Title: Using PBL in teaching basic-level programming

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Abstract:

We present experiences in using Problem-based Learning (PBL) in a basic-level university computer programming course. PBL has widely been applied in professional education. However, it is not obvious that PBL suits for teaching programming. Programming requires little factual knowledge, but is a conceptually difficult subject and a skill that must be practiced.

Our experiences from a programming course in Helsinki University of Technology were that PBL is a useful method in teaching programming, but requires adaptations. To exercise programming skills, the students did programming assignments related to the material handled in the PBL sessions. To improve the understanding of some fundamental concepts, the students wrote essays. PBL was succesful in teaching program design, which is the biggest problem in programming. Students could discuss real-life design problems and create overall solutions to these problems. The learning results were at least as good as in a normal course.