

Welding knowledge

Tony Harland¹, Alison Meldrum² & Jules Kieser²

**¹Higher Education Development Centre
University of Otago**

**²School of Dentistry
University of Otago**

Focus of workshop/discussion

This project examines student learning and the way knowledge is understood in dental education. In 2004 students took part in a Problem-based learning course that included a novel class that was led by a patient, rather than a lecturer. We studied student experiences of this course predicting that the patient-led class would provide an opportunity to contrast different types of learning experiences. The study highlighted how embedded all learning and teaching had become in a culture dominated by the transmission of authorised factual knowledge. The patient-led class allowed students to recognise alternative forms of knowledge and also that they could learn in new ways. Students clearly compartmentalised and valued knowledge forms in different ways that were culturally determined. In 2005 the course was taught in a new way with the aim of bringing the different knowledge types together in a single learning experience. At the end of this programme, we interviewed twelve students to find out how they had experienced learning and how they understood knowledge. Preliminary findings suggest that not only did we succeed in bringing different forms of knowledge together into a new relationship, that in doing so the relationship itself directed student thinking and behaviour.

Context and significance of focus

Our dental curriculum is largely based on fundamental science and the students' exposure to this is through what Thomas Kuhn calls 'normal science'. This concept emphasises teaching what is already 'out there' and students come to understand this as authorised knowledge and a fixed commodity that provides a foundation for learning and practice. Normal science is typical of teaching during the undergraduate years (Kuhn, 1970). Students learn the facts or the 'basics', add to this as time goes by and then include some field or laboratory skills. However, a curriculum based on normal science seems far removed from the way science lecturers and professional dentists learn. For example, their learning also comes from inquiries that can transcend the assumptions and rules of normal science, they do not always build on what is already 'out there' or they make scientific leaps or paradigm shifts. More typically, however, scientists and professionals use intuition or tacit knowledge (Polanyi, 1962) and the 'artistry' of science and professional practice is quite recognisable, even though it may be difficult to articulate (Schön, 1987).

Does an educator adhere to the science basics and skills training and then later move on to other areas of professional learning, or can we bring learning and knowledge

together in a more holistic conception of education? In our 2005 curriculum we retained the same overall topic for the programme but developed the course using Dewey's philosophy of science and education that advances the idea of learning through inquiry (eg Dewey, 1938, 1964). This is a similar process to that of academic research and it gives students the freedom to create knowledge by means of systematic reflective thinking. In our new course, inquiries started with the non-scientific patient-led class to provide students an opportunity to select their own authentic questions and carry out research. Our educational questions focus on the impact of this strategy on student-learning experiences.

Outline of process

We will briefly present the outcomes of the 2004 study to provide the rationale for the 2005 curriculum changes and then some very preliminary ideas about student experiences. Two case studies will form the basis for our discussions. Questions will centre on how a curriculum can alter the construction of learning and knowledge.

References

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