
This article describes the scope to optimize instruction and learning through adequate multilevel integration of ICT including computer use for learners, in particular for learners at risk in Dutch secondary schools. The study asks which curricular, instructional and ICT characteristics can be expected to optimize learning processes and outcomes, and how to best achieve this optimization. The study suggests that the process to realize multilevel transformation and optimization of education can adopt different forms in different countries, depending on national or other circumstances. It further says that successful optimizing transformation of education will require a long term, gradually broadening collaboration between those persons and the institutions involved in the innovation of educational practices and instruments, at an increasing number of levels, within and outside the educational system.

**Keywords**: Architecture for educational technology systems; Improving classroom teaching; Interactive learning environments; Secondary education; Teaching-learning strategies; Netherlands.