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The Institutional Strategy and Undergraduate Teaching of Engineering Studies in World-class Universities – Case Study in China, United Kingdom and Canada

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Abstract

To compete in the globalised knowledge economy, governments have extensively adopted the idea of building world-class universities, widely measured through global ranking systems. The research investigates how undergraduate teaching quality is strategically addressed in so-called world-class universities and is conceptualised around the managerial logics embedded in strategizing and the academics logics linked to undergraduate teaching. It draws upon Lave and Wenger's (1991) concept of community of practice as an overarching framework to explore how world-class universities address undergraduate teaching and to interpret how faculty members perceive and respond to institutional decisions. The research design is founded on a comparative case study between Chinese, British, and Canadian leading universities, reflecting on continental, country, institutional and disciplinary similarities and differences. Data was collected through policy documents and interviews with academic, administrative, and leadership staff working on undergraduate teaching in Engineering departments.

Full paper

Higher education has become the main driver in the development of

the knowledge economy, which many scholars describe as a system of consumption and production based on intellectual capital (Olssen and Peters, 2005; Marginson, 2010; Guruz, 2011). Nowadays, higher education is being developed on the global stage due to the internationalisation of higher education (Knight, 2003, 2008; Altbach and Knight, 2007; Marginson, 2011; De Wit, 2017). Student mobility is increasing, and universities worldwide are now competing for students and resources in the global higher education marketplace (Salmi and Liu, 2011).

In related scholarly works, higher education institutions are prioritising organisational effectiveness (Shin, 2011) to better face the challenges of resource allocation for various missions and stakeholders (Skelton, 2005; Stensaker et al., 2017). As a result, higher education institutions have become more managerial and strategic (Skelton, 2005). One of the manifestations of this priority is the increased formulation and implementation of strategic documents (Fraser, 2004; Skelton, 2005; Stensaker et al., 2017). In addition, the quality of teaching and learning has become more important (Shin, 2011) in response to the rapid growth of participation and increased competition in higher education markets (Giannakis and Bullivant, 2016).

By combining these two observations—the increasing use of strategy and the increasing attention to quality in world-class universities—this research aims to investigate how institutional strategy addresses undergraduate teaching quality in world-class universities. Specifically, this research will focus on the undergraduate teaching of engineering studies. As one of the 'STEM' subjects, engineering is considered with more recognisable and measurable value for the development of the knowledge economy.

This research is using case studies in three countries including China, the United Kingdom and Canada, to represent the main streams of higher education systems in the global context. I have chosen one

research-intensive public university that is highly ranked (top 100) by mainstream global ranking systems (QS, Academic Ranking of World Universities, and Times Higher Education) in each country. Data sources include strategic documents from the selected universities, as well as interviews with faculty and department leaders, academic staff, and administrative staff in order to present a thorough picture of the undergraduate teaching quality in world-class universities.

This study demonstrates that research universities intend to cultivate communities of practice as a response to enhancing undergraduate teaching. In detail, each university has developed an academic track called 'teaching faculty' whose primary responsibility is teaching (mainly undergraduate). Nonetheless, the universities' starting points and developmental stages are distinct, resulting in different impacts on teaching practices and relationships with teaching-and-research faculties.

The research findings suggest that this sub-community consisting of teaching faculties is crucial for providing teaching skills and exchanging teaching experiences within the community of practice for enhancing undergraduate education. However, teaching faculties are generally not perceived as equal to teaching-and-research faculties in status yet, which means their potential and value for enhancing teaching remains unacknowledged. Therefore, universities need to put more effort into developing and formalising this newly emerging academic track. Moreover, this study implies that teaching faculties as an academic position with career progression lacks a clear formulation. Universities do not recognise the position for long-term development but rather to compensate for the shortage of academic staff to educate undergraduates (due to higher education's massification).

Nevertheless, this study has also revealed that with more teaching faculties recruited, more collaboration between teaching faculties

and teaching-and-research faculties emerges (enabling communication and learning from each other). In this study, teaching faculties and teaching-and-research faculties are two sub-communities. Although the boundary between the two sub-communities is vague (because teaching is widely recognised as the primary responsibility that the vast majority of academic staff share), some members from each sub-community can be considered the 'brokers' (Wenger, 1998) who encourage the interactions between the sub-communities of teaching faculties and teaching-and-research faculties. Moreover, Wenger (1998) illustrated the idea of core membership and peripheral membership in communities of practice. Even though this research is investigating teaching, it does not mean that teaching-and-research academics are necessarily the peripheral members of such a community of practice. According to the current status of teaching faculty in academia, which has less legitimacy in directing academic practices, teaching-and-research faculties may be more influential and at the core of such a community of practice for enhancing undergraduate education.

To summarise, universities must make clear expectations for teaching faculties and formalise their associated treatment, including but not limited to salaries and respect. Furthermore, universities must establish a consensus among all university staff that teaching faculties are beneficial to the university, particularly teaching.

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