



Fig. 1. The students write with keyboards and scan a QR-code

Writing, Spelling), General Education with natural science and geographic elements, Music and to some extent also in Calculating (basic mathematics).

In one lesson in the subject German the pupils should distinguish between the words "seid" ("you are" as personal form of "to be") and "seit" ("since" as temporary preposition). The teacher read a text, in which the two words appeared frequently. The students listed with a pencil on paper how often the two learning words were mentioned. Then they worked online on a text with their tablets using the keyboards. Each child received a feedback immediately how many words were chosen correctly. Afterwards the two terms were practiced further as school exercise in the German text books.

Because of a lacking flash-enabled browser several websites could not be displayed on the Tablet X4. This concerned also the subject mathematics. So the project team found apps like "King of Mathematics" (Basic Calculations), "Math Genius Trainer" (additions in the number space 1 to 30), Bubble Breaker and Loosen Wire (both for spatial orientation) that could be used for learning aims.

The kids enjoyed playing "A Little Night Music" by Mozart on their tablets and worked with much engagement in cooperation on their wikis.

3 Evaluation of the Project

At various stages of the tabkids project the team collected the experiences with the devices, the applications as well as the practical knowledge of the students and the estimations of the parents [24, p.32f].

3.1 Evaluation issues

In order to evaluate the use of tablet PCs in the classroom the following issues were taken into account at the beginning:

- How does the Tablet PCs contribute (in general) to the realization of modern and student-centered teaching methods?
- What basic skills in ICT on elementary level are required for a meaningful use of the tablet in the classroom?
- What additional skills do the children need to acquire to use the device independently and appropriately?
- In what subjects can the tablet be used



predominantly?

- Do children of this age manage handling with such a sensitive device without damaging it?
- Does the work with the tablets contribute to increase the learn motivation of the kids?

Further issues surrounding the tablet PCs were considered such as the infrastructure at school and at home, skills, motivation, carefulness, technical problems, funding and others. These were theme in an anonymous questionnaire survey partly before and especially towards the end of the project.

3.2 Feed-back from the questionnaires

- Most children had access to a PC or notebook a home, but only a few children to a further tablet PC.
- Mostly (learning) games, painting programs and Internet browsers are used at home as well as text-editors (office packages) and e-mail programs.
- Both in the survey of the children and their parents' answers it became clear that the children were already familiar with the technique (multi-touch-function) of such devices as confirmed through surveys about the media use of the youth [see also 5, 22, 23].
- The kids had no fear, to use the tablets as additional learning and working tool. The girls and boys were highly motivat-

ed and not irritated if any difficulties with the applications occurred. The joy of learning of the children lasted over the length and the different phases of the project. Especially the use of the highly versatile Open Source DokuWiki in the second year of the project opened the children the opportunity to link various learning content across the disciplines of elementary school in a project with high demanding character: Research of content, checking in the group, writing texts, incorporating images and Web links, and finally as a highlight the presentation of the results to the class. The kids had most fun with the offered games, chosen by the teachers in terms of game-based learning. It was also visible in practice and the survey that the children assisted each other with their know-how. Their knowledge was acquired mostly during the common visited additional (only optional) ICT skills lessons with a didactical background in informatics where the students learned many technical tricks they could use in the classroom phases.

- The children treated their devices in a very high extent with care and attention, problems were caused essentially by hardware defects, for which the children were not responsible at all.
- The majority of the parents showed in the survey retrospectively the willingness to financially participate in the purchase and maintenance of the Tablet PCs. It should be mentioned that the parents only financed the keyboard and memory cards. An amount between 50 and 100 Euros was mentioned, but some parents would have been willing to spend more for a device on a higher technical standard such as the tablets from Apple and Samsung available in 2011/2012.

Fig. 2. The Pearl tablet PC was successfully used in different subjects

