

**Evaluation**

Unlike the most other learning tools, use of *BestChoice* by students automatically generates data that can provide information on how to support learning more effectively and efficiently. We have shown that, through these data, users can inform the design of systems to support their learning. The extent and quality of feedback entered by users has been overwhelming.

*User 12:* BC helps me understand chemistry in a way that is both faster and more convenient than tedious text book exercises - almost like having a personal tutor watching over my shoulder. Thank you and keep up the good work! (Apr 06).

*User 13:* *BestChoice* is simply the best learning technique i ever came across. It walks me through the important steps to follow in order to solve a question and makes the theory more simpler (Mar 06).

*User 14:* really helpful, different way of looking at things than portrayed in the lecture, gave depth of understanding (May 07).

The most frequent suggestion entered in the survey is *more questions*. New question pages are being added on a continual basis. An important aspect of the writing of these is that new ways to present content interactively are being explored on a continual basis.

The foregoing discussion includes a broad analysis of data pertinent to student perception and usage. We have also considered student response data for individual modules and questions in order to identify areas found difficult. This process has informed the on-going updating of existing learning activities and authoring of new ones.

The data collection process makes it easy to see where students are going wrong, the authoring system makes it possible to create activities that address the student difficulties identified, and usage of these activities in turn generates data that provide evidence as to the success or failure of the *improvements*. This evidence-based methodology contrasts

markedly with the *working blind* approach that one is forced to adopt when revising or creating most teaching resources.

The world-wide web has enabled communication and dissemination of ideas in ways that were beyond belief even 10 years ago. There is also a lot of talk about using the web to foster learning. However the extent to which most web-based content has moved beyond passive learning is minimal. *BestChoice* stands out from the rest both with respect to the emphasis on active learning, where student responses result in display of appropriate feedback, and the evidence-driven approach used to create and up-date content.

A web-based application like *BestChoice* could become an international resource informed by both educators and students world-wide. Our work for the UK-based RSC is a major step towards achieving this for high school students. The significant challenges at national level are to increase teacher participation in use of *BestChoice Reports* and to find ways and means of encouraging and supporting extensive use of *BestChoice* at other universities.

Both our experience in the journey to *BestChoice 2008*, and the substantial positive feedback from our users, lead us to believe that we have only just begun to exploit the potential of the web to deliver interactive learning. Therefore, extension and enhancement of *BestChoice* will continue. It is very exciting to be involved in the creation of a learning tool, the development of which is informed by the learners.

**Acknowledgement**

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**Obituary: Ken Seal (1923-2007)**

Ken Seal, Hon. FNZIC and Past-President, died in Auckland on 29 October 2007, aged 84. He was a bright and enthusiastic member of the Auckland Branch for many years.

Ken was born in England. At primary school he won a scholarship to attend Kilburn Grammar in London. From there he was offered employment by GEC who agreed to pay his fees to attend Birkbeck College, University of London, which operated as a part-time university with courses and laboratory work on Saturdays and Sundays only. Ken graduated with BSc and MSc degrees in geology. At GEC he worked on a number of war-related scientific projects, which exempted him from military service when he reached conscription age later in the war.

He, and his wife Joy, migrated to NZ in 1952 where Ken took up employment with Amalgamated Brick & Pipe Company in Auckland. There, he was responsible for quality control and development work on their products, and this work was later extended to similar work for the later named company, Ceramco. Both companies were managed by the well-known Auckland entrepreneur, the late Sir Tom Clark.

In the early 1970s Ceramco was a shareholder of Geothermal

Energy NZ Ltd., set up to utilise NZs expertise in producing electricity from geothermal steam. Ken was one of its geochemists who later became a director of the company. A major project was to assist Indonesia as part of the largest NZ aid project of that time. Ken served as its project manager from 1971-1975 returning to Ceramco and Auckland in 1975. He continued his geothermal consulting work around the world throughout the 1980s until his retirement.

Ken was a significant contributor to NZIC. At meetings he was always liked for his questioning nature and great enthusiasm for chemistry. He read widely, painted, and had a life-long interest in scouting. For his efforts as a young messenger in the early years of WWII he was awarded the Silver Cross for Gallantry. During a bombing raid he had, under the guidance of a doctor working nearby - himself unable to undertake the procedure - amputated the arm of a woman trapped in a burning building. He was awarded the CBE for services to New Zealand in 1977.

Ken is survived by Joy and their children Lesley, Kingsley and Heather.

Ashley Wilson