



# Is the master's degree being neglected in the discourse on postgraduate education?

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While the discourse on postgraduate education in South Africa has focused on the doctoral degree,<sup>1</sup> questions have been raised regarding the role that master's students play in university research. A Western Cape based study has suggested that master's students frequently undertake work which would be expected from doctoral students in Europe or North America.<sup>2</sup> The shortage of doctoral researchers in South Africa may be contributing to this phenomenon, with the research burden in funded projects falling on master's students. We need to examine the impact on degree completion rates of the high research standard expected of master's students; their employability and the relevance of their skills to industry and society; and the resultant impact on their motivation to pursue PhD studies.

The PhD is considered an indicator of a country's developmental capacity and is valued for its contribution to innovation,<sup>1</sup> which covers the entire pipeline from the generation of new ideas and their transformation into new or technologically improved products, services, methods or processes, to their implementation.<sup>3,4</sup> The role of the university in innovation, especially in the context of engineering and technology, is twofold<sup>5</sup>: (1) to promote the exploitation of knowledge by industry; and (2) to provide new graduates with appropriate skills for the management, protection and exploitation of knowledge.

A recent report, *The PhD study*,<sup>1</sup> identified that 48% of graduates in the broad field of 'Engineering Sciences, Materials and Technologies' are employed by industry. Yet doctoral graduates in this category are least likely to apply their doctoral skills in the workplace: 34% claimed to use the skills obtained during doctoral education frequently, compared to 45% of graduates across all fields. In addition, engineering science, materials and technology graduates were least likely to regard their doctoral qualification as having been crucial to obtaining their current job – 27% compared to 40% across all fields – calling into question the relevance of current doctoral training in engineering and technology to employers in industry. *The PhD study* notes suggestions from employers for workplace skills training to improve doctoral education. The challenges of implementing its recommendations include insufficient funding, a limited conceptualisation of doctoral training, a shortage of potential doctoral students, limited supervisory capacity, a lack of recognition of the value of the degree, and limited partnerships and collaborations with industry.<sup>6,7,8,9</sup>

Given the challenges of expanding doctoral education, the possibility of some of the skills required for the knowledge economy being provided by master's degrees, especially in engineering and technology, should be considered. It is likely that the same lack of workplace skills exists in master's graduates. A master's degree should produce researchers who are able to contribute to the development of knowledge at an advanced level, deal with complex issues systematically and creatively, make critical use of data and information, communicate effectively, demonstrate autonomous problem solving and task completion, and engage in ongoing learning.<sup>10</sup> Master's degrees in engineering and technology that have these attributes would complement the professional master's degrees that exist in other fields. Growing a base of appropriately skilled master's graduates would require smaller investments of time and resources, and would provide a foundation for further training to produce the PhDs that are also needed.

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