Reforming pedagogy to support the development of critical thinking in Ghana, Kenya and Botswana: The challenge of changing faculty identities, motivations and behaviours (0446)

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Critical thinking is espoused as a key learning outcome of a university education by national higher education strategies and individual institutions around the world (Davies & Barnett, 2015). However, there is widespread evidence that, although universities *can* support the development of critical thinking skills in their students, such development cannot be assumed (Arum & Roksa, 2011; Blaich & Wise, 2010; Saavedra & Saavedra, 2011). Rather, myriad studies of teaching and learning within university contexts have demonstrated that certain academic experiences have the potential to foster the development of such skills, while others – even if quite effective by other measures – are less likely to do so or may even actively prevent such development. In particular, activities which encourage dialogue between different perspectives (Baxter Magolda, 1999; Howe, Tolmie & Rodgers, 1992; Kember & Leung, 2005; Osborne, 2010; Tsui, 2002), as well as those which approximate complex 'real-world' situations (Bransford, Brown & Cocking, 1999; Kuhn, 2005), have been found to be particularly effective in supporting the development of student critical thinking skills. As these activities are often a significant departure from traditional forms of university pedagogy (namely, the academic lecture), many universities around the world have launched processes of pedagogical reform, in order to move away from these traditional methods and to adopt more 'innovative' approaches to teaching, learning and assessment.

Universities in sub-Saharan Africa are no exception to this trend. After decades of limited focus on pedagogy, many institutions across the continent have launched processes of pedagogical reform in recent years (Brewis & McCowan, 2016). Many of these reforms have focused on the development of 'soft' and/or 'generic' skills, such as critical thinking, and have aimed to shift traditional teaching methods away from the standard lecture and toward more active and collaborative forms of learning. The intensity of the reforms vary, from those simply incorporating more collaborative elements into the standard lecturing format (e.g. class discussions and group presentations) to those more aggressively pursuing whole-scale curriculum reform (e.g. the incorporation of problem-based learning as the pedagogical model underpinning an entire academic programme). However, all require a significant shift in faculty behaviour and, often, a related change in how faculty members perceive their role and identity as teachers (sometimes referred to as their 'teaching orientation' [Kember & Gow, 1994]).

We are currently finalising an ESRC-DFID-funded study that investigated the success of seven such pedagogical reforms that were recently implemented in Ghana, Kenya and Botswana. The investigation followed a mixed-methods design, comprising a longitudinal analysis of students' critical thinking skills and qualitative analysis of student and faculty understandings of - and experiences with – the reform process. Each of the seven 'intervention' universities was paired with a matched 'control', thereby allowing us to both compare the progress of students within 'intervention' universities with those enrolled at similar institutions which had not made any change to pedagogy (using a 'difference-in-difference' methodology), and to contrast the academic environment within universities both attempting and not attempting pedagogical reform.

The results, in the main, are sobering, as most of the reforms cannot be linked to any statistically significant change in students' critical thinking skills. However, there are exceptions, with some reforms showing clear impact on student critical thinking. The results from all of the participating universities also support a clear conclusion, with important implications for those attempting processes of pedagogical reform around the world: that faculty members are unlikely to fundamentally change their approach to teaching unless their underlying teaching orientations are challenged. It appears that such a shift is only likely to occur when an institution (or department) as a whole embraces a shared teaching 'culture' or ethos, when all aspects of teaching (e.g. curricular content, pedagogy and assessment) are aligned, and when faculty motivations are seriously taken into consideration. Without such a holistic approach, faculty members are likely to either consciously or subconsciously adapt any pedagogical reform to match their pre-existing understanding of their role as teachers, thereby altering the reform in practice and minimising the likelihood that the change in pedagogy will have any significant effect on students' critical thinking skills.

References

Arum, R. and Roksa, J. (2011). *Academically adrift : limited learning on college campuses*. Chicago, IL: University of Chicago Press.

Baxter Magolda, M. B. (1999). *Creating Contexts for Learning and Self-Authorship: Constructive-Developmental Pedagogy*. Nashville, TN: Vanderbilt University Press.

Blaich, C. and Wise, K. (2010). *Wabash National Study of Liberal Arts Education 2006-2009: Overview of Findings from the First Year*. Wabash College Center of Inquiry. Available from http://www.liberalarts.wabash.edu/study-4th-year-data/.

Bransford, J. D., Brown, A. L. and Cocking, R. R. (Eds). (1999). *How People Learn: Brain, Mind, Experience, and School*. Washington, DC: National Academy Press.

Brewis, E., and McCowan, T. (2016). *Enhancing Teaching in African Higher Education: Perspectives of quality assurance and academic development practitioners in Ghana, Nigeria, Kenya and South Africa*. London: British Council.

Davies, M., and Barnett, R. (2015). 'Introduction'. In M. Davies & R. Barnett (Eds.), *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 1-26). New York: Palgrave Macmillan.

Howe, C., Tolmie, A. and Rodgers, C. (1992). 'The acquisition of conceptual knowledge in science by primary school children: Group interaction and the understanding of motion down an incline'. *British Journal of Developmental Psychology*, 10: 113-130.

Kember, D. and Gow, L. (1994). 'Orientations to Teaching and Their Effect on the Quality of Student Learning'. *The Journal of Higher Education,* 65 (1):58-74.

Kember, D. and Leung, D. Y. P. (2005). 'The Influence of the Teaching and Learning Environment on the Development of Generic Capabilities Needed for a Knowledge-Based Society'. *Learning Environments Research*, 8: 245-266.

Kuhn, D. (2005). *Education for Thinking*. Cambridge, MA: Harvard University Press.

Osborne, J. (2010). 'Arguing to Learn in Science: The Role of Collaborative, Critical Discourse'. *Science* 328: 463-466.

Saavedra, A.R. and Saavedra, J.E. (2011). Do colleges cultivate critical thinking, problem solving, writing and interpersonal skills? *Economics of Education Review,* 30: 1516-1526.

Tsui, L. (2002). 'Fostering Critical Thinking through Effective Pedagogy: Evidence from Four Institutional Case Studies'. *The Journal of Higher Education*, 73 (6): 740-763.