The Application of Dazzler 5 for the Development of Interactive Tutorials in Biomechanics by the School of Physiotherapy (University of South Australia)

Kevin Meehan, Qmark Systems
Info@qmark.com.au

The University of South Australia is the State's largest university with 25,000 students, 2,000 staff and six campuses. There are six academic divisions and various faculties and schools that are incorporated within and responsible to each of those divisions.

The School of Physiotherapy is responsible to the Faculty of Health and Biomechanical Sciences which is incorporated within the Division of Health Sciences. The School of Physiotherapy offers programs and research in both Physiotherapy and Podiatry and is located on the City East Campus of the University of South Australia. The School occupies a modern building with well equipped teaching facilities including five research laboratories, a computer pool and both Physiotherapy and Podiatry clinics.

In 1998 the School of Physiotherapy was awarded a University Innovative Teaching and Learning grant to produce interactive tutorials in Biomechanics for web-based and CD-ROM delivery. The aims of the project are:

- to develop a teaching resource that will be used as core material by undergraduate Physiotherapy and Podiatry students and as update material by postgraduate students;
- to develop four on-line interactive tutorials in the subject Applied Biomechanics designed to enable students to check their knowledge of material presented in the lecture program;
- to provide a flexible learning environment enabling students to progress at their own pace; and
- to complement the web-based material with a CD-ROM containing high quality animated graphics, photographs and video clips providing a clear description of the three-dimensional motion and functional anatomy of the chosen content.

The project entails translation of previously developed CD-ROM based tutorials (*Lumbar Spine*, *Pronation and Supination of the foot*, *Normal Gait*) into a format suitable for on-line delivery and the development of a new tutorial on the Biomechanics of the Hip and Pelvis region.

Dazzler 5 was the preferred authoring environment since the software makes it possible to develop interactive tutorial material for CD-ROM delivery that can also be delivered on-line through the use of the Java applet creation abilities of *Dazzler*. The construction of multiple choice questions was achieved with minimal effort and other styles of question or presentation such as 'Drag-and-Drop' or 'Point-and-Click' were also managed with a high degree of programming simplicity. The manner in which *Dazzler 5* creates and 'packages' each applet totally 'web ready' reduced the number of hours that would have been required to program the tasks manually directly in Java. The packaging capabilities of *Dazzler* also eliminated the need for compiling which would have been required if the applets had been written in some other programming language and also overcame any browser or platform specific problems.

The interactive tutorials in Biomechanics developed by the School of Physiotherapy make use of the power and flexibility of on-line and CD-ROM delivery. Evaluation of the learning outcomes from the implementation of this project will provide the foundation for modification and refinement of the tutorials and the findings will provide the impetus for the development of other innovative web/CD-ROM based teaching and learning materials in the future.