

EVIDENCING TACIT AND EXPLICIT DISCIPLINARY PEDAGOGICAL CONTENT KNOWLEDGE AS SIGNPOSTS OF GOOD TEACHING PRACTICE

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Background

Discipline-based pedagogical content knowledge (PCK) is a growing area of interest in the tertiary sector leading to a need for robust frameworks to evidence teaching practices. In 2015, a consensus model for teacher professional knowledge and skill, integrating PCK, was published as an outcome from a summit of world leaders in this field (Gess-Newsome, 2015) focussed on the secondary level. This model highlights the different facets of PCK and teachers' professional practice, and enables exploration of what evidence of effective teaching might look like. The aim of this study was to identify elements of tertiary chemistry PCK that may be transferable (explicit) as well as elements which can only be acquired through personal experience gained in teaching (tacit). We have captured multiple aspects of tertiary PCK and effective teaching practices. These have been collated and distilled into an online teaching resource of seven steps to assist new and experienced tertiary teachers to transform their teaching.

Methods

The methodology was informed by literature research and frameworks that have captured and explicated sophisticated teacher practice (Cooper, Loughran, & Berry, 2015), particularly the tacit forms of a teachers' professional knowledge. Data was collected through the voluntary participation (by informed consent) of tertiary chemistry faculty attending national and state-based workshops. In addition, interviews with ten teaching academics recognised as excellent teachers by their own institutions (identified through searches of institutional websites) were completed. The purposeful selection of interviewees aimed to balance gender, chemistry subdiscipline speciality, and academics who identify as teaching-focussed (that is, their research is in SoTL or discipline-based education) with those involved in typical chemistry research. The consensus model for PCK (Gess-Newsome, 2015) was applied to inform the process of data analysis, with a particular focus on topic-specific professional knowledge (TSPK).

Results

Analysis of the qualitative data collected revealed several elements of PCK and TSPK that were specific to the context of tertiary teaching, however still aligned with the consensus model for PCK. Some of the most significant project findings emerged from the shared stories of the individual participants in terms of how their experiences have changed their practices. Distillation of common experiences and strategies, followed by the combination of these with the latest literature in effective tertiary teaching led to the development of a set of generally applicable steps to improve teaching practice. In this presentation, we will present the steps and ways in which they can be embedded into teaching as a journey towards good practice.

References

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