THE USE OF POWERPOINT IN PHYSICS LESSONS – A STEP FORWARD IN THE DEVELOPMENT OF DIGITAL COMPETENCE

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The general goals of the physics education are that pupils learn about the main physical concepts and theories related to the phenomena from daily life and assimilate the knowledge about the nature. However, physics lessons should not be focused only on achieving these general goals, but also on the development of the natural sciences competences. By the national project "Development of Natural Science Competences" which started in October 2008 we make a step further on the development of various competences. One of the main objectives of the project is to prepare learning materials, test them in schools and revise them afterwards. Two of the materials, Electric circuits and Optical phenomena in the atmosphere are devoted mainly to the development of the digital competence, where pupils gain the knowledge and skills by using the computer. The main idea of the materials is that either after experimental work or after text-based learning pupils are required to create PowerPoint presentations with their results and new findings and present them afterwards to their schoolfellows. In order to ensure that the slides are prepared properly we supplemented the materials with an exemplary PowerPoint presentation, which is executed by the teacher at the beginning of the lesson. Along with general instructions special attention is devoted to the representation of experimental setups, numerical results and schemes – components that appear rather common in natural sciences. The evaluation of the materials in the context of the development of the digital competence is based on a pre-test and post-test. Results reveal that the materials indeed foster the digital competence. It turned out that the pupils are lacking in expertise on more advanced and specialized handling with PowerPoint, especially in activities which are typical for natural sciences. Moreover, all teachers pointed out that many pupils had difficulties by their oral presentations, mainly because lack of experiences.

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