

Chapter 4

Conclusion

Computers have proven to be powerful problem-solving tools that can also promote the understanding of mathematical concepts. For this reason the integration of computer-assisted instruction into the teaching and learning of mathematics should be encouraged.

The task of selecting appropriate software packages is not an easy one and obstacles may abound. For example, instructors could be restricted by stringent budgets that limit their choice. Or, the task of deciding could be given to a curriculum committee where there could be a difference of opinion as to what product is best suited. This could prove to be problematic, especially if the software package to be purchased has to be used for a variety of classes or for a long period of time. Another obstacle is, of course, a lack of knowledge concerning content and use of computer software packages. This can only be resolved by following a steep learning curve that requires time and patience. It is our hope that this dissertation may somewhat alleviate this task.

Important issues to consider when selecting a software package is firstly, whether the particular package is likely to assist instructors in teaching and learners in learning for their particular situation. In other words, the package should suit the course. Secondly, the instructor should consider his/her own style and goal when selecting a package, and to be clear on how the package will be integrated into the teaching process. Thirdly, instructors should feel committed to using the particular package and feel comfortable when using it.

Once the choice has been made and the package is at hand, the instructor needs to acquaint himself thoroughly with it. This can be done by trial and error if the instructor has an experience of other packages. It could also be done by working through a tutorial, a regular feature with most packages nowadays. Communication with experienced instructors, be it via e-mail or by attending conferences on computer-assisted instruction, is invaluable. Communication is especially useful in times of encountering seemingly insurmountable problems which can be resolved in no time at all by more experienced peers. Direct communication with software companies via the internet is another option. A final useful source of information on computer-assisted instruction is the rapidly growing collection of journals, specifically on this topic. An example here is "Journal of Computers in Mathematics and Science Teaching". This journal also carries useful software reviews. Instructors may subscribe to such publications themselves or encourage schools to make them available through the school libraries.

The way in which an instructor integrates technology into his/her mathematics teaching will depend on the available infrastructure. If only a few computers are available, the instructor could begin by using it for demonstration purposes. With more computers becoming available in time, learners could become actively involved.

Our experience is that having learners working on the computers in groups of up to four, works well. Learners in a group begin discussing the work and fruitful discussions are generated. The instructor should try to become involved in some of these discussions so that he/she can make contributions that encourage further and deeper thought.

In whatever capacity, computers should form part of our mathematics teaching. Computers are an integral part of everyday life, and we have the responsibility of preparing our learners for what they are going to be faced with in society.

The author hopes that this dissertation will assist schools that are not knowledgeable about computer software packages for teaching mathematics.