

ABSTRACT

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At present, in connection with science education, research focuses on inquiry-based approaches that require the active work of students and develop science process skills as a component of science literacy. However, the development of engineering skills and practices is also considered increasingly important. In this thesis, we searched for the optimal way of implementing an inventor-oriented student project into the physics teaching process at primary school, while we focused on the sixth grade. Such a project has proved to be suitable for developing students' science and engineering process skills and practices. The aim of such a project is, from the student's point of view, a functional, usable product. Working on such a project is complex and is challenging not only for students but also for teachers. We have therefore developed a worksheet based on scaffolding, which provides students with a guide when working on an inventor-oriented project. We have also developed guidelines for teachers and the framework of an inventor-oriented project, which serves as a theoretical basis for its implementation. As it turned out during the analysis of interviews with students who participated in inventor-oriented project, the development of a functional product is a significant, positive experience for them, and the project is relevant for them. Students remember in particular the challenges and problems they had to solve in connection with the construction of the product. The results of our work make an inventor-oriented project feasible even in formal education and significantly facilitate the work of the teacher. The project, as we propose it, can be implemented in seven lessons.

Key words: inventor-oriented student project, science and engineering practices, scaffolding