A FUTURE LEARNING SPACE: THE CLASSROOM?

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The nature of learning in Swedish schools is today questioned for many reasons. One reason is connected with the use of computers and the idea that children's learning rather takes place out of the classroom than inside. Children use the ICT tools frequently when playing, communicating and they acquire new competencies which may not be supported or guided by their teachers. For many years now computers have been a part of the tools in Swedish schools, but teachers in the school system are still struggling to make good pedagogical use of ICT. They often lack proper competence and the physical spaces are rarely adequately designed to stimulate learning. To introduce adequate ways of teaching and learning with ICT tools is a challenge for teacher education. At Stockholm Institute of Education we have designed a Classroom of the Future, a physical and virtual learning and teaching environment.

The Learning Resource Centre and its mission

At Stockholm Institute of Education (2008 merged with Stockholm University) a Learning Resource Centre (LRC) was established in 2002 as means to introduce and support the use of ICT in education and research. The goal was to provide tools and spaces for learning and teaching and thus develop the competences of future teachers. Several factors influenced this decision. An ongoing discussion in Sweden of life-long learning and the possibility to reach groups with need of distance learning pointed to a requirement of digital literacies. The LRC comprises of the library, a media production department and ICT pedagogic staff. The mission of the Learning Resource Centre is firstly to use new pedagogical models, ICT, new media and new library models to generate creative environments for information handling, teaching, and learning. Secondly, it will have an initiating, coordinating, and developing role concerning ICT and its use in education and research. Thirdly, it will provide, develop, and synchronize flexible learning environments.

To achieve these goals we choose to support students and teachers in their actual work situations by offering physical and virtual learning and teaching environments with appropriate technology and support to a majority of students and teachers. First, we tried to identify the basic skills and abilities necessary to be a proficient user of ICT. Different competence programs have been introduced with the aim to help develop digital literacies and strengthen pedagogical and knowledge-based working patterns by pointing to best praxis (Olsson, 2006).

Learning spaces

The start of the LRC coincided with moving into new buildings in a campus which was restored and rebuilt. The new buildings could be adjusted to new flexible study- and working patterns. An environment was established which would stimulate communication, group work and socially adjustable learning patterns. Dedicated places for learning and teaching were created such as the library where individual and group places with workstations are placed among the collections in the library. As an antipode to the lively noisy working spaces, there is a large reading room for individual and quiet work and contemplation. Library and information service-points greet you as you enter the LRC. Another environment heavily used by students is a Media Laboratory with programs and special support for image/video and film production. The Media laboratory has been enhanced by a software laboratory for digital teaching aids, which will give students and teaching staff access to programs/products developed for use in school-work. In 2007 a digital studio was set up for teachers who wish to practice and develop their skills in using programs for music and esthetical subjects. One of the objectives is also to inspire students and teachers how design for and work with esthetical subjects in a class-room. And finally, a special physical training environment was set up for dynamic and flexible school-work called "the Classroom of the Future". All environments are supported technically as well as pedagogically.

The key ideas when creating these learning spaces are an understanding of learning as: situated; a social practice; of the learner as actively involved in using tools/ICT; and of the learner as a part of collective. The environment which developed into the Classroom of the Future emanated originally from an ambition at the LRC to start working with business partners to stimulate technological and other kind of development. Some experience was gained from learning platform projects. Mega industries such as Microsoft and Intel were creating learning platforms and projects partnering with universities and schools. Then Microsoft Sweden created a classroom concept together with Hewlett Packard who provided tablet PC´s, Kinnarp office furniture and Luxo light and lamps. This business group showed a genuine interest in setting up a flexible classroom space together with the LRC with the aim to attract schools, teacher trainers and students to work, teach and study in new ways. A very long and tedious process of negotiations started. There were major difficulties to agree on the idea within the teacher education community and execute decisions on several levels and the process dragged out. Furthermore there were inconsistencies in what the businesses could provide or not.

Finally and most importantly the physical and pedagogical environment concept which Microsoft originally had launched could not be accommodated by the teacher education institution. As by that point negotiations broke down a failure seamed inevitable, but since so much effort was put into this cooperative idea the remaining partners stayed on and delivered and the teacher education university set up activities which now more easily could be coherent with the general strategies service policies and pedagogical of the LRC. The lesson learned was above all how to find ways of balancing the key ideas of the organization, the LRC, with sometimes very definite market concepts.

The outcome provided an ideal starting point for pedagogical work. Today the classroom is developed and together with our other locations it constitutes a flexible meeting point for schools, higher education and companies as well as teacher educators, teachers in the field, students and researchers. This meeting point enables the use of the most modern information and communication technology. The Future classroom is a meeting place for all those using ICT in their professional role. It is a creative meeting place in continuous development where focus is on learning rather than teaching.

Perspectives on learning spaces

When creating these learning spaces our understanding of learning is that it is situated. This means that learning is a function of the activity, context and culture in which it occurs, which contrasts with how most classroom learning activities are organized. There you often try to communicate knowledge which is abstract and out of context. Knowledge thus needs to be presented in a context as authentic and creative as possible. (Lave & Wenger, 1990) We further regard learning as a social practice; we view the learner as actively involved in using tools/ICT; the learner as a part of collective. “The socio cultural perspective assumes that the individuals actively construct their own knowledge and that human ideas are created in an everlasting ongoing interplay between individuals and the social context.” (Säljö, 2000) Lev Vygotsky wrote about “the language of things” and children: “things” dictate for a child what it must do: a door has to be opened and closed, stairs to be climbed up or down, a clock to be ringed in”. The rooms and the things do not only talk to us, they also talk about us. The scenography of a pedagogical room can be read like a text that reveals our view of how learning and development is to take place; Different perspectives of knowledge and learning are linked to how we arrange the pedagogical environment. (Elisabeth Nordin Hultman, 2006)

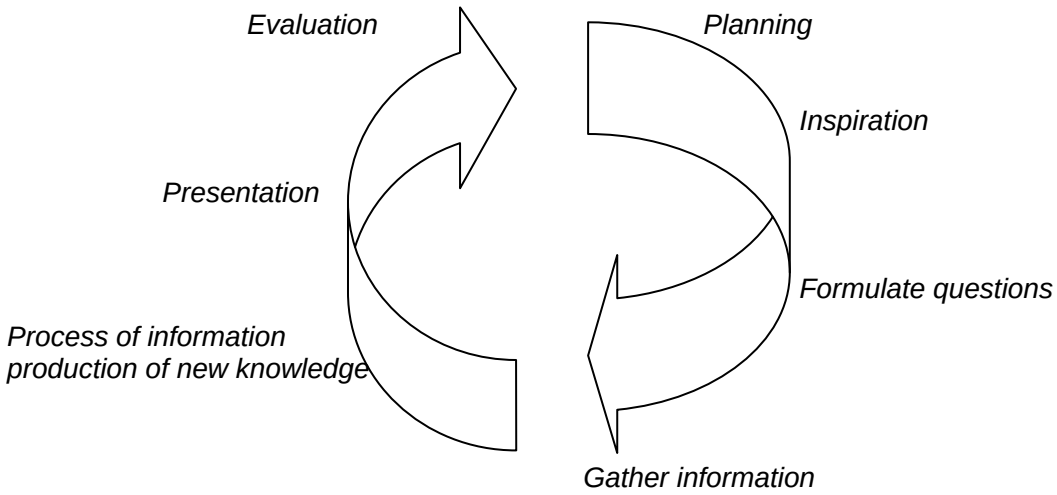
What does the future classroom tell us? How are the visitors supposed to interpret this space? The future classroom has several different target groups with different needs; schools, higher education and companies, teacher educators, students and researchers. In designing this space we concentrated on the flexibility of the room, so that the furniture can easily be rearranged to match the different activities and needs. All the equipment is kept in cupboards and the first impression of the room is rather neutral but different from traditional classrooms.

The Classroom of the Future as a resource in teacher education

This flexible working environment makes it possible to meet different needs. The furnishing of the room and how the activities are organized in time and place reflects the view of knowledge of the teachers who use it. In a flexible classroom it is easy to gather students together or let them work in smaller or larger groups or to find a calm place for themselves. All material and all the tools are easily accessible whenever needed.

One way to see a learning process is to design the activities in the Future Classroom on the basis of seven phases described by Eliasson and Lindö. These different phases can be illustrated like a spiral where the result of one act can lead to a new experience which can arouse a new question, feeling or thought. Process can be illustrated as a circle even if the process in reality does not go from the first phase to the last like a line. (Eliasson & Lindö, 1999)

Example of a learning process



The Classroom of the Future makes it possible to work with all these phases in different parts of the room. Working, for instance, with information literacy, to search information and to use it in a constructional way, is possible anywhere in the room because of the wireless network. The classroom of the future offers a possibility for teachers and students to make their own experiences of the effects of ICT in learning processes and they can do their own experiments or researches in various educational working methods. Choosing the right media for the

purpose and content of your activity and for your target group is of most importance whether you are a teacher, a researcher, a company-member or a student.

Activities during the first term

In the Classroom of the Future you can try new things in the fields of ICT and movement, games and learning, animation, video recording, digital tools for all media, software for school subjects and laboratory experiments. We also arrange several workshops to increase the ICT competence among the students and staff in different pedagogical methods like Digital portfolio, Digital storytelling, Webquest, Storyline, Internationalisation, The fifth dimension, Digital animation, PBL and Case method. The classroom has been booked 70% of the time available this term, mostly by distance and campus courses but also by external visitors. The distance courses have among other things used the room to learn how to use our LMS and videoconferencing systems. Many campus courses have wanted to integrate more ICT in their study plan. The room has also been an inspiration for several students when writing their dissertations of the effects of interactive blackboards in learning processes.

Two cases as examples

A. Educational Perspectives on Children's Books, Media and Drama, 30 ECTS

This campus course wanted to develop the course by integrating ICT in four different areas:

1: Using LMS as a tool for a campus course and learn how to use a course portfolio

2: Storytelling

3: Children's´ perspective in Media

4: Project work

To match the first need of this course the ICT educators of Lärum introduced and discussed the benefits of using a LMS in course design with the teachers and students and together we found a model that suited them. The students also learned how to create a course portfolio for themselves. During the second occasion students and teachers had a workshop in digital storytelling and they created short stories in groups with simple tools like Photo story, Moviemaker and Audacity. During the third meeting we worked with the question: What are young children really doing on the Internet, partly through a Webquest with links to popular children sites on the web and partly by deepening the students' knowledge of the safety on the Internet. Finally the students were supposed to use ICT tools in their final projects and were therefore supported by our Media Laboratory.

B. *The*

Classroom of the Future as a space for research

A study in the spirit of the Fifth dimension was carried through during the spring 2007 together with pupils from a school near the institution, teacher students and a researcher. The aim of the study was to find out more about what collaboration, concentrated on ICT –tools, between an academy and a school would mean for teachers, students and pupils involved. Twelve pupils from the seventh grade visited the classroom four times during a month and created there, together with scaffolding students, digital stories by animating clay figures with web cameras, recording audio tracks and learning how to use the new tools together. According to the evaluation of this study everyone involved was enjoying the environment. The environment also worked well for gathering qualitative research material with video cameras and mp3 players.

In the near future we have planned to make a web survey among all the users of the room during the first year. We would like to find out more how this learning environment can be developed further. What are the benefits of this space, how is it used and for what contents and with which tools? Which differences are there in this environment compared to traditional classrooms? We also hope to be able to connect a researcher to this project.

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