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Teachers' learning and knowledge: motivation and self-efficacy

Historically, the 1960s saw the emergence of bodies of research on the form and nature of teaching, with the gradual emergence of a link between teachers' knowledge and practice and pupil achievement. This relationship gave rise to the notion of a systematic basis for teaching and in his 1977 book *The Scientific Basis of the Art of Teaching*, Nathaniel Gage defines teaching as 'any activity on the part of one person intended to facilitate learning on the part of another' (14). Gage (1977) argues that facilitating learning requires a combination of artistry, that is 'a process that calls for intuition, creativity, improvisation and expressiveness' (15) and a scientific foundation, which he defines as 'knowledge of regular, nonchance (sic) relationships in the realm of events with which the practice is concerned' (20). The emphasis on teachers' behaviour moved towards its cognitive basis and by the 1980s researchers were characterising the expert knowledge required for teaching. Seminal in this debate was the work of Lee Shulman on the knowledge bases for teaching (Shulman 1986), which he codified as knowledge of content, pedagogy, pedagogic content, learners, contexts, goals, purposes and values. The characteristics and quality of teachers' knowledge has increasingly attracted the interest of educational researchers and teacher educators over the intervening decades and this issue of JET contains a number of papers that take forward our understanding of this complex and contended matter.

The first article, from Claire Dickerson and colleagues from the University of Hertfordshire in the UK makes an important contribution to theory and practice through research into teachers' and pupils' personal knowledge. Using the ARM technique (active learning, reflection and modelling), findings highlight the role of pupils in developing student teachers' knowledge of teaching and importantly, the relationship between the personal knowledge of teachers and pupils. The knowledge base of any individual teacher is, of course, unique (Eraut 2000) and not uniformly organised into discrete areas. It is inextricably entwined with their 'personal practical knowledge' (Clandinin 1985), personal beliefs (Thomas 2013) and the context (Eraut 2000) in which they are working. A major methodological contribution of Dickerson et al.'s paper is that of the novel 'Eraut-Shulman Teacher Knowledge Framework', which combines Shulman's teacher knowledge bases with Eraut's knowledge types, viz. cultural, codified and personal. This is surely destined to become a much used instrument in the toolbox of teacher knowledge scholars.

Teacher knowledge and teacher learning are intimately linked and both are career-long endeavours. Piia Näykki and colleagues from the University of Oulu in Finland take up this theme in the next paper with their study into the experiences of pre- and in-service teachers and teacher educators from a Finnish university working collaboratively in a learning community. The 'teachers-as-learners continuous learning' model is described and outcomes of participants' reflections are reported. The experiences of the two groups of teachers differed, perhaps reflecting the effects of a maturing community of practice

(Wenger 2000) and the importance of situated learning (Lave and Wenger 1991), both basic building blocks of teacher education programmes internationally.

Teacher autonomy in terms of professional development is the focus of the next paper in this issue, which comes from Turkish authors Ayşegül Okay and Cem Balcikanlı. The 'Teachers' Professional Autonomy Questionnaire' (TEPAQ) was used with university EFL teachers to evaluate the strengths and weaknesses their professional autonomy and to identify areas for development and support for their professional learning. This is another potentially useful tool for teacher educators and curriculum designers.

A novel context for teacher learning is provided by the next study, from Galicia in Northern Spain. Carmen Franco-Vazquez and her colleagues from the University of Santiago de Compostela provided student teachers with a unique, intergenerational learning opportunity through a service-learning project. They designed an artistic workshop in a rural location for senior citizens to create visual narratives to recover memories of their lives in earlier times. The student teachers made a documentary film in which the life histories of the elderly people were portrayed. This engagement with an older generation enriched the student teachers' experiential learning in their teacher education programme and also helped to reinforce their commitment to the community and broader society.

Teacher learning and knowledge under pressure is the theme of the next two papers. Decision making in the classroom, influenced by both cognitive load, i.e. the volume of mental activities imposed on a person's working memory, and affect, i.e. the underlying experience of feeling, emotion or mood, is the context of a study by Caroline McCarty and her colleagues from the University of Southern Queensland in Australia. Given the estimation that working classroom teachers make a decision about every 15 seconds, it is interesting that McCarty et al.'s research showed an increase of positive action and reduced cognitive load when teachers made decisions in a state of positive affect. This led to increased self-reflection, a heightened sense of achievement and ultimately, to a more positive classroom environment, benefitting all concerned.

Inbar Levkovich and Shiri Shinan-Altman, from a College of Education and a University in Israel respectively tackle the problematic subject of compassion fatigue in the next article. Defined as the physical, emotional and psychological impact of helping others, the context of these authors' study was teachers' daily interactions with children with complex needs. Semi-structured interviews elicited a rich data set of the impact on teachers of compassion fatigue, which fell into three categories: stress symptoms, stress triggers and positive aspects of the teachers' compassionate work. As these experiences are becoming increasingly common for teachers, who are often the first to recognise a child's suffering and distress, the need for a formal system for support is recommended.

Professional challenges such as this can be rich opportunities for learning, however, achieving a balance of challenge with motivation remains the pot of gold at the end of the professional development rainbow. The final three papers in this issue address this theme, starting with a study into the impact of culture and experience on the motivation of pre- and beginning in-service Chinese teachers by Wangqiong Ye of the University of Oslo and her colleagues from East China Normal University. Important factors for both groups included social influences, personal and social utility value and the high demand and low return of the teaching profession. The pre-service teachers were generally more highly motivated than those who had started their careers and this finding is discussed

in light of a 'culture-motivation' framework for understanding Chinese teachers' motivation for the profession.

The theme of career aspiration is taken up by authors from two separate higher education institutions in Melbourne, Australia. Anne Suryani and Sindu George conducted a study of teacher education undergraduates who had entered the programme with little or no intention to teach. The reasons for this apparently contradictory choice of course included the reputation of the university, convenient location and comparatively low tuition fees. On a more positive note, some respondents cited the provision of scholarship as contributing to their course decision. That many teachers are sustained in their motivation by and continue their learning through the notion of teaching as an intellectual activity has been a recurring theme through the pages of JET (see e.g. Murray et al. 2009; Tang, Wong, and Cheng 2015; Glutsch and König 2019; Zhang, Admiraal, and Saab 2021).

Motivation and its link to another current topic of debate, that of self-efficacy, is discussed in the final paper in this issue. İsa Yildirim of Ataturk University explored the effects of the communication skills of their university tutors on the self-efficacy and attitudes towards the profession of student teachers in Turkey, finding a positive effect on self-efficacy that is mediated through their motivation for teaching.

Three short articles, continuing the theme of teacher learning, conclude this issue. In our Research-in-Progress category, Monica Gonzalez and Alisia Mickle Moldavan (USA) report on a multi-institutional action research project using trigger scenarios to engage student teachers in discourse around equity and social justice in mathematics classrooms. The first paper in the Research-in-Practice section is from Hendriwanto, (Indonesia) who reports on a study focussing on student teachers' facilitated reflection during practicum. Finally, Susanne Metscher and Kevin Wong (USA) provided student teachers in early years education with a digital library of books to encourage young readers, which they then evaluated, with positive outcomes.

Desire for a goal (motivation) and belief in ability to achieve a goal (self-efficacy) are two vital drivers for successful teacher learning and the subsequent accumulation of professional and personal knowledge. The papers in this issue have brought some fascinating insights into a range of approaches to these mainsprings of teacher education, making potentially important contributions for theory and practice in the years to come.

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