

Classification and analysis of some computer software packages for teaching Mathematics

by

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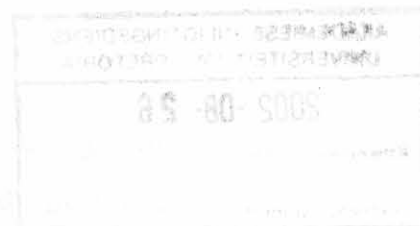
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Summary

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There exists, at present, a large number of software packages that are specifically designed for the teaching of mathematics. Yet many schools, especially in rural areas, have not been exposed to the new technological developments. Using a mathematical software package is therefore an unknown concept for many teachers. It is our belief that as time progresses, more schools will become aware of the possibility of using technology and software for teaching mathematics. Teachers who embark on such a route will be in need of knowledge and guidance. This dissertation aims to address such needs. In this dissertation, the advantages and disadvantages of using software packages in teaching mathematics are discussed, a classification of software packages is developed and a number of the software packages are listed and described. We do not attempt by any means to give a complete list of available mathematical software packages, but we do, however, give some examples in each of the categories.

My personal experience

I started school in 1978 when I was seven years old. I attended a school in one of the villages around Thohoyandou in the Northern Province of South Africa. The first time I touched a computer was in 1991 in my second year of BSc (Education) at the University of Venda for Science and Technology. The first thing that came to mind was to press the keyboard. Unfortunately the computer was dead. Nevertheless, I was so proud and happy about the experience that I took a picture of the computer. It was a memorable experience for me.

I managed to graduate even though I was at a disadvantaged university with poor facilities and infrastructure. I now see that by not having had experience of computers in my studies, I have missed a lot. Our lessons were very theoretical and we had to visualise everything mentally. In mathematics, we used to draw graphs by hand. Some were complicated and seemed a waste of time. Some were even impossible to draw, especially those in three dimensions. In my opinion we wasted time evaluating definite integrals and solving complicated systems of linear equations without computers.

These days a large number of school learners are at a great advantage because they are able to use computers, even before Grade 1. They are also able to do many complicated tasks in mathematics using computers. Their lessons are no longer imaginary and they can draw almost any graph with the aid of the computer.

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