One Notebook per Teacher:
A sustainable concept for a wide ICT integration in school

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Keywords:
ICT in school, notebook projects,
ICT, e-literacy, Teacher Education, Teacher Training, digital divide

Abstract: These days technical equipment is no longer the main problem of integrating ICT in school. Still challenging are the daily operation and support of ICT infrastructure in schools, ICT education and training of teachers and the effective promotion of ICT use in class.

In 2001 we have developed an innovative ICT concept for the schools of the city of Solothurn (Switzerland). The concept has been accepted in public vote by the citizens of Solothurn and is now put into action. The main part of our concept is a personal notebook for every teacher. Professional support, ICT training and an ICT integrator shall help teachers to focus on pedagogical questions and stimulate ICT use in class. In our opinion, these are necessary requirements for a wide and sustainable ICT integration in school according to the motto of the concept "Use IT".

ICT in school: gap between availability and use

Using ICT in school is not a novelty anymore. Thanks to private and public initiatives (e.g. „Schulen ans Netz") getting ICT infrastructure into schools is no longer the main problem. Nevertheless, the use of ICT has not reached the same level as the infrastructure. What are the reasons for this gap between the availability of technology and the missing use in class? Main factors stated in literature are:

- **Missing professional ICT support** [Br00], [Br01], [GD01], [GI01]
- **Missing ICT know-how of the teachers** [Br00], [Br01], [DS01]
- **Missing know-how on how to integrate ICT in class** [Br00], [Br01], [DS01]
- **Missing promotion and discussion of ICT integration in class** [PS01]

Developing an ICT concept from scratch: a chance for a new approach

In 2001 we had the opportunity of developing an ICT concept for the schools of Solothurn (capital of canton Solothurn, 16'000 inhabitants) from scratch. Our main goal was to introduce ICT as an everyday tool in school. Not single outstanding events but a

wide use of ICT in class should be achieved. To attain this goal, we decided to focus mainly on teachers and not on pupils, because **equal opportunities in ICT do not only mean access to ICT infrastructure but also access to an e-literate teacher!** Experiences show that only teachers who are familiar with personal ICT use will integrate ICT into their lessons [Br00].

Modules of the Solothurn ICT Concept

With these goals and the findings cited above in mind, we developed an ICT concept in cooperation with school authorities and teachers consisting of the following modules:

- **One notebook for every teacher:** Every teacher with a work quota equal to or higher than 50% receives a personal notebook for teaching preparation and teaching in class. In our view a notebook is a standard tool for a teacher in an information society. As a consequence notebooks have to be placed at the teachers' disposal by the employer. A centralized purchase of notebooks minimizes the purchasing and support costs and supports training and knowledge sharing among teachers [DS01]. The use of the same notebook in preparation and in class eliminates several problems (compatibility), allows a 1:1 home testing of notebook use in class and therefore supports teachers with little ICT experience.

- **One notebook pool for every school:** In addition to personal notebooks for teachers every school is equipped with a notebook pool consisting of 14 notebooks. With a maximum class size of 28 pupils 2 pupils can use one notebook.

- **One pool with peripherals for every school:** Every school is equipped with one pool with several peripheral devices (printers, scanners, digital cameras, beamer). Modern use oft ICT in school does not only need computers and a network but also input and output devices. As with notebooks, a centralized purchase of peripheral devices not only minimizes purchasing costs but the standardization also minimizes training and support expenses and makes the interchange of devices much easier [GD01].

- **One percent professional support per notebook:** Teachers should concentrate on using ICT in class and not have to maintain the underlying technology. Following our recommendation in [GD01] we implement the rule of thumb "1% support per computer". The company providing ICT support for the city administration will also support the school notebooks.

- **Wireless internet access for all school buildings:** To increase the mobility in classrooms even when connected to the internet, wireless LAN (IEEE 802.11b) is installed in all school buildings.

- **One week compulsory ICT education for teachers:** Teachers not only have to learn the handling of ICT but also the possibilities and problems of integrating ICT in class.

- **A new position of an ICT integrator:** For teachers learning is not finished after one week of training. As an important part of our concept the position of an ICT integrator is being created. His task is to motivate teachers, provide further pedagogic assistance and examples of integrating ICT in class.

On December 11th 2001 the concept has been accepted by the citizens of Solothurn (Gemeindeversammlung) and is now put into action. We are convinced that with our concept we have laid the necessary foundations for a wide ICT integration in the schools of Solothurn!

Literature

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