

DEVELOPING STUDENTS' ICT COMPETENCE

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The students in school should develop their knowledge and understanding of mathematics and self-reliance in their learning. They should be stimulated to find solutions by explorative and experimental activities, be encouraged asking questions and investigating different representations and present arguments during their work. Self-regulated learning could also characterise the goal (Boekarts, Pintrich, & Zeider. 2002).

We chose a spreadsheet, a graph plotter and dynamic geometry as suitable tools for developing mathematical concepts, for doing mathematics and solving problems. These tools were also chosen in the CompuMath project, which provide long time experience using different software (Hershkowitz, Dreyfus, Ben-Zvi, et al. 2002).

There appears to be limited research of innovative use of ICT in mathematics teaching (Lagrange, Artigue, Laborde, & Trouche. 2001) and of students' choice of computer tools. This could be due to the way tasks are presented to the students, with the representation and tools that should be employed (Friedlander & Stein. 2001).

In an ongoing three-year project following students in school years 8 to 10, the aim is to develop the students' competence using ICT tools in such a way that they are able to choose tools for themselves, not rely just on the teacher telling them what to use.

To achieve this a group of teachers and a researcher work together and discuss teaching ideas, which are then implemented in the classes. Experience so far, reveals a need for the teachers to develop their own competence both using the software and utilise this with their students in an experimental and challenging way for the students. In order to develop competence and self-reliance the students need both good introductions to the features of the software and open tasks that challenges their understanding of the tools.

References

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