use of the computer as a tool for remote access, in e.g. information search, information distribution, and electronic communication. The aims of these activities varied considerably. The goals for production of Web pages could be to learn Web page production, or acquire the most convenient way of information distribution, in some cases more or less the only way of information distribution. Sometimes the development of Web page production was combined with the use of CMC.

The category of information literacy includes purposes like information search and work on information evaluation and ethical discussions about Internet materials.

The CMC activities included asynchronous and synchronous conferencing. The contexts for conferencing varied greatly, from communication within groups on campus to distance education where the participants never meet.

Very few descriptions fell into the Miscellaneous category. One example of this is the subproject “ICT in Physics” which investigated specific applications for the subject of physics. A number of applications for such things as measurements and facilitations of experimental work and simulations were analyzed and evaluated.

In the project “IT for Quality” a model for categorizing types of computer use was developed (Nilsson and Müller 1997) for qualitative evaluation of ICT projects in school. They used four categories (my translation):

- A. The computer is primarily used to learn how to use the computer.
- B. The computer is used for pedagogical purposes that can be realized without using the computer.
- C. The computer is used for pedagogical purposes that cannot be realized without the computer.
- D. The use of the computer in teaching and learning has resulted in new ways of working and thinking.

They concluded that the vast majority belonged to categories A and B. Only 5-10% belonged to C and D. There is, of course, a need for education in basic skills for handling computers, but it is doubtful whether A and B together can motivate the huge investments made in computer equipment in school. The goal must primarily be to reach level C. The greatest gain is made when reaching level D.
Applying these categories to the material of the Pedagogical IT Forum gave the following picture:

Production of Web pages A, B, (C, D)
Information literacy A, B, (C)
Computer Mediated Communication (A, B), C, D
Miscellaneous B, (C)

Letters within parantheses mean to a lesser extent. The majority of Web page production was in categories A and B, for example, the aim was to learn how to produce Web pages or present reports on Web pages, which could be done in other ways as well. The activities that fell in categories C and D were e.g. distance or net-based education, where Web distribution of information was the most convenient way. These activities led to discussions on how to organize education, especially distance and net-based education. This motivated placing the activities in category D.

The category of information literacy consisted mainly of activities on learning Internet searching (A), and information search on Internet among others (B). In the subproject Information Literacy, deeper discussions about information evaluation models and ethical issues were performed, motivating category C.

In the category of Computer Mediated Communication, most work included activities impossible to accomplish without computers. Hence they were placed in C. Most of the subprojects dealing with CMC included distance and net-based education. The organizational issues were obvious here, and they were hence placed in category D.

In the Miscellaneous category the subproject ICT in Physics is used as an example. Some measuring activities could be done by other means, which leads to category B. But some applications made possible measurements and observations, which could not be accomplished without the computer. These activities, as well as the use of most applications for simulation, were placed in category C.

In summary it could be concluded that as in the project “IT for Quality” the activities in the Pedagogical IT Forum mainly fell into categories A and B. However, a greater number of the activities belonged to categories C and D. This was due to the dominance of net-based activities, which in most cases could not easily be performed in any other way.

**Future investments**

The average participant thinks that future investments in ICT are important, but at the same time warn against forgetting other important issues. It is not possible to regard this group of teacher educators as representative of all teacher educators, since they are the people who chose to participate in the project. They are expected to be more positive to investments in ICT, both in hardware and competence development, than the whole group of teacher educators.
Experience Groups

As mentioned above, the so-called Experience Seminars (in the proposal) were changed to Experience Groups due to the difficulties of engaging the teacher educators in this work. Although a few groups did work, the spreading of competence was weak. It seems that lack of time was the main reason for this failure. It was also expected that the teacher educators, especially those participating in the subprojects, would propose subjects or themes for experience groups. This was indeed the case in most of the groups. This seems not to be consistent with the general expectations of the teacher educators. Some of them seemed to expect the management to decide on the themes to work with. If the project management had more actively proposed themes, initiated and carried out group work some more groups would have been working. This is consistent with the findings of Lindberg and Johnsson (2000).

External evaluation

The project was evaluated by Göran Lindberg and Örjan Johnsson at the Dept. of Sociology, Lund University (Lindberg and Johnsson, 2000). The evaluation is briefly summarized here. Lindberg and Johnsson interviewed 21 project participants. These people were chosen to gain as broad a representation of the project as possible.

The subprojects were divided into two categories, those with external goals and those with internal goals. The group with external goals included the subprojects whose goals were directed towards other people, e.g. students. Their aims could be to develop new courses and instructional material which made use of ICT. The activities in the subprojects with internal goals focused on the participants’ own learning in use of ICT. Lindberg and Johnsson (2000) found that the engagement and motivation of the participants in the subprojects with external goals were greater than in the ones with internal goals. This seems to be an important factor for the success of the subprojects. Another factor for success was whether the participants were working in groups or alone. Those people working in a group were more satisfied with the project than those who were working alone. The participants emphasized that funding for time was necessary to accomplish the subprojects.

The experience groups did not reach the goal of spreading competence from the participants in the subprojects to the rest of the teacher educators. It seems that the lack of time was an important reason for the small number of groups and few participants. It was even more difficult to create groups across disciplinary borders. It is easier to cooperate with well-known colleagues within one’s own discipline. To obtain the goals with the experience groups, the participants must have time for this work included in their schedules and more active management in initiating and accomplishing the experience group work.
Conclusions

The Main Aims

Did the project fulfill its three main aims - enhanced ICT competencies of teacher educators, development of teacher education, and enhanced autonomy or self-direction of student learning?

About 60 teacher educators participated in the project. All of them with very few exceptions have enhanced their ICT competencies. They constituted of about 25% of all teacher educators, which is a substantial part. Recently, there has also been a development in ICT competencies of teacher educators not participating in Pedagogical IT Forum. A few have accomplished externally funded projects, but the majority has developed competencies in ordinary services. The exact influence of the project is difficult to assess, but to some extent the activities in Pedagogical IT Forum have made this development possible.

The second aim, development of teacher education, has partly been achieved. The courses involved have ICT activities integrated in the instructional design. The experiences of these activities have to some extent been used in courses not participating in the project, but far from all of them. The most obvious development is found in the net-based courses. As mentioned earlier, the project management has developed a program for integration of ICT issues into the curricula of educational programs for teachers.

The third aim was that the development of education should result in increased student activities and self-direction. In the net-based courses this has been achieved, but in most of the courses and activities it has not happened to any appreciable extent. The use of ICT does not result in a change in instructional point of view to a more student-centered perspective. This is consistent with the findings of McCabe (1998). To achieve a change to student-centered and student self-directed education, changes on an organizational level are required (Morrison and Goldberg, 1996), and, on a general, it is necessary to level establish a framework for instructional design which supports and provides guidelines for the teachers’ developmental work. ICT is not a prerequisite for this, but, if properly used, it can facilitate and augment the outcome of the new educational programs that will grow out of the framework.

Models for Competence Development

One goal to strive for in the project was to reach all teacher educators in order to raise their ICT competencies. The way to reach this goal was through the experience groups. However, this turned out to be difficult. The expectation was that a substantially greater number of groups would be initiated, and the participants would propose the themes of the groups. The main reason for this difficulty was probably that the teacher educators have received more work to do in service, which results in
a low ability to engage in competence development. There were no funds to make
time in service available for this type of work. Many teacher educators expressed
their interest in the ICT issues, but they had no time to work with them. This is
consistent with the TRAC groups at QUT, too. At a visit to ASDU, QUT, the
frequency of participation in the TRAC groups turned out to be 5-10 % of the
teachers during a five-year period (D. Scott, pers comm). In Pedagogical IT Forum
about 10 % of the teacher educators participated in the experience groups during a
two-year period.

The project management’s expectation of theme proposals from the participants did
not seem to be consistent with the teacher educators’ expectations. A more active
initiative in proposing themes by the project management could possibly have
resulted in some more groups.

The difficulty for the teacher educators to participate in the experience groups was
the reason for providing funds for additional subprojects. Instead of the initially
planned 10 subprojects, 22 were accomplished. In the subprojects the participants got
time in service for the project work. This clearly shows that if an organization wants
to achieve a general competence development, a necessary condition is to give the
employees time to work with the the issues of this development. In the new
organization of Malmö University, the teachers can use part of their time in service
for competence development or research work. This may make it possible to use the
model of the experience groups in further work on enhancement in ICT
competencies.

According to the outcomes of the subprojects and the experience groups, it can be
concluded that two conditions are important for the success of competence
developmental work. The first one is that working in a group often gives better results
than working alone. The second condition is that external goals connected to the
regular work are good prerequisite for engagement and hence promise a greater
chance for success than internal goals (Lindberg and Johnsson 2000).

The Hypothesis

During the two years the project has been running, there have been very few changes
in the situation of education. The teacher education programs follow the curricula
today much as they did at the start of the project. However, the Committee of
Teacher Education set up by the Swedish Parliament suggests a change to greater
flexibility and possibilities for the students to form their educational profile by
themselves (Lärarutbildningskommittén 1999). This is consistent with the
development proposed in the hypothesis.

A tendency to greater oppportunities for interuniversity studies could be discerned.
Consortia of universities are created with the objective of cooperating in providing
courses. In teacher education, specifically, the recently established network on ICT
issues may lead to cooperation between different teacher colleges in course
development.
The last statement in the hypothesis regarding the diminishing distinction between on-campus and distance education seems to be coming true. The main reason for this is the new opportunities provided by new technologies. However, a lot of research work has to be done, since we know very little about the effects of computer support in education (Pedersen 1998)

References


