



FIRST EXPERIENCES WITH INTERACTIVE BOARDS IN PRACTICAL TRAINING ON BIOPHYSICS.

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Abstract

Technology of interactive boards opens new possibilities for implementation of electronisation of education on all levels. They can be a significant help to satisfy increasing demands for study. This year we installed electronic boards on the Institute of Medical Physics, Biophysics, Informatics and Telemedicine of MF CU in Bratislava. First experiences show that their implementation requires modification also in approach to teaching.

Key words: electronic board, teaching of biophysics, university education

Interactive boards at universities

Technology of interactive boards opens new possibilities for implementation of electronisation of education on all levels. They can be a significant help to satisfy increasing demands for study. However, use of their potential requires new approach to teaching, often called „engaged teaching“.

We are aware that the use of boards at universities may look very different from their use on primary and secondary schools. Teaching tools of boards are oriented to explain basic terms, what can be applied on lower education levels. Their usage by university pedagogic workers thus needs even higher requirements for preparation of self-made materials and lessons. On the other hand, university students are more ready for active participation on teaching process, what should be supported by the modern approach to teaching.

This year we installed electronic boards on the Institute of Medical Physics, Biophysics, Informatics and Telemedicine of Medical Faculty of Comenius University in Bratislava. All teachers absolved two lessons with practical examples of board usage. We summarised our first experiences with



electronic board to find the optimal way of their implementation in teaching process. We would like to reach this goal within frame of the project KEGA, solved in cooperation with Faculty of Mathematics, Physics and Informatics of Comenius University in Bratislava and Medical Faculty of Pavol Jozef Šafárik University in Košice.

Problems regarding implementation

The problems, we have to deal with, are in some aspects similar to experiences published in other works, for example the survey performed by EDEA PARTNERS [1] on primary and secondary schools. The common shortcoming is that the teachers often use the boards as a supplement to their teaching habits up to now. In the most marginal situations, the boards serve just as a screen for presentation of lectures in PowerPoint or other applications. Even when we try to take the advantage of electronic board functions, we tend to do it “old way”. A very important function of the boards is that they enable to control applications running in the computer. However, teachers often prefer controlling application using mouse connected to the PC. Possible reason is that beside different position for left and right “click”, the movement of cursor has different sensitivity. This does not allow use of one of the most important advantage – interactivity. Except for this, teachers always have to care about the mode of the board – otherwise any touch of the board can start an un-demanded operation.

Any use of interactive boards is determined by adequate skills, which must be continuously expanded regarding never-ending innovation process in this technology. Many students used the interactive board on high schools and they are often more familiar with them than the teachers are. Therefore, some teachers can be hesitated to use advanced functions of boards.

Another problem is that the teaching tools provided by boards are oriented to general subjects, what is not sufficient for higher education. According to the available data, 80 % of teachers at high schools use self-developed tools to explain advanced topics [1]. Explanation of interdisciplinary subject like Medical Biophysics thus puts even higher demands on preparation of such teaching tools.

When creating their own texts, many teachers do not incorporate principles of design, which can establish clear reading paths for students. Lack of familiarity with such principles of design may make it much harder for teachers to create and share resources that can be used independently of their authors [2].



Here we come to the possibility of sharing or downloading lessons suitable for teaching of Biophysics from other sources. Many manufacturers founded communities of interactive board users enabling to share teaching materials on a special web page. They are widely used by teachers on lower levels of education, but we lack such opportunity in our interdisciplinary subject. We believe that the MEFANET could be a base for such platform.

After getting familiar with advanced functions of the boards, we plan to design and prepare presentations of chosen tasks, so that they support function of interactive boards. Creation of electronic lessons should be oriented on advantages provided by the interactivity of texts or pictures. Since the use of commercial database is limited, we have to create new tools. For example, on practical training students model some physical or physiological phenomena using electric circuits. Since we have only one set of some models, students have to work in groups. These models can be simulated on computers and managed via interactive board, what would save time. Furthermore, the ability of interactive boards to visualise or dynamically represent abstract concepts could be used in electronic guidelines for practical training or usage of equipment in form of video presentations, eventually with connection to the internet.

Another tool, which could be helpful in teaching process, is recognition of written text, so that students can share results of individual tasks. However, writing on the board in the way that it can recognise the text needs some experience.

Since our boards are equipped with answering devices, we would also like to perform quick examination using this option. As we are still in "experimental" use of the interactive boards other ways of implementation of the boards will arise from further experience.

Conclusion

Using of interactive boards at universities is a new challenge. To find the optimal way of their implementation, discussions between colleagues and workplaces need to take place about how interactive boards can be used to support, to extend, and to transform existing practical experience.

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