

Mathematics in Touch

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Abstract. At school we use technology to support teaching and learning. Calculators - especially graphical ones - are well established in education. They are useful, but with their small displays and tiny keyboards they are not state of the art concerning technology.

On the other hand we use desktop computers for spreadsheets or dynamic mathematics software in mathematics education. They are excellent and important to visualize mathematical content. But here we have the same problem: technology. For computers or notebooks in class rooms we need space, electricity and often computer labs. So we produce barriers in the learning process – physical and didactical ones.

Now the mobile device manufacturers solved some of these problems. They invented flat multi-touch devices without any hardware keyboards. E-book readers, slate or tablet computers are thin and powerful devices, that easily can be integrated in everyday life. So we have everything we need to use them at school: no physical barriers, enough battery life, multi touch, wireless access and a web browser.

JSXGraph - the Javascript based dynamic mathematics framework now runs on these new mobile devices. Many DGS products are Java driven and they need additional plug-ins. These plug-ins do not supported mobile devices. JSXGraph opens the door to these tools. Therefore we adapted JSXGraph to multi touch. We can integrate interactive constructions in web pages and we combine the advantages of easy to use school books and interactive computers. Students discover mathematics dynamically by using their fingers. They can touch mathematics without any technical barriers.

Keywords and phrases: dynamic mathematics, mobile devices, tablet pc, JSXGraph, Javascript

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