

# Communication - learning - information technology applied examples

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## **Abstract**

The projects named "The Children of the Future I and II" are research and development projects concerning children and information technology. The first project began in the autumn of 1990 in the University College of Falun/Borlänge. Tommy Isaksson, now at Umeå University, is the project leader and Björn Flising, at the University of Gothenburg is responsible for the evaluation. The first project included members from thirteen municipalities throughout Sweden and today twenty schools, pre-schools and after-school care centres participate. Since 1993 our department has been closely connected with the project through one class and one after-school care centre, both part of a lower primary school near Umeå in northern Sweden. Apart from Lisbeth Appelberg and Göran Nilsson, students in some undergraduate programmes at our department are also involved in the project when on practice for a period of weeks in the school. Based on the experiences of the project we have created a distance-learning course concerning information technology and learning in which the participants are, among others, teachers, pre-school teachers and recreation leaders involved in the project.

## **Keywords**

Communications, database, distance learning, information technology, software, technical innovation

## 1 "THE CHILDREN OF THE FUTURE"

### **1.1 Background**

"The Children of the Future" is a research and development project concerning children and information technology. The project began in the autumn of 1990 and is an expansion of earlier projects which started in 1985 at Falun/Borlänge College (Isaksson, 1991). This work culminated in the starting of the project "The Children of

the Future I” which lasted from the autumn of 1990 until the summer of 1993 (Flising, 1995). The cost for participating is ISEC 20,000 per year. In addition to this, there is the cost for the staff participating in seminars twice a year and for the children and the staff to join the annual festivals. “The Children of the Future II” includes children aged 6 to 12 years and educators from 20 municipalities in Sweden. Both children and educators have access to advanced communication equipment such as computers, printers, modems and computer programs. Some examples of the software used are graphics and communication programs, word processors with and without spellcheckers, databases, desktop publishing programs of various types, electronic mail programs, communication programs, programs for scanning in pictures and graphics, etc.

## **1.2 The goal of “The Children of the Future” and the children’s tasks**

The goal of “The Children of the Future” is to increase the children’s social competence so that they will be able to develop the knowledge and skills necessary for them to grow up successfully into today’s and tomorrow’s information technology society. This includes the use of information technology both in a constructive manner and as an aid to understanding today’s society. It is the understanding and not the technology that is paramount. In the policy documents for both schools and after-school care centres, the importance of equal opportunity for all children is stressed. For the project this means that equal opportunities issues concerning girls and children from lower socio-economic groups are greatly emphasised.

The goal for the teachers, the recreation leaders and pre-school teachers and other people who participate in the project is to increase their knowledge and competence in today’s technological society, and in how they can work with new technologies in order to provide children with the prerequisites for growing up today. In addition it is important to develop knowledge of modern childhood and to allow educators to develop their own methods for planning, carrying out and evaluating their work.

The children design electronic newspapers, history books, communicate with other children through a database network, develop databases, qualify for “computer driving licenses” and write relay stories, to name but a few of the activities. They have also held exhibitions and led computer courses for their parents. Once a year the children from the different groups meet at a “Children of the Future” festival.

## **1.3 Documentation and evaluation**

All the work is documented and evaluated. Every group in the project keeps diaries and logbooks as well as turning in written and oral evaluation reports. Regular planning and evaluation seminars are held and the children are interviewed and answer written questionnaires. A preliminary report (Flising, 1995), with an overview for the years 1994-1995, shows that in autumn 1994 there were 47 educators participating in the project, 36 women, 11 men and 477 children (237 girls and 240 boys). Most of the children were in grades one and four (as the intention was to follow them during the whole project period). There were between 20 and 26 children in 13 of the participating groups. In 4 groups there were 16 to 20 children and in one group only 12. The number of children in two combined classes with children aged 10 to 12

years were 39 and 51. There will be a final report on the project in 1997. One of the most important things in this preliminary report is that the girls seem to participate in the work with IT to the same extent as the boys, in some groups even more. Only when it comes to using the computers for games is there a higher representation of boys.

## 2 “THE CHILDREN OF THE FUTURE” AT LINBLOMMAN

### 2.1 Staff and children at Linblomman attend “The Children of the Future”

Since the autumn of 1993 our department has been involved in the project in co-operation with the staff and children in one section at Linblomman, a lower primary school near Umeå.

Linblomman has mixed age classes. Children of different ages work together in the primary grades 1 to 3 and in the upper primary grades 4 to 6. Sometimes the two age groups even work together. The children sit together in mixed age groups which allows them to share experiences, and they strengthen their sense of self-value by changing roles within the group. For example, a pupil in the second grade who had a difficult time in the first grade can help a new pupil in the first grade and thereby gain a sense of accomplishment.

In November 1993 an agreement was made between the Department of Child and Youth Education, Special Education and Guidance, Umeå University and a section at Linblomman concerning the project “The Children of the Future”. In our department we had started to develop knowledge about how to use IT as a tool in working with children and we felt we needed to co-operate with a school in one section of Linblomman over a period of four years to support their participation in the project. This support covers the annual fees and the journeys and hotel costs for four members of the staff at Linblomman allowing them to join the two seminars each year. As they did not have the necessary IT equipment, we have stationed a computer with a modem, a scanner and a camera at the school. We meet with the staff once a month and between times, we communicate with the aid of computers. I have followed the work at Linblomman some days each semester and documented the work with a video camera (Appelberg, 1994; 1995).

Autumn 1993. The guidelines for the work with “The Children of the Future II” were drawn up at a conference in Falun in November 1993. Four of the staff from Linblomman participated in the meeting. Three themes were formulated for the coming work.

A. The Children’s Network - The following activities should be covered during Spring 1994: the children should be introduced to the computer; all children should take a computer licence; the children should write articles about their neighbourhood and the articles should be sent to those involved in the project in other schools and after-school centres by electronic mail; the children should make a newspaper from a selection of some of the incoming articles from all over the country; the children should be introduced to the writing and sending of electronic mail to pen friends.

B. The Network for Education - The staff of the schools and after-school centres should build up an educational network through which they could share experiences and help each other with questions which have arisen. The staff members should learn: about different software, for example Claris Works; how to download/send letters; how to download/send files; how to send pictures.

C. Contact with other countries - The members of the project should establish international contacts to make it possible for the children to communicate by electronic mail with children in other countries.

## **2.2 Progress with IT at Linblomman**

Spring 1994. January: The children were introduced to the computer. The order in which the children were introduced was decided by lot. The children were trained in the following steps: turn on the computer, open the disk drive, start Claris Works, write some text, save the text, close the programme, open the programme again, open the file you saved, write more text, save, close the programme again, close the disk drive and choose "Special" on the menu, and close. This work took about 30 minutes for each child. There were some differences depending on whether the children had any earlier experience. Some parents have had doubts about their children working with computers because of the risk of radiation, but the staff mostly received positive feedback on their work with the children and computers.

February: To obtain their licences the children had to prove that they could successfully cope with the computer and perform the thirteen steps. The children also had to promise three things: they would take good care of the equipment; they would help each other while working on the computer, and they would not touch each other's document on the computer. To achieve this, it took around 30 minutes per child. By the end of February all twenty-three children had obtained their licences. Photos of the children were taken with a camera connected to the computer. Many children started to use the graphics programme, as they could print out the pictures in colour.

Spring 1995. During the spring every child in the group wrote a page about themselves on the computer, a task that took quite a long time. All the pages were sent to the other groups and at the same time the children got information about the other children in the project. All the children in grade three had the responsibility to read all the incoming messages every Monday afternoon. The children communicated quite a lot with two other groups by "chatting". They appreciated getting answers immediately. In the after-school time, the children composed lots of pictures with the help of the computer.

Autumn 1995. The work continued as in earlier semesters. The newcomers had to take their driving licences and this work has been running smoothly as many of the children in grades two and three know how to handle the computer. During this period the children have been "chatting" a lot. One can follow their chatting on the computer, but also the printed documents where one can see the patterns of discussion on various matters.

Spring 1996. A report from Linblomman in February 1996 follows: The work with the children continues. Just now a lot of effort is being put into finding sponsorship for the journey to "The Children of the Future" Festival 21-23 May in Höllviken (in the southern part of Sweden, about 1,300 km from Umeå). There are many things which are not yet settled. We have now divided the class into four groups with one responsible leader in each group. These groups have established contact with some other groups in the country who are also going to the festival in May. We now work 40 minutes per week with our groups leading them forward, increasing their knowledge about computers. In addition the children work on the computers approximately one hour per day doing different school subjects. At the moment we have two computers with printers and some special equipment in the classroom for children with special needs. We have one "Children of the Future-Mac", a colour printer and a scanner in a small room. In a big room outside the classroom there are two more computers. We also have one laptop. The children have started to work with pictures and the scanner in research projects. The children are using the software Kid Pix quite a lot, making mathematical fairy-tales and when they are designing pictures in their after-school time. Every Thursday the children from the pre-school visit the class/after-school centre and the children from the second grade work with the Kid Pix programme and function as "tutors" for the pre-school children. The children in grade four now have their own computer identity and are able to communicate with some special friends in Sweden. We are also planning for the children in grade six to make a homepage for our school.

### 3 DISTANCE LEARNING COURSE

Our Department runs distance learning courses in 'Computers and Learning'. Many of the teachers, pre-school teachers and recreation leaders involved in the project "The Children of the Future" participate in these courses which extend over a period of two years. The course is given at a slower pace. The course carries 20 credits, which corresponds to twenty weeks of work, but is spread over a period of two years. The aim for the students is to increase their knowledge of and competence in today's information technology society. They need to know how they can work with new technologies in order to provide children with the prerequisite skills for successful living in today's society.

We have not yet been able to make a final evaluation of our first course but it has been possible for me as a teacher to follow my students very carefully. I have come to know them well, better in fact than if I had met them in large groups in classes. At the beginning of every course we take pictures of the students and the teachers, and install these pictures in the computer system, which helps us to remember individuals. Even though the students can get on-line support, there have been quite a lot of difficulties and problems arising from the technology.

### 4 SUMMARY

Although the "Children of the Future" and the co-operation work with Linblomman has not been completed and evaluated, we have seen that members, both staff and

children, have learned a great deal about IT and how to use it in different ways. The videos I have taken at Linblomman also show that in meeting the stated goals, the staff communicate to support: equality of opportunity, listening, shared feelings of solidarity within groups, children with special needs, creative activity, planning, children-parents-staff contact, and the development of links with other children in Sweden and with children in other countries. We also know that most of the students are satisfied with the distance learning courses.

## 5 REFERENCES

### Working reports

- Isaksson, T. (1991) *KBI-projektet Ny informationsteknologi på fritidshem, Lägesrapport 1986-1988, arbetsrapport 2, Rapport 1991:2*. Högskolan i Falun/Borlänge.
- Flising, B. (1995) *Framtidsbarn II, preliminär rapport 1995*. Pedagogiska institutionen, Göteborgs universitet.

### Posters and presentations

- Appelberg, L. (1994) Poster and video presentation of The Children of the Future/Enfants du Futur, IEDPE (Institut Européen pour développement des potentialités de tous les enfants) Conference in Paris, 7-9 November.
- Appelberg, L. (1995) Poster and presentation of The children of the Future at the IFIP Conference, Computers in Education VI WCCE '95, Birmingham, 23-28 June.

## 6 BIOGRAPHY

**Lisbeth Appelberg** holds a BA degree, and was a pre-school teacher for twenty-five years. From 1977 she has been a senior lecturer at Umeå University, from 1992 in the Department of Child and Youth Education, Special Education and Counselling.